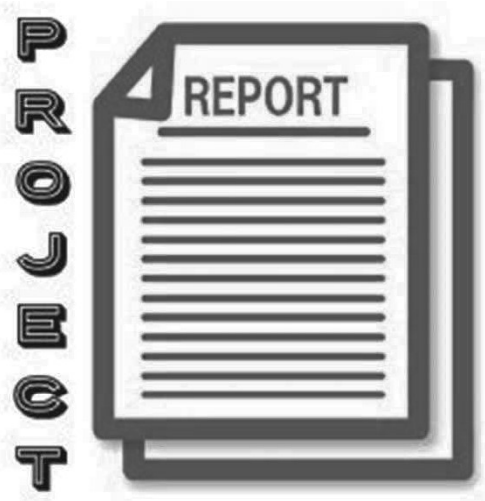
Chapter -6



Programme Project Report (PPR)

[In Compliance of UGC (Open and Distance Learning Programmes and Online Programmes) Regulations 2020]

M.P. Bhoj (Open) University, Bhopal (M.P.)

Content

	19. Master of Science (Chemistry)	
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PPR

For seeking approval to introduce new programme through ODL

[In Compliance of UGC (Open and Distance Learning Programmes and Online Programmes) Regulations 2020]

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

BACHELOR OF ARTS

Apprenticeship Embedded Degree Programme

(from Calendar Year 2023)

Submitted to

UGC, DISTANCE EDUCATION BUREAU (DEB)

New Delhi

For seeking approval to introduce new programme through ODL

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MADHYA PRADESH BHOJ OPEN

UNIVERSITY, BHOPAL

BACHELOR OF ARTS

APPRENTICESHIP EMBEDDED DEGREE PROGRAMME

Credit Based Curriculum Evaluation System (CBCS)
(With effect from Calendar Year 2023 Onwards)

Preamble:

India is going to have the largest working age population in the world by 2030, but gainful employment for general stream students is a major challenge. Improving employability of these students requires a new vision with curriculum support for employment. Apprenticeship/ internships have a prominent role to play in linking higher education with the requirements of the industry and the world of work. This is considered to be one of the most effective ways to develop skilled manpower for the country. It provides for an industry led, practice oriented and outcome based learning. Striving to fulfill this objective of improving employability and forming robust industry-academia linkage, the UGC has framed Guidelines for Higher Education institutions to offer Apprenticeship/internships embedded Degree Programme. The UGC Guidelines will provide an option for Higher Educational institutions to embed Apprenticeship/ Internship in any UG degree programmes specified by UGC. This will focus on outcome-based learning in degree programme and will enable students to demonstrate workforce professional abilities for potential employment.

Programme's Mission and Objectives

At the end of the programme student will be:

- Imbibed with the foundation knowledge of Psychology, Economics and Sociology.
- Develop a scientific bent of mind while dealing with inthe real life problems and needs
- Be imbued with the qualitiesrelevant to the social development in terms of realization of human values, creative ability, sense of social service

Programme Specific Outcome:

1. Able to comprehend the basic economic concepts and their relevance.
2. Able to analyse economic behaviour in practice.
3. Able to respond on the issues relevant the society, social life and social interaction.
4. Able to apply the principles of psychology in everyday life.
5. Able to practice the basics of counselling and stress management,
6. Gain a broad background useful for career related examinations.

(a) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

This programme is aligned with HEI's and Madhya Pradesh Bhoj Open University mission and goals to be offered through distance mode to reach quality higher education to the unreachable and/or rural learners. Higher education in Computer Science offered through distance mode meets the mission of HEI's like digital India and e-cash transaction will enrich the Human resources for the uplift of the nation.

(b) Nature of prospective target group of learners

The apprenticeship embedded degree programme is designed for individuals who are interested in pursuing a career in a specific industry or field while also gaining academic qualifications. This programme is typically targeted towards individuals who want to combine practical work experience with theoretical knowledge and skills.

The Bachelor of Arts degree programme is a broad-based programme that covers a wide range of subjects, including humanities, social sciences, and creative arts. Therefore, the target group of learners for this programme can vary greatly depending on the specific focus of the programme.

However, generally speaking, the prospective target group of learners for a Bachelor of Arts apprenticeship embedded degree programme may include:

1. High school graduates who want to pursue a career in a specific industry while also obtaining a bachelor's degree.
2. Individuals who are already working in a specific industry and want to enhance their skills and knowledge.
3. Individuals who are interested in pursuing a career in a specific industry but do not have prior work experience and are willing to learn through a combination of academic study and practical work experience.
4. Individuals who want to pursue a career in a creative field such as writing, music, or art, and want to combine practical work experience with academic study.
5. Individuals who are interested in pursuing a career in the social sciences, such as psychology, sociology, or anthropology, and want to gain practical work experience in their chosen field.

Overall, the Bachelor of Arts apprenticeship embedded degree programme is designed for individuals who want to gain both practical work experience and academic qualifications in their chosen field, making it an ideal option for those who are looking to jumpstart their careers.

(c) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

The appropriateness of conducting a Bachelor of Arts apprenticeship embedded degree programme in Open and Distance Learning (ODL) mode to acquire specific skills and competence depends on the specific design and delivery of the programme. However, in

general, ODL mode can be an effective approach for learners who are interested in pursuing an apprenticeship embedded degree programme.

ODL mode offers flexibility in terms of time and location, which can be beneficial for learners who are already working or have other personal commitments. It allows learners to access course materials and participate in discussions and activities at their own pace and convenience. ODL mode also provides learners with opportunities to connect with other learners and instructors through online forums, video conferencing, and other virtual platforms.

In the case of the Bachelor of Arts apprenticeship embedded degree programme, ODL mode can be an appropriate approach as it allows learners to combine theoretical knowledge with practical work experience. The apprenticeship component of the programme can be completed at the learner's workplace, while the academic component can be delivered through online courses, webinars, and other virtual platforms.

The programme's appropriateness in ODL mode would depend on factors such as the quality of course materials, the availability of support services such as tutoring, mentoring, and counseling, and the effectiveness of assessment and evaluation mechanisms. It is also important to ensure that the programme meets the requirements of the relevant accreditation and regulatory bodies.

Overall, the appropriateness of conducting a Bachelor of Arts apprenticeship embedded degree programme in ODL mode to acquire specific skills and competence would depend on various factors, including the programme's design, delivery, and support services.

(d) Instructional Design

e.1 Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.
2. Each student should secure 132 credits to complete BA(AEDP) programme.
3. Each theory and practical course carries 2 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

Programme code

BA(AEDP)

Course of Study and Scheme of Examinations

PROGRAMME STRUCTURE

FIRST YEAR

First Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C1	BCEC101	English	4	70	30	100
Core –C2	BCEC102	Foundations of Psychology	4	70	30	100
Core-C3	BCEC103	Principles of Sociology	4	70	30	100
AEC-1	BCEC104	Environmental Science	2	70	30	100
SEC-1	BCEC105	Computer Fundamentals	2	70	30	100
Apprenticeship	BCEC106	Apprenticeship/Internship	6	-	-	100
	Total		**22**	**350**	**150**	**600**

Second Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C4	BCEC201	Optional Language/MIL	4	70	30	100
Core –C5	BCEC202	Macro Economics	4	70	30	100
Core-C6	BCEC203	Cognitive Psychology	4	70	30	100
AEC-2	BCEC204	Communicative English	2	70	30	100
SEC-2	BCEC205	Industrial Relations & Collective Bargaining	2	70	30	100
Apprenticeship	BCEC206	Apprenticeship/Internship	6	-	-	100
		Total	**22**	**350**	**150**	**600**

SECOND YEAR

Third Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core-C7	BCEC301	Social Stratification	4	70	30	100
Core –C8	BCEC302	Life Span Development	4	70	30	100
SEC-3	BCEC303	Basic Research Skills	2	70	30	100
GE-1	BCEC304	Indian Economy	4	70	30	100
Apprenticeship	BCEC305	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**280**	**120**	**500**

Fourth Semester

Course	Course Code	Title of the Paper	Credits	Total Marks		
				UE	IA	Total
Core-C9	BCEC401	Social Movements and Social Change in India	4	70	30	100
Core- C10	BCEC402	International Economics	4	70	30	100
SEC-4	Bcec403	Basic Computing Skills	2	70	30	100
GE-2	BCEC404	Emerging trends in HRD	4	70	30	100
Apprenticeship	BCEC405	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**280**	**120**	**500**

THIRD YEAR

Fifth Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core- C11	BCEC501	Positive Psychology	4	70	30	100
DSE-A-1	BCEC502	1. (Psychology)Social Psychology 2. (Sociology)Sociology of development 3. (Economics) Development Economics	4	70	30	100
DSE-A-2	BCEC503	1 (Psychology)Fundamentals of Human Behavior Stratification 2. (Sociology)Contemporary Politics & Issues of Globalization 3. (Economics) Health Economics	4	70	30	100
APP-1	BCEC504	Apprenticeship/Internship project	6	-	-	100
Apprenticeship	BCEC505	Apprenticeship/Internship	6	-	-	100
		Total	**24**	**180**	**120**	**500**

Sixth Semester

Course	Course Code	Title of the Paper	Credits	Total Marks		
				UE	IA	Total
Core-C12	BCEC601	Urban Sociology	4	70	30	100
DSE-B-1	BCEC602	1 (Psychology)Health Psychology 2. (Sociology)Sociology of Women 3. (Economics)Statistics of Economics	4	70	30	100

DSE-B-2	BCEC603	.(Psychology)Abnormal Psychology . (Sociology)Contemporary Social Problem 3.(Economics) Economics of Entrepreneurship	4	70	30	100
APP-2	BCEC605	Apprenticeship/Internship Project	6	-	--	100
Apprenticeship	BCEC606	Apprenticeship/Internship	6			100
		Total	**24**	**180**	**120**	**500**

TOTAL CREDITS: 132

e.2 Detailed Syllabi

SEMESTER I
GENERAL ENGLISH

60 hours **Credits: 04**

Course Outcomes:

1. To be able touse correct English in oral as well as written communication.
2. To Interpret the literary works by critical analysis.
3. To compare literary works of somewell-known writers and philosophers by appreciation of their logic and literary competency
4. To be nurtured in soft skills and developing apositive attitude.
5. To demonstrate knowledge of the major texts and traditions of English literature in their social, cultural and historical context
6. To analyse the functions of texts and their relations with historical, social and political contexts

Prose:

1. Plausibility in Fiction – Somerset Maugham
2. The Long Exile – Leo Tolstoy
3. Three days to see – Helen Keller
4. The Disrupted Coronation – Sreedevi K B
5. A Dollar – Play by David Pinski

Poetry

1. A dog has died – Pablo Neruda
2. An Ode to the grasshopper – Pedro Pietri
3. To Autumn – John Keats
4. The Patriot – Nissim Ezeikel
5. The Mad – K Satchidanandan

Reference book:

- Prof. David Raiches – A critical history of English literature – Volume I and II
- Ruskin Bond – Collected short stories
- The Essential Writings and Essays (2000) (Modern Library Classics), by Ralph Waldo Emerson

- Pride and Prejudice – Jane Austen, Society of North

SEMESTER I
FOUNDATIONS OF PSYCHOLOGY

60 hours **Credits: 04**

COURSE OUTCOMES

1. To understand the discipline of psychology as an experimental science.
2. To have an overview of the major schools of psychology.
3. To apply these concepts in everyday life situations.

Module 1: HISTORY OF PSYCHOLOGY AND RESEARCH IN PSYCHOLOGY (12 Hours)

1. Definition, History of psychology, Goals of Psychology
2. Specializations-traditional and emerging in Psychology, Ethical Issues in Practice of Psychology
3. Psychology as a Scientific Method
4. Methods of studying Psychology:
    1. Classical methods- Free Association, Introspection
    2. Modern methods: Narco- Analysis, Hypnosis, Experimentation, Observation, survey, case study;
5. Indian psychology: Indian perspectives and approaches to psychology.

Module 2: SCHOOLS OF THOUGHT IN PSYCHOLOGY (10 Hours)

1. Understanding the concept of school of thoughts
2. A brief historical perspective- Rationalism, Empiricism, Structuralism, functionalism
3. Major Schools in Psychology- Psychoanalytic theories (Freud); Behaviourism (Thorndike and Watson); Humanistic theories (Maslow and Rogers), Existentialism.

Module 3: PERSONALITY (14 Hours)

1. Definition, Historical perspectives of personality: Hippocrates, Willam Sheldon, Ernst Kretschmer;
2. Trait theories : Alport, Cattle, Eyesnak,Big 5 personality;
3. Type theory: Type A/type B, Jung and Myers- Brigg's.
4. Approaches to understanding personality-Psychoanalytic(Freud), Behavioural, Humanistic and Social-Cognitive approach; Existentialism (Victor Frankl and Rollo May)
5. Measurement of Personality- Questionnaires, Rating Scales, Projective Tests; Issues in measuring personality.

Module 4:MOTIVATION (12 Hours)

1. Definition, Differences between motives, drives, needs,

2. Theories of Motivation: Instinct Approach, Drive Reduction Approach, Incentive Approach, Arousal approach ,
3. Types of motives and its psychological implications: Biological (Hunger, Thirst, Sex, Sleep), Social Motives (Achievement, Affiliation, Power), Other Motives(Exploration, Curiosity, Manipulation and Contact Aggression)

Module 5: EMOTIONS (12 Hours)

1. Definition, Physiology of Emotions, Expression of Emotions, Culture and Emotion,
2. Theories of emotion: James-Lange Theory, Cannon-Bard Theory, Schachter's Cognitive Theory of Emotions, The Facial Feedback Hypothesis;
3. Emerging trends in understanding emotions,
4. Emotional intelligence and Emotional quotient.

BOOKS FOR REFERENCES:

1. John.W Santrock, Psychology Essentials 2, II Edition (Updated) 2006, Tata McGraw Hill Publication.
2. 2.Saundra K Ciccarelli and Glenn E Meyer, Psychology, South Asian Edition, Dorling Kindersley (India) Pvt. Ltd., Licensees of Pearson Education in south Asia
3. Feldman. R.S Understanding Psychology, IV Edition, 2006, Tata McGraw Hill Publication.
4. Robert A Baron, Psychology, III Edition, Prentice Hall Publications.

SEMESTER I
PRINCIPLES OF SOCIOLOGY

60Hours **4 credits**

COURSE OUTCOMES

- Display understandingof the nature & scope of sociology
- To distinguishvarious concepts in sociology, and contributions of the pioneers of sociology.
- To critically analyse the developments in diverse sociological perspectives

Module 1:

THE NATURE OF SOCIOLOGY

a) The meaning & Definition of Sociology
b) Origin and Development of Sociology
c) Scope and Nature of Sociology
d) Sociology and other Social Sciences-Anthropology, Economics, Psychology and Business Management.

Module 2:

BASIC CONCEPTS

a) Society: Meaning, Types, Characteristics
b) Community: Definition and Characteristics
c) Social Group: Definition, Types and Characteristics
d) Association: Definition and Characteristics

Module 3:SOCIAL INSTITUTIONS

a) Family: meaning, characteristics and functions
b) Religion: meaning, characteristics and functions

c) Education: Social Process, Social Functions of Education
d) Economy: Social Importance of Work and Occupation

Module 4:PIONEERS OF SOCIOLOGY

a) Auguste Comte: Law of Three Stages, Social Statistics and Dynamics,
b) Herbert Spencer: Organic Analogy, Theory of Social Evolution,
c) Emile Durkheim: Suicide, Division of labour
d) Max Weber: Bureaucracy, Ideal Types

Module 5:SOCIOLOGICAL PERSPECTIVES

a) Structural-Functional: Robert K Merton, Talcott parson
b) Conflict- Karl Marx, Ralf Dahendrof
c) Symbolic Interactionism- G H Mead, C.H. Cooley.

BOOKS FOR REFERENCE

Jayaram, N. Introductory Sociology, Madras, Macmillian, 1988
Gisbert, P. Fundamentals of Sociology, New Delhi, Orion Blackswan, 2010
Harlambos, M. Sociology: Themes and Perspectives, New Delhi, Oxford University Press
Bottomore, T. B. Sociology: A Guide to Problems and Literature,Sydney: Allen and Unwin
Johnson, Harry,M.Sociology:A Systematic Introduction, New Delhi, Allied Publishers,1995
Rawat, H. K. Sociology: Basic Concepts, Jaipur, Rawat,2007
Shankar Rao, C.N. Principles of Sociology, New Delhi, S.Chand Publishers, 2012
Shankar Rao, C.N. Principles of Sociology, New Delhi, S.Chand Publishers, 2012

SEMESTER I

ENVIRONMENTALSTUDIES

Credits: 4 **Hours: 30**

Course Outcomes:

1. To demonstrate knowledge of key environmental issues and problems at local, regional and global scales.
2. Display sensitivity towards environmental concerns, and impacts of climate change and related mitigation strategies.
3. To be able to suggest ways to apply the knowledge for efficient environmental decision-making, management and sustainable development.

Module1: **(2hrs)**

TheMultidisciplinaryNatureof EnvironmentalStudies

Definition, scope and importance.Needfor publicawareness.

Module2: **(8hrs)**

NaturalResources

i. Renewable and Non-Renewable Resources Natural resourcesandassociatedproblems
ii. Forestresources:Useandover-exploitation,de-

forestation,casestudies.Timberextraction,mining, dams and their effects on forests andtribal people.

iii. Waterresources:Useandover-utilizationofsurfaceandgroundwater,floods,drought,conflictsoverwater, dams-benefits and problems.

iv. Mineral Resources:Useandexploitation, environmental effectsofextracting and usingmineralresources, casestudies.

v. Foodresources:Worldfoodproblems,changescausedbyagricultureandovergrazing,effectsofmodernagriculture,fertilizer-pesticideproblems,waterlogging,salinity,casestudies.

vi. Energy resources: Growing energy needs, renewable and non-renewable energy sources, useofalternateenergysources. Casestudies.

vii. Land resources: Land as a resource, land degradation, man induced landslides, soil erosionanddesertification.

viii. Roleofanindividualinconservationofnaturalresources.Equitableuseof resources forsustainablelifestyles.

Module3:(6hrs)

Ecosystems

i. Conceptofanecosystem.
ii. Structure and function of an ecosystem
iii. Producers, consumers and decomposersEnergy flow in the ecosystem
iv. Ecologicalsuccession
v. Foodchains,food websandecologicalpyramids
vi. Introduction,types,characteristicfeatures,structureandfunctionofthefollowingecosystem:

Forestecosystem, Grassland ecosystem,Desertecosystem, Aquaticecosystems(ponds,streams,lakes,rivers, oceans,estuaries)

Module4:(8 hrs)

Bio diversity and its conversation

i. Introduction– Definition:Genetic,speciesandecosystemdiversity.Biogeographicalclassification ofIndia
ii. Valueofbiodiversity:Consumptiveuse,productiveuse,social,ethical,aestheticandoptionvalues
iii. Biodiversity at global, National and local levelsIndia as amega-diversitynation
iv. Hot-spotsof biodiversity
v. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.Endangeredand endemicspecies ofIndia.

vi. Conservationofbiodiversity:In-situandEx-situconservationofbiodiversity.

Module5:Environmental Pollution(6hrs)

Definition

Causes, effects and control measures of:

i. Air pollution Water Pollution Soil pollution, Nuclear hazards
ii. Solidwastemanagement:Causes,effectsandcontrolmeasuresofurbanandindustrial wastes.
iii. Role of an individual in prevention of pollution.Pollution case studies.
iv. Disastermanagement:Floods,earthquake,cycloneandlandslides.

Books for Reference:

- Madhav Gadgil and Ramachandra Guha (1992)-This Fissured Land: An Ecological History of India (ISBN 978-0-19-807744-2)
- Daniel R. Headrick (2020) - Humans Versus Nature: A Global Environmental History – Oxford UP (ISBN 978-0-19-0864729)
- Tewari D. N. (2020) - Sustainability Crisis - Prabhat Prakashan (ISBN 9788184300734)

SEMESTER I

COMPUTER FUNDAMENTALS

Credits :2 30 Hours

Course Outcomes:

1. To demonstrate knowledge of computers as appropriate to the discipline.
2. To analyze impacts of computers on individuals, organizations, and society
3. To be able to use computer data processingapplications for use in office as well as daily life environment
4. Display conceptual understanding of computer networking and their applications

Module – 1 10 hours

General features of a computer, Generation of computers, Personal computer, workstation, mainframe computer and super computers. Computer applications – data processing, information processing, commercial, office automation, industry and engineering, healthcare, education, graphics and multimedia

Module –2 08Hours

Word processing and electronic spread sheet. An overview of MSWORD, MSEXCEL and MSPOWERPOINT.

Module – 3 **12 Hours**

Network of computers. Types of networks, LAN, Intranet and Internet. Internet applications. World wide web, E-mail, browsing and searching, search engines, multimedia applications.

Books for Reference:

1. Alexis Leon and Mathews Leon (1999) : Fundamentals of information Technology, Leon Techworld Pub.
2. Jain, S K (1999) : Information Technology "O" level made simple, BPB Pub
3. Jain V K (2000) "O" Level Personal Computer software, BPB Pub.
4. Rajaraman, V (1999): Fundamentals of Computers, Prentice Hall India
5. Sinha. Computer Fundamentals BPB Pub.

Evaluation Scheme

Evaluation is an essential component during the learning progression of diverse courses in the programme. Performance assessmentof the student is based on the twin components, namely, (i) on the job performance as part of apprentice ship and (ii) learning components assessed through the theory oriented courses as per criteria laid down..Both formative (Internal Assessment) and summative assessments (Semester End Examination) are devised to arrive at the overall assessment of outcomes.

The allocation of weightages and marks for Internal Assessment and SEE are as follows:

Internal Assessment Components:

Internal Assessment in each course will carry a weightage of 30 marks

- There will be 3 Internal assessments per course and of these three, the best two performances would be considered for calculation of Internal Marks.
- All Internal Assessments will be conducted through online mode using Learning Management System (LMS – E learning platform used by the university) as per the following schedule.**Internal Assessment Schedule**

No. of modules in the course	Internal Assessment 1	Internal Assessment 2	Internal Assessment 3
4- module course	After completion of Module 1	After completion of Module 2	After completion of Module 4
5- module course	After completion of Module 1	After completion of Module 3	After completion of Module 5
6- module course	After completion of Module 2	After completion of Module 4	After completion of Module 6

Each Internal Assessment carries 15 marks in a course and the best 2 of 3 will be considered while computing the Final Internal Assessment marks. Students must score minimum 12 marksto become eligible for the term end/semester end examination.

All Internal Assessment will be conducted online and the questions will be of Objective type (most of the times MCQs). Evaluation of Internal Assessment is automated and no manual intervention is involved in evaluation. Only one attempt is allowed for every student for each Internal Assessment, no reattempt is allowed for Internal Assessments.

Term End Exams – 70 marks

This is an online or pen paper evaluation exam with a non-interactive session of specified time period to evaluate comprehension of theoretical concepts, ability to apply concepts and integration of the subject knowledge in different areas. The exam shall have a weightage of 70 Marks.

Term End Examination is divided into 3 parts

Part A – 30 marks – Consists of 30 MCQs each question carrying 1 mark -

Part B - 20 marks - Consists of 4 descriptive questions each carrying 5 marks

Part C - 20 marks - Consists of 4 application-based questions each carrying 5 marks

A student in order to successfully pass in a course should score minimum of 40 marks in aggregate and with a minimum of 28 marks from semester end examination and a minimum of 12 marks from Internal Assessments. Students falling short of above criteria would need to take repeat examination until they fulfill this condition

Assessment Weightage:

Note: Apprenticeship / Internship hours per semester of 360 hours is mandatory to complete the Programme.

Submission of Apprenticeship/internship duration report by the learner duly endorsed by the official reporting head/Supervisor at work place is obligatory for declaration of semester results. Else it would be withheld.

In case of not fulfilling this mandating in any semester, the student has to repeat the Apprenticeship/Internship work hours for the stipulated period to qualify for obtaining the degree certificate. The student would be permitted to carry forward to one additional semester to make good the gaps if any in the Apprenticeship/Internship work hours.

Student will be declared as successfully completed the particular semester if he scores the minimum criteria in Internal Examination, term end examination in all courses as well as in the Apprenticeship/Internship.

Student will be declared successfully completed the programme if he/she successfully clears all the semesters without any back log.

e.3 Duration of the Programme:

Three year (Six Semesters).

e.3.1 Medium of Instruction

The medium of instruction is only in **English**.
The course material is also in **English.**

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	3
Clerical Assistant	1

*Faculty at least in Assistant Professor level

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e-book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and Virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

(e) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the BA(AEDP) shall be required to have passed the following

examinations.

Candidates seeking admission to the certificate programme shall be required to have passed H.Sc or (10+2/10+3) of any Recognized institution or authority accepted by the Board of Management of the Madhya Pradesh Bhoj Open University as equivalent thereto shall be eligible.

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**Face to face contact session per semester(in Hours)**
Theory courses (3 Courses – 6 Hrs/course)	18
Practical course(1 Course – 60 Hrs/course	60
Total	**78**

f.3 Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The end semester examination for theory and practicalis maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through class test, home assignment with workbook, case studies, review questions, quiz, multiple choice questions for 25 marks.

Division of Internal Marks (Assignment)

Theory	
Assignment	**Marks**
Class Test, Long and short answer questions, Workbook, case studies,quiz, Multiple Choice Questions(MCQ)	25

TOTAL	**25**

Assessment of Apprenticeship:

Assessment components	**Details**
Attendance Report / Daily Report (20%)	• Attendance certified by employer • Daily report by candidate *Google Form with following fields:* *1. Date* *2. Time In (Dropdown)* *3. Time Out (Dropdown)* 4. *Daily On-Job Activities/ learning content*
Presentation and viva-voce/demonstration test (15%)	Presentation at the end of semester and viva voce/ demonstration testof the skills relevant to job role semester
Report (30%)	Submission of Apprenticeship report containing learning contents/ methods/ procedures
Learner Feedback Report (15%)	To be submitted at the mid and the end of each semester as assessed by industry mentor
Performance Feedback Report (20%)	To be submitted at the mid and the end of each semester as assessed by industry mentor To be submitted at the mid and the end of each semester as assessed by industry mentor

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

f.3.1 Minimum for a pass:

To pass in each course, a candidate is required to secure 40% marks in the End Semester examination and 40% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who does not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the units Should be covered in each Part

Part – A (10 x 2 Marks: 20 Marks) Answer all questions
Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)
Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.

Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the B.A.(AEDP) only if he/she passes all the (including arrears) courses with in a period of Five years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate.

Range of Marks	Grade Points	Letter Grade	Description
96-100	10.00	S+	First class – Exemplary
91-95	9.5	S	
86-90	9.0	D++	First class – Distinction
81-85	8.5	D+	
76-80	8.0	D	
71-75	7.5	A++	First Class

66-70	7.0	A+	
61-65	6.5	A	
56-60	6.0	B	Second Class
50-55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_iG_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses
Sum of the credit of the courses in the semester
= Sum of [Credit earned x Grade Points]
Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n\sum_i C_{ni}G_{ni} / \sum_n\sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme
Sum of the credits of the courses for the entire programme

Where

C_i - Credits earned for the course i in any semester G_i – Grade Point earned for course i in any semester
n - is number of all Courses successfully cleared during the particular semester in the caseof GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1–9.5	S	
8.6–9.0	D++	First class with Distinction*
8.1–8.5	D+	
7.6–8.0	D	
7.1–7.5	A++	First Class
6.6–7.0	A+	
6.1–6.5	A	
5.6–6.0	B+	Second Class
5.0– 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Rs.
Admission Processing Fees	300
Course Fees	5,000
Total Fees	**5,300**

The above mentioned fees structure is exclusive of examination fees.

(f) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

g.2 Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(g) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment)	10,00,000/-
Programme delivery (per year)	24,00,000/-
Programme maintenance (per year)	5,00,000/-

(h) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(i) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

(ii) Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Expected Programme Outcomes:

- Graduates of the Bachelor of Arts Apprenticeship Embedded Degree Programme should have a strong theoretical foundation in their chosen field.
- Graduates should be able to apply their theoretical knowledge to real-world problems and situations.
- Graduates should have developed the necessary skills and competencies to succeed in their chosen profession.
- Graduates should have gained practical work experience through their apprenticeship placement.
- Graduates should be able to communicate effectively and work collaboratively with others.
- Graduates should have developed a strong work ethic and a commitment to lifelong learning.

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MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

POST GRADUATE DIPLOMA IN
ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

(from Calendar Year 2023)

Submitted to
UGC, DISTANCE EDUCATION BUREAU (DEB)
New Delhi
For seeking approval to introduce new programme through ODL

Table of contents

MADHYA PRADESH BHOJ OPEN

UNIVERSITY, BHOPAL

POST GRADUATE DIPLOMA IN ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Credit Based Curriculum Evaluation System (CBCS)
(With effect from Calendar Year 2023 Onwards)

(a) Programme's Mission and Objectives

Mission

Mission is to impart excellent career opportunities in various industries including software development companies in the areas of Decision making, Data analysis, design AI models, implement AI algorithms in real-world applications, supports, game programming etc.

Programme Objectives:

- ✓ Discover, investigate the requirements of a AI problem and find the solution to them using computing principles.
- ✓ Create and evaluate a computer-based AI model, components and process to meet the specific needs of applications.
- ✓ Utilize current techniques and tools necessary for AI practices.
- ✓ Develop and integrate effectively AI based components into user environment.
- ✓ Identify the need and develop the skill to employ in learning as a data analyst, big data analyst professional.
- ✓ Execute effectively in a team environment to achieve a common goal.
- ✓ Classify opportunities and use innovative ideas to create value and wealth for the betterment of the individual and society.
- ✓ Proficiency in developing application with required domain knowledge.

Programme Outcome:

- ✓ To support learner's capability to set up their own enterprise in Artificial Intelligence and Data Science.
- ✓ Create AI/ML solutions for various business problems.
- ✓ Build and deploy production grade AI applications.
- ✓ Apply AI/ML methods, techniques and tools immediately.
- ✓ To improve the knowledge of the learners in finding solutions and developing AI models for real time problems in various domains involving technical, managerial, economical & social constraints
- ✓ To develop in problem solving and programming skills in the various fields of data analysis.
- ✓ To prepare the learners to pursue higher studies in computing or related disciplines and to work in the fields of business, teaching and research.
- ✓ To gain experience of doing independent study and research.

(b) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

This programme is aligned with HEI's and Madhya Pradesh Bhoj Open University mission and goals to be offered through distance mode to reach quality higher education to the unreachable and/or rural learners. Higher education in Computer Science offered through distance mode meets the mission of HEI's like digital India and e-cash transaction will enrich the Human resources for the uplift of the nation.

(c) Nature of prospective target group of learners

The nature of prospective target group of learners is graduates from various disciplines like Commerce, Mathematics, Physics, Chemistry, Biology, Electronics, and Engineering etc. It also includes the learners who want to become entrepreneurs like Data Analyst, Data Science professionals, Software Developers, Big Data Analyst, BPO's, KPO's etc.,

(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

PG Diploma Programme in Artificial Intelligence and Data Science through Distance Learning mode is developed in order to give subject-specific skills including i) Knowledge about various kinds of programming languages like R programming and Python Programming ii) Artificial intelligence fundamentals, Relational Database Management System(RDBMS), iii) Soft computing techniques include fuzzy logic, Neural Networks and Genetic algorithms iv) Data analysis Software tools like Matlab, Weka, Tangara, keyras and Tensorflow. Data modeling: Data scientists should be able to build and evaluate predictive models using techniques such as regression analysis, time series analysis, and hypothesis testing.
Big data: Data scientists should be familiar with technologies such as Hadoop, Spark, and NoSQL databases, which are used for processing and analyzing large-scale data.

(e) Instructional Design

e.1 Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.
2. Each student should secure 16 credits to complete PG Diploma in AI&DS programme.
3. Each theory and practical course carries 2 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

Programme code

PG Diploma in Artificial Intelligence and Data Science	---

Course of Study and Scheme of Examinations

S.No	Course code	Name of the Course	CIA Marks Max.	ESE Marks Max.	Total Marks Max.	C Max.	Hrs
1	51811	Fundamentals of Artificial Intelligence	25	75	100	2	6
2	51812	Relational Database Management System (RDBMS)	25	75	100	2	6
3	51813	R Programming	25	75	100	2	6
4	51814	R Programming Lab	25	75	100	2	60
		TOTAL	**100**	**300**	**400**	**8**	**78**
		Semester II					
5	51821	Fundamentals of Machine Learning	25	75	100	2	6
6	51822	Principles of Soft Computing	25	75	100	2	6
7	51823	Python Programming	25	75	100	2	6
8	51824	Machine Learning using Python Lab	25	75	100	2	60
		TOTAL	**100**	**300**	**400**	**8**	**78**
GRAND TOTAL			**200**	**600**	**800**	**16**	**156**

CIA : Continuous Internal Assessment **ESE :** End semester Examination **Max**. Maximum Marks; **C :** Credits **Hrs**: Hours

Course Code Legend:

X	Y	Z	S	C

XYZ – Programme code for DAI&ML
S -- Semester Number; C – Course Number in the Semester

No,of Credits per Course(Theory& Practical):2

Total No. of creditsperSemester:8

Total No. of credits of the programme: 8 * 2 =16

e.2 Detailed Syllabi

The detailed Syllabi of study and shall be as shown in Appendix.

e.3 Duration of the Programme:

The PG PG Diploma in Artificial Intelligence and Data Science shall consist of aperiod of Two year (Four Semesters).

e.3.1 Medium of Instruction

The medium of instruction is only in **English**.
The course material is also in **English.**

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	4
Laboratory Assistant	1
Clerical Assistant	1

*Faculty at least in Assistant Professor level

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e-book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and Virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct

of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

(f) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the PG Diploma in Artificial Intelligence and Data Science shall be required to have passed the following examinations.

Candidates seeking admission to the certificate programme shall be required to have passed H.Sc or (10+2/10+3) of any Recognized institution or authority accepted by the Board of Management of the Madhya Pradesh Bhoj Open University as equivalent thereto shall be eligible.

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	Face to face contact session per semester(in Hours)
Theory courses (3 Courses – 6 Hrs/course)	18
Practical course(1 Course – 60 Hrs/course	60
Total	**78**

f.3 Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The end semester examination for theory and practicalis maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through class test, home assignment with workbook, case studies, review questions, quiz, multiple choice questions for 25 marks.
- The internal assessment for the practical courses shall be through home assignment which includes model practical test with workbook designing algorithm, preparing source code,

PL/SQL coding for 25 marks.

- Student should submit assignment for theory and practicalcourses of everycourse and semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment**	**Marks**
Class Test, Long and short answer questions, Workbook, case studies,quiz, Multiple Choice Questions(MCQ)	25	Model Practical Test : Algorithm Design,System design diagrams,Workbook for preparing source code, PL/SQL coding , results	25
TOTAL	**25**	**TOTAL**	**25**

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

f.3.1 Minimum for a pass:

To pass in each course, a candidate is required to secure 40% marks in the End Semester examination and 40% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who does not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the units Should be covered in each Part

Part – A (10 x 2 Marks: 20 Marks) Answer all questions
Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)
Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.

Students shall prepare practical record note book which includes aim, algorithm, source code,

input, expected output and result of the experiment and submit during end semester practical examination.

Division of marks in ESE – Practical (Maximum 75 marks)

The end semester practical examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Practical details	Max. Marks
Algorithm / Flowchart	10
Source Code	20
Debugging	10
Execution	10
Results	10
Viva-Voce	5
Record	10
Total	**75**

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the PG Diploma in Artificial Intelligence and Data Science only if he/she passes all the (including arrears) courses with in a period of Two years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate.

Range of Marks	Grade Points	Letter Grade	Description
96-100	10.00	S+	First class – Exemplary
91-95	9.5	S	
86-90	9.0	D++	First class – Distinction
81-85	8.5	D+	
76-80	8.0	D	
71-75	7.5	A++	First Class

66-70	7.0	A+	
61-65	6.5	A	
56-60	6.0	B	Second Class
50-55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_iG_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses
Sum of the credit of the courses in the semester
= Sum of [Credit earned x Grade Points]
Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n\sum_i C_{ni}G_{ni}/ \sum_n\sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme
Sum of the credits of the courses for the entire programme

Where

C_i - Credits earned for the course i in any semester
G_i – Grade Point earned for course i in any semester
n - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1–9.5	S	
8.6–9.0	D++	First class with Distinction*
8.1–8.5	D+	
7.6–8.0	D	
7.1–7.5	A++	First Class
6.6–7.0	A+	
6.1–6.5	A	
5.6–6.0	B+	Second Class
5.0– 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Rs.
Admission Processing Fees	300
Course Fees	5,000
ICT fees	150
Total Fees	**5,450**

The above mentioned fees structure is exclusive of examination fees.

(g) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

g.2 Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(h) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment)	10,00,000/-
Programme delivery (per year)	24,00,000/-
Programme maintenance (per year)	5,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(j) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
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i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

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Appendix
Detailed Syllabi
SEMESTER I

Semester	Course Code	Title of the Course	Credits	Hours
I	11	FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE	2	6

Course objectives

- The objective of the course is to present an overview of artificial intelligence (AI) principles and approaches.
- Develop a basic understanding of the building blocks of AI as presented in terms problem, problem space: Search, Knowledge representation, inference, logic, and learning.

Course outcome

By the end of this course, you should be able to:

- Create AI solutions for various business problems.
- Build and deploy production grade AI applications.
- Apply methods, techniques and tools immediately.
- To gain experience of doing independent study and research.

Unit 1:

AI - Problems and Search: Introduction: The Artificial Intelligence (AI) Problem – What is an AI technique - Criteria for success. Problems, Problem Spaces, Search: Defining Problems, Problem Spaces, Search State space search - Production Systems – Problem characteristics - Production system characteristics – Application areas.

Unit 2 :

Heuristic Search techniques: Generate and Test - Hill Climbing- Best-First search – Problem reduction – constraint satisfaction - Means-end analysis.

Unit 3:

AI - Knowledge Representation: Knowledge representation issues: Representations and mappings -Approaches to Knowledge representations -Issues in Knowledge representations - Frame Problem.

Unit 4 :

Using Predicate logic: Representing simple facts in logic – Representing Instance and ISA relationships - Computable functions and predicates -Resolution. Representing knowledge using rules: Procedural Vs Declarative knowledge –Logic programming - Forward Vs Backward reasoning - Matching – Control knowledge.

Unit 5 :

AI –Learning : What is learning – Rote learning - Learning by taking advice – learning in problem solving.

Unit 6 :

Learning from examples: Induction - Explanation-based learning – discovery – analogy – formal learning theory – Neural Net Learning and Genetic Learning.

Reference and text books:

1. Dan W. Patterson, "*Introduction to AI and ES*", Pearson Education.
2. Dheeraj Mehrotra(2019), *Basics of Artificial Intelligence & Machine Learning*, Notion Press.
3. Elaine Rich and Kevin Knight(1991)," *Artificial Intelligence*", Second Edition,Tata McGraw Hill, Publishers company Pvt Ltd.
4. Kevin Night, Elaine Rich, Nair B.(2008), "*Artificial Intelligence (SIE)",*McGraw Hill.
5. Stuart Russel, Peter Norvig (2007), "*AI – A Modern Approach*", 2nd Edition, Pearson Education.
6. Venugopal C.K(2019), *Artificial Intelligence and Machine Learning*, Pacific Books International.

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Semester	Course Code	Title of the Course	Credits	Hours
I	12	RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)	2	6

Course Objectives:

- To understand the fundamentals of data models
- To make a study of SQL and relational database design.
- To know about data storage techniques an query processing.
- To impart knowledge in transaction processing, concurrency control techniques and External storage

Course Requirements:

- Knowledge about the basic concepts of the database.

Course Outcome:

By the end of this course, you should be able to:

- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Acquire the knowledge of query evaluation to monitor the performance of the DBMS.
- Develop a simple database application using normalization.

Unit 1 :

Data base System Applications, data base System VS file System – View of Data – Data Abstraction –Instances and Schemas – data Models – the ER Model - Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor.

\Unit 2

History of Data base Systems - Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.

Unit 3 :

Relational Model: Introduction– Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying / altering Tables and Views.

Unit 4 :

Relational Algebra – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews - Relational calculus – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.

Unit 5 :

Form of Basic SQL Query – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – joins- Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases. Schema refinement.

Unit 6 :
Normal forms:Problems Caused by redundancy – Decompositions – Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF.

Reference and text Books:

1. Colin Ritchie (2004), *Relational Database Principles*,3rdEdition, Cengage Learning Business Press.
2. ElmasriNavrate ,*Fundamentals of Database Systems*, Pearson Education.
3. Peter Rob & Carlos Coronel, *Data base Systems design, Implementation, and Management*, 7th Edition.
4. Raghurama Krishnan, Johannes Gehrke(2003), Data base Management Systems, 3rd Edition, TATA McGrawHill.
5. Silberschatz, Korth(2011), Data Base System Concepts, 6th Edition, Tata McGraw Hill.
6. Sharad Maheswari and RuchinJain(2006), *Database management systems Complete Practical Approach*, Firewall media.

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Semester	Course Code	Title of the Course	Credits	Hours
I	13	R PROGRAMMING	2	6

Course objectives

- This course aims to provide a knowledge about R programming language.
- Student will learn how to use R for effective data analysis.
- By the end of the day-long course, the user will be comfortable operating in the R environment, including importing external data, manipulating data for specific needs, and running summary statistics, machine learning algorithms and visualizations.
- This course helps participants to have a good understanding of the methods, methodologies and techniques from the basics of statistics to obtain supporting evidence through data

Course outcome

By the end of this course, you should be able to:

- Download and install R
- Navigate and optimise the R integrated development environment (IDE) R Studio
- Install and load add-in packages
- Import external data into R for data processing and statistical analysis
- Learn the main R data structures
- Compute basic summary statistics
- produce data visualizations

Unit 1

Introduction to R – History of R - Features of R - Essentials of the R language – R-Environment setup – Basic syntax: command prompt, script file, comments. Data types - Variables – assigning, finding, deleting variables- operators: operator types – arithmetic operator – logical operators -assignment operators – logical operators -expressions.

Unit 2

Control statements – Decision making- if – if-else – nested if - switch– loops – repeat- while – for – loop control statements - break – next statement. Functions: function definition - function components –built-in functions – user defined function - calling function - Recursion - Strings: Rules of strings - string manipulation

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Unit 3

Objects in R: Vectors – Vector creation – Vector Manipulation – Lists: Creating a list, naming, accessing, manipulating list elements- merge list -converting list to Vector – Arrays-Names columns and rows – Accessing array elements, manipulating array elements – operations of array elements.

Unit 4

Matrices – Accessing elements of Matrix – operations on matrix– Factors – Frames – Create data frames - getting the structure of data frame- Extract data from data frame. Packages – available R packages - install a new package – load package to library - Data reshaping – joining columns and rows in a data frame- merging dt frames – melting and casting

.

Unit 5

Working with files: CSV file – input CSV, read CSV, analyzing CSV, writing into CSV, Excel file: install, load, input, read excel files - Binary files: reading and writing – XML files: input and read XML files. mySQL package – connection R with mySQL – querying the table – table manipulation: create, insert, drop and update.

Unit 6

Visualizing: R charts and Graphs: R Pie charts: Pie chart title, color- slice percentages and chart legend – 3D Pie chart - Bar charts – Histograms – Line graphs – Scatter plots – creating scatterplot – scatterplot matrices.

Reference and text books:

1. Andrie de Vries, Joris Meys(2016), *R Programming for Dummies*, 2nd edition, Wiley.

2. Brett Lantz(2013), *Machine Learning with R*, Packt Publishing Ltd.
3. Mark Gardener(2013), *Beginning R The Statistical Programming Language*, Kindle edition.
4. Rajendra B. Patil,HirenDand& Rupali Dahake(2017), *A practical Approach to R*,Shroff/X-Team; First edition.
5. Scott Burger(2018), *Introduction to Machine Learning with R: Rigorous Mathematical Analysis*, Shroff/O'Reilly.
6. *UCI Machine Learning Repository* :http://archive.ics.uci.edu/ml/index.php

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Semester	Course Code	Title of the Course	Credits	Hours
I	14	R Programming LAB	2	60

Course objectives

- This course aims to provide a knowledge about practical R programming language.
- Student will learn how to use R for effective data analysis.
- By the end of the day-long course, the user will be comfortable operating in the R environment, including importing external data, manipulating data for specific needs, and running summary statistics, machine learning algorithms and visualizations.

Course outcome

By the end of this course, you should be able to:

- Download and install R
- Navigate and optimize the R integrated development environment (IDE) R Studio
- Install and load add-in packages
- Import external data into R for data processing and statistical analysis
- Learn the main R data structures
- Compute basic summary statistics and machine learning
- produce data visualizations

Experiments based on R Programming

- Simple R Programs
- Programs using conditional control statements
- Programs using functions and recursion.
- Problems based on Vectors, List, Arrays, Matrices, Factors and Frames.
- Experiments using packages.
- Problems using files and database.
- Experiments using charts and graphs.

- Experiments to perform statistics(mean, mode, median, normal distribution, binomial distribution) in R.
- Experiments for forecasting numeric data: Regression Methods.
- Experiments for data Visualizations.

Reference books:

7. Andrie de Vries, Joris Meys(2016), *R Programming for Dummies*, 2nd edition, Wiley.
8. Brett Lantz(2013), *Machine Learning with R*, Packt Publishing Ltd.
9. Mark Gardener(2013), *Beginning R The Statistical Programming Language*, Kindle edition.
10. Rajendra B. Patil,HirenDand& Rupali Dahake(2017), *A practical Approach to R*,Shroff/X-Team; First edition.
11. Scott Burger(2018), *Introduction to Machine Learning with R: Rigorous Mathematical Analysis*, Shroff/O'Reilly.
12. *UCI Machine Learning Repository* :http://archive.ics.uci.edu/ml/index.php

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SEMESTER II

Semester	Course Code	Title of the Course	Credits	Hours
II	**21**	**FUNDAMENTALS OF MACHINE LEARNING**	**2**	**6**

Course Objectives:

- To discover patterns in your data and then make predictions based on often complex patterns to answer business questions, detect and analyze trends and help solve problems.
- To introduce students to the state-of-the-art concepts and techniques of Machine Learning.

Course Outcome:

By the end of this course, you should be able to:

- Have a good understanding of the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc. ...
- Be able to design and implement various machine learning algorithms in a range of real-world applications.
- be capable of confidently applying common Machine Learning algorithms in practice and implementing their own.
- be capable of performing experiments in Machine Learning using real-world data.

Unit 1

Introduction: Basic definitions – Learning - Machine Learning vs AI - Machine Learning – features – samples – labels - Real-world applications and problems – hypothesis test - approaches of machine learning model - Data preprocessing.

Unit 2:

Representation of formal ML model: The statistical learning framework – training - testing – validation - cross validation - parametric and non parametric methods - Difference between Parametric and Non-Parametric Methods and examples.

Unit 3

Supervised learning Algorithms: Introduction – Approaches for classification – Decision Tree classification algorithm – Tree pruning - Rule based Classification –IF-THEN rules classification - Naïve Bayesian classification - Neural Network classification -Classification by Backpropagation algorithm. Support Vector Machines (SVM) - Lazy learners: k-Nearest Neighbor (k-NN) Algorithm – Case Based Reasoning (CBR) - Random Forest algorithm.

Unit 4

Unsupervised learning algorithms: Introduction– Defining Unsupervised learning – Cluster Analysis – Distance measures - Types of Clustering – Partition algorithms of clustering – Hierarchical clustering algorithms - Density based methods.

Unit 5

Reinforcement Learning and ELM: Introduction: Markov Decision process - Monte Carlo Prediction - case studies – Applications. Introduction to Extreme Learning Machine (ELM) - Software Tools: Introduction to Weka, Matlab, Rapidminer, tensorflow and keras –case studies.

Unit 6

Deep learning fundamentals: Introduction –Deep Belief Networks (DBN), A Restricted Boltzmann machine (RBM) - Recurrent Neural Networks (RNN) - Time series forecasting. Convolutional Neural Networks (CNN) - Auto-encoders: Auto-encoders and unsupervised learning - Regularization - Dropout and Batch normalization.

Reference and text Books.

1. Anuradha Srinivasaraghavan,Vincy Joseph (2019),*Machine Learning*, Wiley.
2. BalasKausikNatarajan(1991), "*Machine Learning: A Theoretical Approach*", Morgan Kaufmann
3. Dinesh Kumar U ManaranjanPradhan(2019), *Machine learning using Python*, Wiley.

4. EthamAlpaydin(2015), *Introduction to Machine Learning*, third edition, PHI Learning Pvt. Ltd.
5. Jiawei Han, Micheline Kamber, Jian Pei(2012), *Data mining concepts and techniques*, Morgan Kaufmann Publishers, Elsevier.
6. Lovelyn Rose S, Dr. L Ashok Kumar, Dr. D KarthikaRenuka(2019), *Deep Learning Using Python*,Wiley,
7. Rajiv Chopra(2018), *Deep Learning - A Practical Approach*, Khanna Books 2018.
8. Shai Shalev-Shwartz and Shai Ben-David(2014), *Understanding machine learning from theory to algorithms*,Cambridge university press.
9. UCI Machine Learning Repository :http://archive.ics.uci.edu/ml/index.php

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Semester	Course Code	Title of the Course	Credits	Hours
II	**22**	**PRINCIPLES OF SOFT COMPUTING**	**2**	**6**

Course Objective:

- To learn the key aspects of Soft computing.
- To know about the components and building block hypothesis of Genetic algorithm.
- To study the fuzzy logic components.

Course Outcome:

- Write Genetic Algorithm to solve the optimization problem
- Understand fuzzy concepts and develop a Fuzzy expert system to derive decisions.

Unit 1

Introduction: Soft Computing Constituents – Soft Computing Vs Hard Computing – Characteristics – Applications - Artificial Neural Network (ANN): Fundamental Concept – Application Scope - Basic Terminologies – Neural Network Architecture – Learning Process.

Unit 2

Perceptron Network – Adaline and Madaline Networks – Back Propagation Network - Radial Basis Function Network. Associative Memory Networks – BAM - Hopfield Network - Boltzmann Machine.

Unit 3

Unsupervised Learning Networks: Kohonen Self Organizing Network – Counter Propagation Network – ART Network.

Unit 4

Fuzzy Sets: Basic Concept – Crisp Set Vs Fuzzy Set - Operations on Fuzzy Set – Properties of Fuzzy Sets. Fuzzy Relations: Concept – Fuzzy Composition – Fuzzy Equivalence and Tolerance Relation. Membership Functions: Features – Fuzzification – Methods of Membership value assignments – Defuzzification – Methods

Unit 5

Fuzzy Arithmetic – Extension Principle – Fuzzy Measures - Fuzzy Rules and Fuzzy Reasoning: Fuzzy Propositions – Formation of Rules – Decomposition of Rules – Aggregation of Rules – Approximate Reasoning - Fuzzy Inference and Expert Systems – Fuzzy Decision Making – Fuzzy Logic Control Systems.

Unit 6

Genetic Algorithm: Fundamental Concept – Basic Terminologies – Traditional Vs Genetic Algorithm - Elements of GA - Encoding - Fitness Function - Genetic Operators– Classification of Genetic Algorithm – Applications of GA.

Reference and Text Books:

1. Goldberg David E.(2003), "*Genetic Algorithms*", Pearson Education.
2. Haykin Simon (1999) , "*Neural Networks*", Prentice Hall, 1993/Pearson Education.
3. JangJ.S.R., C.T. Sun, E. Mizutani(2004), "*Neuro-Fuzzy and Soft Computing*", Prentice Hall India.
4. Kumar Satish, "*Neural Networks: Classroom Approach*", Tata McGraw Hill.
5. Koza J. (1993), "*Genetic Programming*", MIT Press.
6. KecmanVojislav(2001), "*Learning and Soft Computing*", MIT Press.
7. Konar Amit (2008), "*Artificial Intelligence and Soft Computing – Behavioural and CognitiveModeling of the Human Brain*", Special Indian Edition, CRC Press.
8. Rajasekaran S (2004), G.A.V. Pai, "*Neural Networks, Fuzzy Logic, Genetic Algorithms*", Prentice Hall India, 2004.
9. Rajase, Kharan S. and VijayalakshmiPai S. A.(2003), "*Neural Networks, Fuzzy Logic & Genetic Algorithms",* Prentice-Hall of India
10. Sivanandam, "*Introduction to Neural Networks with MATLAB 6.0*", Tata McGraw Hill Publications.
11. Sivanandam S.N, S.N. Deepa (2007), "*Principles of Soft Computing*", Wiley India.
12. Yen John and Langari Reza (2003), "*Fuzzy Logic, Intelligence, Control, and Information*", Pearson Education.

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Semester	Course Code	Title of the Course	Credits	Hours
II	23	PYTHON PROGRAMMING	2	6

Course Objectives:

The learning objectives of this course are;

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to build and package Python modules for reusability.
- To learn how to read and write files in Python.

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Course Requirements:

- Before studying this course, the student has knowledge about basic principles of programming
- Experience with a high-level language (C/C++, Java, MATLAB) is suggested. Prior knowledge of a scripting language (Perl, UNIX/Linux shells) and Object-Oriented concepts is helpful but not mandatory.

Course Outcome:

After the completion of this course, the student will able to;

- To write programs using structures, strings, arrays, pointers and strings for solving complex computational problem.
- Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario
- Master Object-oriented programming to create an entire Python project using objects and classes
- Store and retrieve information using variables
- Develop cost-effective robust applications using the latest Python trends and technologies

Unit 1

Introduction – Overview of programming languages - History of Python – Installing Python – Executing Python programs – Comments - Python Character set – token core datatypes – printf()

function – Assigning value to variables – input() – eval() – formatting Number and strings – Inbuilt functions - Operators and Expressions.

Unit 2

Decision Statements: Introduction - if , if-else , nested if statements – multi-way if-elif statements. Loop Control Statements: Introduction – while loop – range() function – for loop = nested loops – break and continue statements.

Unit 3

Functions: Introduction – Syntax and basics of function – use of function – parameters and arguments in function – local and global variables – return statement. Strings: Introduction – The str class – built in functions for string – index[] operator - traversing string – immutable strings – string operators – string operations.

Unit 4

Lists : Introduction – creating lists – accessing the elements of a list – negative list indices – list slicing – built-in functions for list – list operator – list methods – passing list to a function – returning list from function.Introduction to tuples - creating – tuple() function – built-in functions for tuples - indexing -slicing – operators – list and tuples – sorting -traversing.

Unit 5

Introduction to tuples - creating – tuple() function – built-in functions for tuples - indexing -slicing – operators – list and tuples – sorting -traversing. Sets – creating – set in and not in operator – set classes - operations. Dictionaries: Introduction – creating, adding, replacing, retrieving values – formatting – deletion of items – comparing dictionaries – methods of dictionary class – nested dictionaries - traversing dictionaries

Unit 6

File Handling: Introduction – Need for file handling – Text input and output using file – seek() function. Introduction to Scientific computing with Scipy, Mathematical computing with Numpy, Scikit learn, Data visualization using Matplotlib, Data manipulation with pandas and sympy – Case studies.

Reference and text books:

1. Ashok NamdevKamthane(2018), Amit Ashok Kamthane, *Programming and Problem solving with Python*, Mc GrawHill Education.
2. Dinesh Kumar UManaranjanPradhan(2019), *Machine learning using Python*, Wiley
3. Manisha Bharambe(2019), *Python programming*, NiraliPrakashan.

4. Robert Sedgewick,Kevinwayne , Roberdondero(2016), *Introduction to Programming in Python: An Interdisciplinary Approach,* 1e , Pearson.
5. Wesley J. Chun(2009), "*Core Python Programming*", 2nd Edition, Prentice Hall.

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Semester	Course Code	Title of the Course	Credits	Hours
II	24	MACHINE LEARNING USING PYTHON LAB	2	60

Course Objectives:

The learning objectives of this course are:

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To learn how to use indexing and slicing to access data in Python programs.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to build and package Python modules for reusability.
- To learn how to read and write files in Python.
- To learn how to design object-oriented programs with Python classes.
- To learn how to use class inheritance in Python for reusability.

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Course Requirements:

- Before studying this course, the student has knowledge about basic principles of programming.
- Experience with a high-level language (C/C++, Java, MATLAB) is suggested. Prior knowledge of a scripting language (Perl, UNIX/Linux shells) and Object-Oriented concepts is helpful but not mandatory.

Course Outcome:

After the completion of this course, the student will able to;

- To write programs using structures, strings, arrays, pointers and strings for solving complex computational problem.
- Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario.
- Master Object-oriented programming to create an entire Python project using objects and classes.
- Store and retrieve information using variables.

- Develop cost-effective robust applications using the latest Python trends and technologies.
- Write program to solve real-world machine learning problems.

Lab Experiments based on Python programming and machine learning problems.

Simple Python programs.
Experiments using decision control statements.
Exercises using functions and recursion.
Exercises using arrays and strings.
Experiments using list processing.
Object oriented Programming Lab Problems using Python.
Experiments using Tuples, sets and dictionaries.
Programs using file handling.
Programs using graphics programming.
Experiments for data visualization using Matplotlib.
Scientific computing with Scipy.
Data manipulation with pandas and sympy.
Mathematical computing with Numpy.
Programs to perform Supervised learning algorithms (k-NN algorithm.)
Programs to perform Unsupervised learning algorithms (k-means clustering.).

Reference Books:

1. Ashok NamdevKamthane(2018), Amit Ashok Kamthane, *Programming and Problem solving with Python*, Mc GrawHill Education.
2. Dinesh Kumar UManaranjanPradhan(2019), *Machine learning using Python*, Wiley
3. Manisha Bharambe(2019), *Python programming*, NiraliPrakashan.
4. Robert Sedgewick,Kevinwayne , Roberdondero(2016), *Introduction to Programming in Python: An Interdisciplinary Approach,* 1e , Pearson.
5. Wesley J. Chun(2009), "*Core Python Programming*", 2nd Edition, Prentice Hall.

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MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

BACHELOR OF COMMERCE

Apprenticeship Embedded Degree Programme

(from Calendar Year 2023)

Submitted to
UGC, DISTANCE EDUCATION BUREAU (DEB)
New Delhi
For seeking approval to introduce new programme through ODL

Table of contents

MADHYA PRADESH BHOJ OPEN

UNIVERSITY, BHOPAL

BACHELOR OF COMMERCE

APPRENTICESHIP EMBEDDED DEGREE PROGRAMME

Credit Based Curriculum Evaluation System (CBCS)
(With effect from Calendar Year 2023 Onwards)

Preamble:

India is going to have the largest working age population in the world by 2030, but gainful employment for general stream students is a major challenge. Improving employability of these students requires a new vision with curriculum support for employment. Apprenticeship/ internships have a prominent role to play in linking higher education with the requirements of the industry and the world of work. This is considered to be one of the most effective ways to develop skilled manpower for the country. It provides for an industry led, practice oriented and outcome based learning. Striving to fulfill this objective of improving employability and forming robust industry-academia linkage, the UGC has framed Guidelines for Higher Education institutions to offer Apprenticeship/internships embedded Degree Programme. The UGC Guidelines will provide an option for Higher Educational institutions to embed Apprenticeship/ Internship in any UG degree programmes specified by UGC. This will focus on outcome-based learning in degree programme and will enable students to demonstrate workforce professional abilities for potential employment.

About the Programme:

B. Com Apprenticeship Embedded Degree program is a three-year undergraduate programme designed for learners to acquaint to the new age Commerce and trade and its applications. The programme's curriculum teaches both the theoretical and practical aspects of the study and aims to give the students a comprehensive understanding of establishing, financing and successfully managing the modern Business organizations. The administering of trade in the new age digital world would be the added learning in this programme and with tech adoption increasing phenomenally it would give a major shift to the career aspirations of the learner students.

This Programme is consistent with the National Employability Enhancement Mission (NEEM) regulations of AICTE and is a fine blend of academic learning and practical on the job learning opportunities for the students; a student trained through this model would be extremely confident aligned to the industry expectations and stands a huge opportunity to get noticed and hired with successful career development.

Programme's Mission and Objectives

1. Ready for employment in functional areas like accounting, taxation, banking, insurance and corporate law.
2. Develop attitude for working effectively and efficiently in a business environment with knowledge of various disciplines of commerce, business, accounting, economics, and finance, auditing and marketing
3. Able to use of Internet and other technology tools in the digital world concerning Commerce and Trade
4. Able to make career as budding managers suiting the digital business.
5. Equipped to adopt changes and emerging trends in e-Commerce.
6. Increased confidence towards venturing into start-ups with an attitude to emerge successful.
7. Able to integrate professional skills in their learning through hands on experience in the form of Apprenticeship/Internship, so as to enhance the scope of employment and entrepreneurship.

Programme Specific Outcome:

1. Relate skills to work as tax consultant, audit assistant and other financial supporting service roles.
2. Able to undertake learning exercises related to professional courses such as CA, M.COM, MBA, CMA, ICWA, CS, etc
3. Acquire knowledge and other soft skills, react aptly when confronted with critical decision making
4. Able to solve practical problems in the area of accounting

(a) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

This programme is aligned with HEI's and Madhya Pradesh Bhoj Open University mission and goals to be offered through distance mode to reach quality higher education to the unreachable and/or rural learners. Higher education in Computer Science offered through distance mode meets the mission of HEI's like digital India and e-cash transaction will enrich the Human resources for the uplift of the nation.

(b) Nature of prospective target group of learners

The prospective target group of learners for a Bachelor of Commerce Apprenticeship Embedded Degree Programme would typically be individuals who are interested in pursuing a career in business or commerce. This program is designed for students who want to combine theoretical knowledge with practical experience in the field of commerce.

The target group may include recent high school graduates, as well as individuals who have been working in the field for some time and wish to enhance their skills and qualifications. It may also include individuals who are currently employed in a related field and are looking to gain additional skills and knowledge to advance their career.

Additionally, the program may appeal to individuals who are interested in pursuing a career in accounting, finance, marketing, or management. It may also be suitable for individuals who are interested in entrepreneurship or starting their own business.

Overall, the prospective target group of learners for a Bachelor of Commerce Apprenticeship Embedded Degree Programme is diverse, and may include individuals from a variety of educational and professional backgrounds who are seeking to develop their skills and knowledge in the field of commerce.

(c) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

A Bachelor of Commerce Apprenticeship Embedded Degree Programme can be appropriate to be conducted in Open and Distance Learning (ODL) mode to acquire specific skills and competence. This is because ODL provides a flexible learning environment that allows students to study at their own pace and in their own time. It also allows students to access learning resources and materials from anywhere, as long as they have an internet connection.

In an apprenticeship embedded degree program, students gain practical work experience in addition to theoretical knowledge. This practical experience can be acquired through apprenticeships, internships, or on-the-job training. In an ODL mode, students can continue to work while studying, which can provide them with the opportunity to apply their new skills and knowledge in a real-world setting. This can also help to enhance their employability and career prospects.

Furthermore, an ODL mode can provide a cost-effective alternative to traditional classroom-based learning. It eliminates the need for students to travel to a physical campus, which can save them time and money. It can also be more accessible to learners who may be geographically or financially challenged.

However, it is important to note that an ODL mode may not be suitable for everyone. It requires self-motivation, self-discipline, and good time management skills. It also requires a reliable internet connection and access to appropriate technology. Therefore, it is essential that the program is designed and delivered in a way that ensures that learners receive the necessary support and guidance to succeed in their studies.

(d) Instructional Design

e.1 Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.
2. Each student should secure 132 credits to complete BA(AEDP) programme.

Programme code

BCOM(AEDP)

Course of Study and Scheme of Examinations

PROGRAMME STRUCTURE

FIRST YEAR

First Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C1	BCEC101	English	4	70	30	100
Core –C2	BCEC102	Human Resource Management	4	70	30	100
Core-C3	BCEC103	Financial Accounting I	4	70	30	100
AEC-1	BCEC104	Environment Science	2	70	30	100
SEC-1	BCEC105	Quantitative Techniques	2	70	30	100
Apprenticeship	BCEC106	Apprenticeship/Internship	6	-	-	100
	Total		**22**	**350**	**150**	**600**

Second Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C4	BCEC201	Optional Language/MIL	4	70	30	100
Core –C5	BCEC202	Marketing Management	4	70	30	100
Core-C6	BCEC203	Financial Accounting II	4	70	30	100
AEC-2	BCEC204	Communicative English	2	70	30	100
SEC-2	BCEC205	Enterprise Resource Planning	2	70	30	100
Apprenticeship	BCEC206	Apprenticeship/Internship	6	-	-	100
		Total	**22**	**350**	**150**	**600**

SECOND YEAR

Third Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core-C7	BCEC301	Cost Accounting	4	70	30	100
Core –C8	BCEC302	Banking and Financial Institutions	4	70	30	100
SEC-3	BCEC303	Business Law	2	70	30	100
GE-1	BCEC304	Organizational Dynamics	4	70	30	100
Apprenticeship	BCEC305	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**240**	**160**	**500**

Fourth Semester

Course	Course Code	Title of the Paper	Credits	Total Marks		
				UE	IA	Total
Core-C9	BCEC401	Corporate Accounting	4	70	30	100
Core- C10	BCEC402	Financial Management	4	70	30	100
SEC-4	BCEC403	E- Commerce	2	70	30	100
GE-2	BCEC404	Business Ethics and Negotiation skills	4	70	30	100
Apprenticeship	BCEC405	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**280**	**120**	**500**

THIRD YEAR
Fifth Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core- C11	BCEC501	Income tax	4	70	30	100
DSC-A-1	BCEC502	**1.**(Accounting)- Advanced cost and management accounting **2.**(Finance) – Corporate Finance **3**.(Audit &Taxation)- Corporate Tax Planning	4	70	30	100
DSC-A-2	BCEC503	1.(Accounting) Advanced Financial Accounting 2.(Finance)- Security Analysis & Portfolio management 3.(Audit & Taxation)- Principles of Audit	4	70	30	100
APP-1	BCEC504	Apprenticeship/Internship project	6	-	-	100
Apprenticeship	BCEC505	Apprenticeship/Internship	6	-	-	100
		Total	**24**	**280**	**120**	**500**

Sixth Semester

Course	Course Code	Title of the Paper	Credits	Total Marks		
				UE	IA	Total
Core-C12	BCEC601	Management Accounting	4	70	30	100
DSC-B-1	BCEC602	1 (Accounting)- International Financial Reporting Standards 2.(Finance) – Financial Analysis and Planning 3.(Audit &Taxation)- GST & Customs planning	4	70	30	100
DSC-B-2	BCEC603	1. (Accounting)- MIS/Computerized Accounting 2.(Finance) – International Finance 3.(Audit &Taxation)- Advanced Auditing	4	70	30	100
APP-2	BCEC604	Apprenticeship/Internship Project	6	-	--	100
Apprenticeship	BCEC605	Apprenticeship/Internship	6			100
		Total	**24**	**210**	**90**	**500**

TOTAL CREDITS: 132

e.2 Detailed Syllabi - The detailed Syllabi shown in Appendix**.**

Evaluation Scheme

Evaluation is an essential component during the learning progression of diverse courses in the programme. Performance assessment of the student is based on the twin components, namely, (i) on the job performance as part of apprentice ship and (ii) learning components assessed through the theory oriented courses as per criteria laid down..Both formative (Internal Assessment) and summative assessments (Semester End Examination) are devised to arrive at the overall assessment of outcomes.

The allocation of weightages and marks for Internal Assessment and SEE are as follows:

Internal Assessment Components:

Internal Assessment in each course will carry a weightage of 30 marks

- There will be 3 Internal assessments per course and of these three, the best two performances would be considered for calculation of Internal Marks.
- All Internal Assessments will be conducted through online mode using Learning Management

System (LMS – E learning platform used by the university) as per the following schedule.

Internal Assessment Schedule

No. of modules in the course	Internal Assessment 1	Internal Assessment 2	Internal Assessment 3
4- module course	After completion of Module 1	After completion of Module 2	After completion of Module 4
5- module course	After completion of Module 1	After completion of Module 3	After completion of Module 5
6- module course	After completion of Module 2	After completion of Module 4	After completion of Module 6

Each Internal Assessment carries 15 marks in a course and the best 2 of 3 will be considered while computing the Final Internal Assessment marks. Students must score minimum 12 marksto become eligible for the term end/semester end examination.
All Internal Assessment will be conducted online and the questions will be of Objective type (most of the times MCQs). Evaluation of Internal Assessment is automated and no manual intervention is involved in evaluation. Only one attempt is allowed for every student for each Internal Assessment, no reattempt is allowed for Internal Assessments.

Term End Exams – 70 marks

This is an online or pen paper evaluation exam with a non-interactive session of specified time period to evaluate comprehension of theoretical concepts, ability to apply concepts and integration of the subject knowledge in different areas. The exam shall have a weightage of 70 Marks.
Term End Examination is divided into 3 parts
Part A – 30 marks – Consists of 30 MCQs each question carrying 1 mark -
Part B - 20 marks - Consists of 4 descriptive questions each carrying 5 marks
Part C - 20 marks - Consists of 4 application-based questions each carrying 5 marks
A student in order to successfully pass in a course should score minimum of 40 marks in aggregateand witha minimum of 28 marks from semester end examination and a minimum of 12 marks from Internal Assessments. Students falling short of above criteria would need to take repeat examination until they fulfill this condition

Assessment Weightage:

Note: Apprenticeship /Internship hours per semester of 360 hours is mandatory to complete the Programme.

Submission of Apprenticeship/internship duration report by the learner duly endorsed by the official reporting head/Supervisor at work place is obligatory for declaration of semester results. Else it would be withheld.
In case of not fulfilling this mandating in any semester, the student has to repeat the Apprenticeship/Internship work hours for the stipulated period to qualify for obtaining the degree certificate. The student would be permitted to carry forward to one additional semester to make good the gaps if any in the Apprenticeship/Internship work hours.

Student will be declared as successfully completed the particular semester if he scores the minimum criteria in Internal Examination, term end examination in all courses as well as in the Apprenticeship/Internship.
Student will be declared successfully completed the programme if he/she successfully clears all the semesters without any back log.

Assessment of Apprenticeship:

Assessment components	Details
Attendance Report / Daily Report (20%)	• Attendance certified by employer • Daily report bycandidate *Google Form with following fields:* *1. Date* *2. Time In (Dropdown)* *3. Time Out (Dropdown)* 4. *Daily On-Job Activities/ learning content*
Presentation and viva-voce/demonstration test (15%)	Presentation at the end of semester and viva voce/ demonstration testof the skills relevant to job role semester
Report (30%)	Submission of Apprenticeship report containing learning contents/ methods/ procedures
Learner Feedback Report (15%)	To be submitted at the mid and the end of each semester as assessed by industry mentor
Performance Feedback Report (20%)	To be submitted at the mid and the end of each semester as assessed by industry mentor To be submitted at the mid and the end of each semester as assessed by industry mentor

e.3 Duration of the Programme:

Three year (Six Semesters).

e.3.1 Medium of Instruction

The medium of instruction is only in **English**.
The course material is also in **English.**

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	3
Clerical Assistant	1

*Faculty at least in Assistant Professor level

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e-book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and Virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

(e) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the BCom(AEDP) shall be required to have passed the following examinations.

Candidates seeking admission to the certificate programme shall be required to have passed H.Sc or (10+2/10+3) of any Recognized institution or authority accepted by the Board of Management of the Madhya Pradesh Bhoj Open University as equivalent thereto shall be eligible.

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**Face to face contact session per semester(in Hours)**
Theory courses (3 Courses – 6 Hrs/course)	18
Practical course(1 Course – 60 Hrs/course	60
Total	**78**

f.3 Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The end semester examination for theory and practicalis maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through class test, home assignment with workbook, case studies, review questions, quiz, multiple choice questions for 25 marks.

Division of Internal Marks (Assignment)

Theory	
Assignment	**Marks**
Class Test, Long and short answer questions, Workbook, case studies,quiz, Multiple Choice Questions(MCQ)	25
TOTAL	**25**

Assessment of Apprenticeship:

Assessment components	Details
Attendance Report / Daily Report (20%)	• Attendance certified by employer • Daily report by candidate *Google Form with following fields:* *1. Date* *2. Time In (Dropdown)* *3. Time Out (Dropdown)* 4. *Daily On-Job Activities/ learning content*
Presentation and viva-voce/demonstration test (15%)	Presentation at the end of semester and viva voce/ demonstration testof the skills relevant to job role semester
Report (30%)	Submission of Apprenticeship report containing learning contents/ methods/ procedures
Learner Feedback Report (15%)	To be submitted at the mid and the end of each semester as assessed by industry mentor
Performance Feedback Report (20%)	To be submitted at the mid and the end of each semester as assessed by industry mentor To be submitted at the mid and the end of each semester as assessed by industry mentor

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

f.3.1 Minimum for a pass:

To pass in each course, a candidate is required to secure 40% marks in the End Semester examination and 40% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who does not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the units Should be covered in each Part

Part – A (10 x 2 Marks: 20 Marks) Answer all questions
Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)
Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.

Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the B.Com.(AEDP) only if he/she passes all the (including arrears) courses with in a period of Five years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate.

Range of Marks	Grade Points	Letter Grade	Description
96-100	10.00	S+	First class – Exemplary
91-95	9.5	S	
86-90	9.0	D++	First class – Distinction
81-85	8.5	D+	
76-80	8.0	D	
71-75	7.5	A++	First Class
66-70	7.0	A+	
61-65	6.5	A	

56-60	6.0	B	Second Class
50-55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_iG_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses
Sum of the credit of the courses in the semester
= Sum of [Credit earned x Grade Points]
Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n\sum_i C_{ni}G_{ni} / \sum_n\sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme
Sum of the credits of the courses for the entire programme

Where

C_i - Credits earned for the course i in any semester G_i – Grade Point earned for course i in any semester

n - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1–9.5	S	
8.6–9.0	D++	First class with Distinction*
8.1–8.5	D+	
7.6–8.0	D	
7.1–7.5	A++	First Class
6.6–7.0	A+	
6.1–6.5	A	
5.6–6.0	B+	Second Class
5.0– 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Rs.
Admission Processing Fees	300
Course Fees	5,000
Total Fees	**5,300**

The above mentioned fees structure is exclusive of examination fees.

(f) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

g.2 Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-

book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(g) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment)	10,00,000/-
Programme delivery (per year)	24,00,000/-
Programme maintenance (per year)	5,00,000/-

(h) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(i) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

(ii) Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from

the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Expected Programme Outcomes:

The Bachelor of Commerce Apprenticeship Embedded Degree Programme is a program designed to provide students with a combination of theoretical knowledge and practical skills required to succeed in the business world. The expected program outcomes of this degree program include:

- Knowledge and Understanding: Graduates will have a comprehensive understanding of core business concepts and principles, including accounting, economics, finance, marketing, management, and operations.
- Professional Skills: Graduates will have developed practical skills such as problem-solving, decision-making, communication, teamwork, and leadership that are critical for success in the workplace.
- Industry Experience: Graduates will have completed an apprenticeship program with a business organization, giving them hands-on experience and exposure to real-world business practices and challenges.
- Ethical and Social Responsibility: Graduates will have an understanding of the importance of ethical behavior and social responsibility in business, including issues related to sustainability and corporate social responsibility.
- Entrepreneurial Mindset: Graduates will have an entrepreneurial mindset and the ability to identify and seize opportunities in the business world.
- Global Awareness: Graduates will have an appreciation of the global nature of business and the ability to operate effectively in a diverse and multicultural environment.

Overall, graduates of the Bachelor of Commerce Apprenticeship Embedded Degree Programme will be well-equipped to pursue careers in various areas of business or to start their own businesses with a strong foundation in both theoretical knowledge and practical experience.

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Appendix – Detailed Syllabi

FIRST YEAR

First Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C1	BCEC101	English	4	70	30	100
Core –C2	BCEC102	Human Resource Management	4	70	30	100
Core-C3	BCEC103	Financial Accounting I	4	70	30	100
AEC-1	BCEC104	Environment Science	2	70	30	100
SEC-1	BCEC105	Quantitative Techniques	2	70	30	100
Apprenticeship	BCEC106	Apprenticeship/Internship	6	-	-	100
	Total		**22**	**350**	**150**	**600**

Second Semester

Course	Course code	Title of the Course	Credits	Total Marks		
				UE	IA	Total
Core-C4	BCEC201	Optional Language/MIL	4	70	30	100
Core –C5	BCEC202	Marketing Management	4	70	30	100
Core-C6	BCEC203	Financial Accounting II	4	70	30	100
AEC-2	BCEC204	Communicative English	2	70	30	100
SEC-2	BCEC205	Enterprise Resource Planning	2	70	30	100
Apprenticeship	BCEC206	Apprenticeship/Internship	6	-	-	100
		Total	**22**	**350**	**150**	**600**

SECOND YEAR

Third Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core-C7	BCEC301	Cost Accounting	4	70	30	100
Core –C8	BCEC302	Banking and Financial Institutions	4	70	30	100
SEC-3	BCEC303	Business Law	2	70	30	100
GE-1	BCEC304	Organizational Dynamics	4	70	30	100
Apprenticeship	BCEC305	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**240**	**160**	**500**

Fourth Semester

Course	Course	Title of the Paper	Credits	Total Marks

	Code			UE	IA	Total
Core-C9	BCEC401	Corporate Accounting	4	70	30	100
Core- C10	BCEC402	Financial Management	4	70	30	100
SEC-4	BCEC403	E- Commerce	2	70	30	100
GE-2	BCEC404	Business Ethics and Negotiation skills	4	70	30	100
Apprenticeship	BCEC405	Apprenticeship/Internship	6	-	-	100
		Total	**20**	**280**	**120**	**500**

THIRD YEAR
Fifth Semester

Course	Course Code	Title of the Course	Credits	Marks		
				UE	IA	Total
Core- C11	BCEC501	Income tax	4	70	30	100
DSC-A-1	BCEC502	**1.**(Accounting)- Advanced cost and management accounting **2.**(Finance) – Corporate Finance **3**.(Audit &Taxation)- Corporate Tax Planning	4	70	30	100
DSC-A-2	BCEC503	1.(Accounting) Advanced Financial Accounting 2.(Finance)- Security Analysis & Portfolio management 3.(Audit & Taxation)- Principles of Audit	4	70	30	100
APP-1	BCEC504	Apprenticeship/Internship project	6	-	-	100
Apprenticeship	BCEC505	Apprenticeship/Internship	6	-	-	100
		Total	**24**	**280**	**120**	**500**

Sixth Semester

Course	Course Code	Title of the Paper	Credits	Total Marks		
				UE	IA	Total
Core-C12	BCEC601	Management Accounting	4	70	30	100

DSC-B-1	BCEC602	1 (Accounting)- International Financial Reporting Standards 2.(Finance) – Financial Analysis and Planning 3.(Audit &Taxation)- GST & Customs planning	4	70	30	100
DSC-B-2	BCEC603	1. (Accounting)- MIS/Computerized Accounting 2.(Finance) – International Finance 3.(Audit &Taxation)- Advanced Auditing	4	70	30	100
APP-2	BCEC604	Apprenticeship/Internship Project	6	-	--	100
Apprenticeship	BCEC605	Apprenticeship/Internship	6			100
		Total	**24**	**210**	**90**	**500**

TOTAL CREDITS: 132

Syllabus
SEMESTER I
GENERAL ENGLISH

Credits: 4 **Hours: 60**

Course objective:

1. To Use correct English in oral as well as written form. Inculcate the human values for one's transformation of behaviour.
2. To Interpret the literary works by critical analysis.
3. To Compare literary works of the great writers and philosophers by using their logic and literary competency
4. To Nurture themselves in soft skills and develop positive aptitude.
5. To demonstrate knowledge of the major texts and traditions of literature written in English in their social, cultural and historical context
6. To analyze the functions of texts and their relations with historical, social and political contexts

Prose:

1. Plausibility in Fiction – Somerset Maugham
2. The Long Exile – Leo Tolstoy

3. Three days to see – Helen Keller
4. The Disrupted Coronation – Sreedevi K B
5. A Dollar – Play by David Pinski

Poetry

1. A dog has died – Pablo Neruda
2. An Ode to the grasshopper – Pedro Pietri
3. To Autumn – John Keats
4. The Patriot – NissimEzeikel
5. The Mad – K Satchidanandan

Reference book:

- Prof. David Raiches – A critical history of English literature – Volume I and II
- Ruskin Bond – Collected short stories
- The Essential Writings and Essays (2000) (Modern Library Classics), by Ralph Waldo Emerson
- Pride and Prejudice – Jane Austen Society of North

SEMESTER I
HUMAN RESOURCE MANAGEMENT

Credits: 4 **Hours: 60**

Course objective:

To help the students acquire conceptual knowledge of the fundamentals of human resources management and the practice of the same in the changing business world.

Module - 1

Introduction to Human Resource Management **8 Hours**

Meaning of HRM - Importance of HRM - Objectives and functions - Process of HRM - Duties and responsibilities of human resource manager

Module - 2

Human Resource Planning, Recruitment, Selection, Placement& Training& Induction 18 Hours

Meaning and importance of human resource planning - Steps in human resource planning - Meaning of recruitment, selection &placement – Methods of Recruitment and selection, Selection Procedure – Uses of tests in selection, types of tests, types of Interview (brief explanation only), problems involved in placement, - Meaning of Training and Induction - Objectives of induction - Need and Benefits for training - Methods of training.

Module – 3

Performance Appraisal & Compensation **14 Hours**

Meaning of performance appraisal - Objectives of performance appraisal - Methods of performance appraisal and limitations - Principles and techniques of wage fixation - Job Evaluation – Meaning, objectives and principles - Compensation – meaning of compensation, objectives of compensation

Module – 4

Promotions, Transfers & Demotions **8 Hours**Meaning and Definition of Promotion - Purpose of promotion - Basis of promotion - Meaning of transfer - Reasons for transfer - Types of transfer - Demotion- Meaning and reasons for demotions

Module – 5

Work Environment and Recent Trends in HRM **12 Hours**

Meaning of work environment - Fatigue, Monotony and boredom (Meaning Only) - Industrial accidents – definition and causes - Industrial injuries – meaning only - Employee safety - Grievance and grievance handling – Meaning, and need for grievance handling - Recent trends in HRM - Employer Branding, HR Audit, HR Matrix Management, E-HRM, Competency Mapping, Right sizing, moonlighting by employees (Meaning Only along with cases) - External Reports: Clause 49 and 55, SHE – Safety, Health and Environment

Books for Reference

1. C.B. Mamoria and S V Gankar, HRM, Himalaya Publishing House, Edition 2011
2. P SubbaRao, Human Resources Management, Himalaya Publishing House, 3rd Revised and enlarged Edition
3. Appannaiah, Reddy and AparnaRao , HRM , Himalaya Publishers, 1st edition 2005
4. VSP Rao , HRM , Excel Books , Second Edition (2005)
5. Gary Devler , HRM , Prantice Hall India , 7th edition

SEMESTER I

FINANCIAL ACCOUNTING – I

Credits: 4 **Hours: 60**

Objectives:

To acquaint students with the accounting concepts, tools and techniques influencing Business Organizations.

Module - 1 **8 Hours**

Introduction to Accounting and Overview of Accounting Standards in India

- Introduction, Meaning, Definition, Objectives,
- Functions, Users of Accounting, various Accounting terms,
- Rules and Accounting equations, (simple Problems)
- Simple Journal Entries and Ledgers
- Accounting Concepts and Conventions,
- Need for Accounting Standards
- Difference between IAS and IFRS
- An Overview of Indian Accounting Standards
- List of International Accounting Standards

Module - 2: Dissolution of Partnership **10Hours**

- Modes of Dissolution
- Settlement of Accounts
- Difference between Dissolution of Partnership & Dissolution of Firm
- Accounting Treatment- Problems
- Insolvency Loss
- Garner v/s Murray – Capital Ratio calculation
- Insolvency of all Partners - Problems

Module – 3: Conversion of Partnership **16 Hours**

- Introduction
- Limited liability Partnership – Meaning
- Need for conversion

- Meaning of Purchase Consideration
- Mode of Discharge of Purchase Consideration
- Method of calculation of Purchase Consideration
    * Net Payment Method
    * Net Asset Method
    * Lumpsum Method
- Passing of Journal Entries and Preparation of Ledger Accounts in the books of Vendor
- Treatment of certain items – Dissolution Expenses – Unrecorded Assets and Liabilities– Assets and Liabilities not taken over by the Purchasing Company - Contingent liabilities – non assumption of trade liabilities
- Passing of Incorporation entries
- Treatment of Security Premium
- Fresh issue of shares and debentures to meet working capital
- Preparation of Balance Sheet

Module – 4: Hire-Purchase and Installment System 14 Hours

- Introduction
- Meaning
- Hire Purchase Act 1972
- Difference between Hire Purchase and Installment Purchase system
- Important Definitions – Hire Purchase Agreement- Hire Purchase Price – Cash Price, Hire Purchase Charges, Net Hire Purchase Price –Net Cash Price
- Calculation of interest when both the cash price and the rate of interest are given
- Calculation of interest when cash price is given but rate of interest is not given
- Calculation of interest when both the cash price and the rate of interest are not given
- Calculation of cash price -Annuity Method
- Calculation of amount of installment
- Journal entries and Ledger accounts in the books of Hire Purchaser and Hire vendor under Asset Accrual method.
- Treatment of Interest Suspense Account
- Journal entries and Ledger account in the books of both parties.

Module – 5: Royalties 12 Hours

- Introduction, Meaning, Technical Terms – Royalty – Landlord – Tenant – Minimum Rent –Short workings – Recoupment of Short working under Fixed Period & Floating Period
- Recoupment within the Life of a Lease, Treatment of Strike and Stoppage of work
- Accounting Treatment – In the books of Lessee (Tenant) – when royalty is less than Minimum Rent – When royalty is equal to Minimum Rent, when royalty is more than minimum rent – When the right of recoupment is lost, when Minimum Rent Account Method is followed
- Preparation of ledger accounts – Royalty Account, Landlord Account – Short workings Account - Minimum Rent Account when Minimum Rent Account is followed.

Books for Reference

1. Dr. S.N. Maheswari , Financial Accounting, VIkas Publishers
2. B.S Raman, Financial Accounting – United Publishers

3. Grewal and Gupta, Advanced Accounting – S Chand
4. Radhaswamy and R.L. Gupta, Advanced Accounting – Sultan Chand & Sons – 2010 1st Edition and 2011 2nd Edition
5. S.Kr. Paul, Advanced Accounting – New Central Book Agency
6. Dr.S.M.Shukla and Dr.S.P. Gupta – S Chand & Co. Ltd.
7. P.C. Tulasian, Pearson Editions, Introduction to Accounting – Pearson Education – 2012
8. Jain &Narang, Financial Accounting – Kalyani Publishers

SEMESTER I

ENVIRONMENTALSTUDIES

Credits: 4 **Hours: 30**

Course Objective:

1. To create and disseminate knowledge to the students about environmental problems at local, regional and global scale.
2. To sensitize students towards environmental concerns, issues, and impacts of climate change and related mitigation strategies.
3. To make the students to apply their knowledge for efficient environmental decision-making, management and sustainable development.

Module1: **(2hrs)**

TheMultidisciplinaryNatureofEnvironmentalStudies

Definition, scope and importance.Needforpublicawareness.

Module2: **(8hrs)**

NaturalResources

i. Renewable and Non-Renewable ResourcesNaturalresourcesandassociatedproblems
ii. Forestresources:Useandover-exploitation,de-forestation,casestudies.Timberextraction,mining, dams and their effects on forests andtribal people.
iii. Waterresources:Useandover-utilizationofsurfaceandgroundwater,floods,drought,conflictsoverwater, dams-benefits and problems.
iv. Mineral Resources:Useandexploitation, environmental effectsofextracting and usingmineralresources, casestudies.
v. Foodresources:Worldfoodproblems,changescausedbyagricultureandovergrazing,effectsofmodernagriculture,fertilizer-pesticideproblems,waterlogging,salinity,casestudies.
vi. Energy resources: Growing energy needs, renewable and non-renewable energy sources, useofalternateenergysources. Casestudies.

vii. Land resources: Land as a resource, land degradation, man induced landslides, soil erosionanddesertification.

viii. Roleofanindividualinconservationofnaturalresources.Equitableuseof resources forsustainablelifestyles.

Module3: (6 hrs)

Ecosystems

i. Concep tofanecosystem.
ii. Structure and function of an ecosystem
iii. Producers, consumers and decomposersEnergy flow in the ecosystem
iv. Ecologicalsuccession
v. Foodchains,foodwebsandecologicalpyramids
vi. Introduction,types,characteristicfeatures,structureandfunctionofthefollowingecosystem:

Forestecosystem, Grassland ecosystem,Desertecosystem, Aquaticecosystems(ponds,streams,lakes,rivers, oceans,estuaries)

Module4: (8 hrs)

Biodiversityanditsconversation

i. Introduction– Definition:Genetic,speciesandecosystemdiversity.Biogeographicalclassification ofIndia
ii. Valueofbiodiversity:Consumptiveuse,productiveuse,social,ethical,aestheticandoptionvalues
iii. Biodiversity at global, National and local levelsIndia as amega-diversitynation
iv. Hot-spotsof biodiversity
v. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.Endangeredandendemicspeciesof India.
vi. Conservationofbiodiversity:In-situandEx-situconservationofbiodiversity.

Module5:EnvironmentalPollution (6 hrs)

Definition

Causes,effectsandcontrolmeasuresof:

i. Air pollutionWaterPollutionSoil pollution, Nuclearhazards
ii. Solidwastemanagement:Causes,effectsandcontrolmeasuresofurbanandindustrial wastes.
iii. Role of an individual in prevention of pollution.Pollutioncasestudies.
iv. Disastermanagement:Floods,earthquake,cycloneandlandslides.

Books for Reference:

- MadhavGadgil and RamachandraGuha (1992)-This Fissured Land: An Ecological History of India (ISBN 978-0-19-807744-2)
- Daniel R. Headrick (2020) - Humans Versus Nature: A Global Environmental History – Oxford UP (ISBN 978-0-19-0864729)
- Tewari D. N. (2020) - Sustainability Crisis - PrabhatPrakashan (ISBN 9788184300734)

SEMESTER I
QUANTITATIVE TECHNIQUES

Credits: 4 **Hours: 30**

Course Objective:

To enable students, acquaint with statistical and mathematical tools to apply in business models.

Module 1 - Mathematics of Finance:(8hrs)

Concepts of Interest- Simple and Compound Interest, Annuities – Future value of Annuity, Present value of Annuity – Sinking fund, Application problems of Finance in Business.

Module 2 –Descriptive Statistics and Measures of central Tendency: (14 hrs)

Meaning &Definition of Statistics ,Objectives and Limitations, Application, Collection of data-Sources of information(Data) ,Method of Data Collection, Formation of tables ,Classification of data, Frequency Distribution –Inclusive ,Exclusive, Open-End. Diagrammatic and Graphic representations-Difference between Diagrams and Graphs, Types of Diagrams-One dimensional diagrams-Types of Bar diagrams, Pie Charts, Graphs on frequency Distribution Histogram, Frequency Polygon, Frequency Curve, Ogives. Introduction, Definition, Types of Averages, Arithmetic Mean –Methods of solving Arithmetic Mean – Direct Method, Assumed Mean Method

Module 3 - Linear Programming Problem: (8 hrs)

Introduction, Formulation of LPP- Decision variables- Constraints- Concept of Optimization- Maximization - Minimisation, Non-negative function, Graphical method to solve LPP, Application problems on LPP.

Reference books:

1. Business mathematics by G K Ranganath, Himalaya Publications, 3rd edition
2. Business mathematics by DigambarPatri, Kalyani Publications, 2nd edition
3. Business mathematics by Dorai Raj, United publishers, 6th edition
4. Business mathematics by C M Chikkodi and B G Satya Prasad, Mumbai Himalayan, Publishing House 2008, 2nd edition
5. Statistical Methods by S.P Gupta, sultan chand and sons, 26th Edition
6. Fundamental of Statistics by S.C Gupta, Himalaya Publications, 10th edition
7. Fundamental of Statistics by Elhance D N, KitabMahal, Wholesale Division, 5th edition
8. Business Statistics by D R Agarwal, Vrinda Publications Pvt Ltd

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT (PPR)

MASTER OF COMPUTER APPLICATIONS (M.C.A)

submitted to

UGC, Distance Education Bureau (DEB),

New Delhi

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MADHYA PRADESH BHOJ OPEN UNIVERSITY, BHOPAL (MPBOU)

MASTER OF COMPUTER APPLICATIONS (M.C.A)

Credit Based Curriculum System (CBCS)
(Academic Year 2023 -2024 Onwards)

(a) Programme Mission and Objectives Mission

Mission is to offer excellent career opportunities in various industries including Corporate sector, government organizations, academia and software development companies in the areas of System analysis/design/developments/supports, mobile application programming, game programming, web and e- commerce development, database administration, software testing, education and training etc.

The Programme thrust is on giving the students a thorough and sound background in theoretical and skill-oriented courses relevant to the latest computer software application development.

Programme Objectives:

- ✓ Discover, investigate the requirements of a problem and find the solution to them using computing principles.
- ✓ Create and evaluate a computer-based system, components and process to meet the specific needs of applications.
- ✓ Utilize current techniques and tools necessary for complex computing practices.
- ✓ Develop and integrate effectively system-based components into user environment.
- ✓ Identify the need and develop the skill to employ in learning as a computing professional in IT and ITES.
- ✓ Execute effectively in a team environment to achieve a common goal.
- ✓ Classify opportunities and use innovative ideas to create value and wealth for the betterment of the individual and society.
- ✓ Proficiency in developing application with required domain knowledge.
- ✓ To facilitate learners to nurture skills to practice their professions competently to meet the ever-changing needs of society such as Digital India, Safety and Privacy.

(b) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

This programme is aligned with HEI's and Madhya Pradesh Bhoj Open University mission and goals to be offered through distance mode to reach quality higher education to the unreachable and/or rural learners. Higher education in Computer Science offered through distance mode meets the mission of HEI's like digital India and e-cash transaction will enrich the Human resources for the uplift of the nation.

(c) Nature of prospective target group of learners

The nature of prospective target group of learners is graduates from various disciplines like Commerce, Mathematics, Physics, Chemistry, Biology, Electronics, and Engineering etc. It also includes the learners who want to become entrepreneurs (self-engagement) like Web Designers, Software Developers, BPO's, KPO' and Network managers/administrators. After MCA the learner

can opt for higher studies like M.Tech. and Ph.D. Learners interested in Joining IT firms Software, Digital Marketing, System analyst and Web Developments.

(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

Master of Computer applications (M.C.A) Programme through Distance Learning mode has been designed to impart advanced knowledge in various areas of computer applications including i) Knowledge about various kinds of programming languages ii) Digital Logic fundamentals, Operating systems, RDBMS, Data Structure and Software Engineering iii) inter-disciplinary knowledge like Discrete Mathematics and Accounting and Financial Management iv) Concepts like Artificial Intelligence, Soft computing, Big data analytics, R Programming and Internet of Things. v) Cutting Edge Technologies like Mobile application development and .Net Framework.

Besides imparting theoretical knowledge, a lot of stress is laid on hands-on training, practical, project work and overall development of the personality.

The University provides various opportunities to the learners, basically to the poor and rural people to get a high-quality education in the field of Computer Applications, which can fulfill the demand of the society.

(e) Instructional Design

Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.

2. Each student should secure 90 credits to complete Master of Computer applications(M.C.A.) programme.

3. Each theory course carries 4 credits, practical course carries 4 credits and project work carry 10 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

M.C.A Programme code: MCA06

Courses of Study M.C.A

S.No	Course Code	Title of the Course	CIA Marks Max	ESE Marks Max	TOT Marks Max	C Max.	Hrs
FIRST YEAR							
I Semester							
1	31511	Digital Computer Organization	25	75	100	4	12
2	31512	Object Oriented Programming and C++	25	75	100	4	12
3	31513	Data Structure and Algorithms	25	75	100	4	12
4	31514	Discrete Mathematics	25	75	100	4	12
5	31515	Data Structures using C++ Lab	25	75	100	4	120

		Total	**125**	**375**	**500**	**20**	**168**
		II Semester					
6	31521	Accounting and Financial Management	25	75	100	4	12
7	31522	Relational Database Management Systems (RDBMS)	25	75	100	4	12
8	31523	Computer Graphics	25	75	100	4	12
9	31524	Visual Programming with ●NET	25	75	100	4	12
10	31525	VB.NET and RDBMS Lab	25	75	100	4	120
		Total	**125**	**375**	**500**	**20**	**168**
		SECOND YEAR					
		III Semester					
11	31531	Software Engineering	25	75	100	4	12
12	31532	Operating System	25	75	100	4	12
13	31533	Internet and Java Programming	25	75	100	4	12
14	31534	Computer Networks	25	75	100	4	12
15	31535	Data Mining and Warehousing	25	75	100	4	12
16	31536	Internet and Java Programming Lab	25	75	100	4	120
		Total	**150**	**450**	**600**	**24**	**180**
		IV Semester					
17	31541	Internet of Things (IoT)	25	75	100	4	12
18	31542	Artificial Intelligence and Soft Computing	25	75	100	4	12
19	31543	Big Data Analytics and R Programming	25	75	100	4	12
20	31544	Mobile Application Development	25	75	100	4	12
21	31545	Project Work	25	75	100	10	-
		Total	**125**	**375**	**500**	**26**	**48**
		Grand Total	**525**	**1575**	**2100**	**90**	

CIA : Continuous Internal Assessment **ESE :** End semester Examination **Max**. Maximum Marks; **C :** Credits; **Hrs** – PCP Hours

Course Code Legend:

3	1	5	S	C

315 – Programme code for Master of Computer Applications (M.C.A).
S - Semester Number;
C – Course Number in the Semester

Detailed Syllabi

- The University has been recommended the following bridge courses for the non-computer science background students covering essential basics required to pursue two-year MCA programme.
    i. Introduction to Information Technology.
    ii. Programming in C.
    iii. Introduction to Database Systems.
    iv. Basics of Computer Networks.
    v. Problem Solving Techniques.
- The detailed Syllabi of study and shall be as shown in Appendix.

Duration of the Programme:

The M.C.A programme shall consist of a period minimum of two years (Four Semesters) and maximum of four years.

e.3.1 Medium of Instruction

The medium of instruction is only in **English**. The course material is also in **English.**

Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	4
Faculty for Specialization	2
Laboratory Assistant	1
Clerical Assistant	1

*Faculty at least in Assistant Professor Level

Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme are imparted through distance education methodology includes printed SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e- version of the course materials in the form of CD, e-book, e-tutorials, SWAYAM, Massive Open Online Courses (MOOC) courses, NPTEL, Open Educational Resources(OER),audio, video tutorials and virtual lab.

Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and virtual lab.

Student Support Services

The student support services will be facilitated by the MPBOU, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at MPBOU or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face-to-face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University,Bhopal.

(f) Procedure for Admissions, curriculum transaction and evaluation

Minimum qualification for admission

Candidates for admission to the first year of the Master of Computer Applications (M.C.A) programme shall be required to have passed the following examinations. Candidates who have passed;

B.Sc. Degree in Mathematics/Statistics/Applied Sciences/Computer Science/ Information Technology (or) B.Sc. Degree in Physics/Chemistry/ Electronics as major subject and Mathematics as ancillary subject (or) B.C.A./B.Com./B.B.A.(OR) qualification equivalent thereto. The candidate should have studied 10+2+3 pattern with Mathematics/Statistics/Business Mathematics in +2 level.

Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web-based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing

requirement for the laboratory experiments.

- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type
Theory courses (12 Hours / course / 4 credits)
Practical courses (120 Hours / course / 4 credits)

Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The end semester examination for theory and practical is maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook, case studies, review questions, quiz, multiple choice questions etc., for 25 marks.
- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.
- Student should submit assignment for theory and practical courses of every course and semester.

Division of Internal Marks (Assignment)

Theory		**Practical**	
Assignment	**Marks**	**Assignment:** Model Practical Test	**Marks**
Long and short answer questions, Workbook, case studies, quiz and multiple choice questions.	25	Algorithm Design, flowchart, DFD preparing source code, PL/SQL coding, output, results.	25

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

Minimum for a pass:

To pass in each course, a candidate is required to secure 50% marks in the End Semester examination and 50% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who do not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the Blocks Should Be Given Equal Importance

Part – A (10 x 2 Marks: 20 Marks) Answer all questions

Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)

Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

- Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.
- Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.
-

Division of marks in ESE – Practical (Maximum 75 marks)

The end semester practical examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Practical details	**Max. Marks**
Algorithm / Flowchart	10
Source Code	20
Debugging	10
Execution	10
Results	10
Viva-Voce	5
Record Note	10
Total	**75**

Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to IV semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the MCA degree only if he/she passes all the (including arrears) courses with in a period of FIVE years from the date of admission.

Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate.

Range of Marks	**Grade Points**	**Letter Grade**	**Description**
96 - 100	10.00	S+	First class – Exemplary
91 - 95	9.5	S	
86 - 90	9.0	D++	First class – Distinction
81 - 85	8.5	D+	
76 - 80	8.0	D	
71 - 75	7.5	A++	First Class
66 - 70	7.0	A+	
61 - 65	6.5	A	
56 - 60	6.0	B	Second Class
50 - 55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_iG_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses
Sum of the credit of the courses in the semester
= Sum of [Credit earned x Grade Points]
Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n\sum_i C_{ni}G_{ni}/ \sum_n\sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme Sum of the credits of the courses for the entire programme

Where

C_i - Credits earned for the course i in any semester

G_i – Grade Point earned for course i in any semester

n - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1 – 9.5	S	
8.6 – 9.0	D++	First class with Distinction*
8.1 – 8.5	D+	
7.6 – 8.0	D	
7.1 – 7.5	A++	First Class
6.6 – 7.0	A+	
6.1 – 6.5	A	
5.6 – 6.0	B+	Second Class
5.0 – 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

Fees Structure

Fee Particulars	First Year	Second Year
Admission Processing Fees	300	--
Course Fees	23,100	23,100
ICT fees	150	150
Total Fees	**23,550**	**23,250**

*The above mentioned fees structure is exclusive of examination fees.

Requirement of the laboratory support and library resources Laboratory Support

A well- equipped Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

Library Resources

The MPBOU, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science programmes. The Central library of

Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(g) Cost estimate of the programme and the provisions:

Expense details	**Amount in (Rs.) Approx.**
Programme development (Single time Investment) Honorarium to lesson writers Theory (17xRs.25,000/- per course)	4,45,000/-
Practical (4x Rs. 5000/- per course)	20,000/-
Programme delivery Printing of study materials (for 500 copies) (21 Courses x Rs 300/- x 500 copies)	31,50,000/-
Programme maintenance (per year) Honorarium to resource persons	5,00,000/-

(h) Quality assurance mechanism and expected programme outcomes:

Quality assurance comprises the policies, procedures and mechanisms which that specified quality specifications and standards are maintained.

University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached". *' Education for all'*

University's Vision and Mission

Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational,

Social, Technological, Environmental and Economic Magnificence (ESTEEM).

University Objectives

1. Providing for instructions and training in such branches of Learning at the university maydetermine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of' PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote

Quality Unleashes Opportunities Towards Excellence (QUOTE).

Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their assignments, internal and end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Expected Programme Outcomes:

- ✓ To widen the ability to plan, analyze, design, code, test, implement & maintain a software product for real time application development system.
- ✓ To support learners capability to setup their own enterprise in various sectors of Computer applications.
- ✓ To improve the knowledge of the learners in finding solutions and developing system based applications for real time problems in various domains involving technical, managerial, economical & social constraints.
- ✓ To develop in problem solving and programming skills in the various computing fields of IT industries.
- ✓ To prepare the learners to pursue higher studies in computing or related disciplines and to work in the fields of teaching and research.

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Appendix – Detailed Syllabi

BRIDGE OURSES

BRIDGE COURSE - I
INTRODUCTION TO INFORMATION TECHNOLOGY

Course Objectives:

- To educate the beginners the fundamentals of computer hardware and software.
- To teach them the basic concepts of internet and programming concepts.

Course Outcomes:

- Learn word processing using MS word
- Understand about internet concepts

Internet and World Wide Web:

Internet and World Wide Web-Web Multimedia-Recent Trends in IT- Anatomy of Computer-Central Processing Unit-Memory **Input and Output Devices:** Input and Output Devices- Secondary Storage Media-Introduction to Software-User Interfaces-Types of Operating Systems **Word Processing:** Word Processing: Formatting Documents-Word Processing Features-Desktop Publishing-Spreadsheet Applications & Database Applications-Internet Connectivity. **Communications:** Communications: Network Applications-The Electronic Web-Local Area Networks-Multimedia-IT in Business. **Programming and System Development:** Programming and System Development: Programming Languages-Programming Techniques-Personal, Social and Ethical issues.

Reference and Text Book:

Dennis P.Curtin, Kim Foley, KunalSen,Cathleen Morin, (2017), *"Information Technology The Breaking Wave",* Tata McGraw Hill Publication.

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BRIDGE COURSE - II
PROGRAMMING IN C

Course Objectives:

- To understand structure of program.
- To introduce the concepts of coding.
- To understand Arrays, Strings, Functions and Pointers.

Course Outcomes:

- Able to understand and design the solution to a problem using C
- Understand and implement Structures, Arrays and function.

Basic Structure of C Programs – Programming Style – Character Set – C Tokens – Keywords and Identifiers – Constants, Variables and Data Types – Declaration of Variables – Defining Symbolic Constants – Declaring a variable as a constant -Operators and Expressions.

Managing I/O Operations: Reading and Writing a Character – Formatted Input and Output. Decision making and branching – Flow of control **Arrays:** One-Dimensional Arrays – Declaration, Initialization – Two- Dimensional Arrays – Multi-dimensional Arrays – Dynamic Arrays –

Initialization. **Strings:** Declaration, Initialization of String variables – Reading and Writing strings– String handling functions. **User-defined functions:** Need – Multi-function programs – Elements of user defined functions – Definition – Return values and their types – Function calls, declaration, category – All types of arguments and return values – Nesting of functions – Recursion – Passing arrays, Strings to functions – Scope visibility and life time of variables. **Structures and Unions:** Structure Definition
– Giving Values to Members – Structure Initialization – Arrays of Structures – Arrays within Structures – Structures within Structures – Structures and Functions – Unions**. Pointers:** Introduction – Understanding Pointers – Accessing the Address of a Variable – Declaring and Initializing Pointers – Accessing a Variable through its Pointer.

Reference and Text Books:

1. Ashok N.Kamthane, (2006) , *Programming with ANSI and Turbo C*, Pearson Education.
2. Balagurusamy.E , (2012), 6th Edition *Programming in ANSI C*,, Tata McGraw Hill Publishing Company.
3. Gottfried,(2006), *Programming with C*, Schaum's Outline Series, Tata McGraw Hill.

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BRIDGE COURSE - III
INTRODUCTION TO DATABASE SYSTEMS

Course Objectives:

- To understand DBMS and its Life Cycle
- To introduce the concepts of Database Architecture
- To understand Data Normalization and related Normal Forms
- To understand Relational Algebra and its operations.

Course Outcomes:

- Describe DBMS and DDLC.
- Describe Normalization for Database design.
- Understand the Relational Algebraic Operations.

Introduction to Database Management Systems: Why a Database – Characteristics of Data in a Database – Database Management System: Transaction Management System – Concurrency- Control – Security Management – Language Interface – Storage Management – Why DBMS – Types of Database Management Systems: Hierarchical Model – Network Model – Relational Model **- Database Development Life Cycle :** Database Development Life Cycle Phases **- Database Architecture :** Conceptual, Physical and Logical Database Models –**Data Normalization** Data Normalization : Keys and Relationships – First Normal Form – Second Normal Form – 3NF – BCNF – 4NF – 5NF – DKNF – **Relational Algebra** : Relational Algebraic Operations – UNION, INTERSECTION, DIFFERENCE – CARTESIAN PRODUCT – SELECT – PROJECT – RENAME – JOIN – DIVISION.

Reference and Text Books:

1. Alexis Leon, Mathews Leon(2008), *Database Management Systems,* Tata McGraw Hill Education.
2. ElmasriRamez, NavatheShamkant(2017), *Fundamentals of Database System,* 7th Edition, Pearson Education.
3. Raghu Ramakrishnan(2014), Johannes Gehrke, *Database Management Systems*, Tata McGraw Hill Education.

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BRIDGE COURSE - IV
BASICS OF COMPUTER NETWORKS

Course Objectives:

- To understand networking concepts and basic communication model
- To understand network architectures and components required for data communication.

Course Outcomes:

- Able to understand the working principles of various application protocols
- Acquire knowledge about security issues and services available.

Introduction to Computer Networks: Definition of a Computer Network, Classification of networks: Based on transmission technology, Based on the their scale, Local area networks, Metropolitan area networks, Wide area networks - Merits and De-merits of Layered Architecture, Service Primitives: Reference models: The OSI Reference Model, The TCP/IP Reference Model, Comparison of the OSI & the TCP/IP Reference Models-Network topologies; Linear Bus Topology, Ring Topology, Star Topology, Hierarchical or Tree Topology, Topology Comparison, Considerations when choosing a Topology - Switching; Circuit switching, Message switching, Packet switching, Implementation of packet switching, Relationship between Packet Size and Transmission time, Comparison of switching techniques- Multiplexing- Transmission medium-Data Link Layer-Network Layer- Transport Layer.

Reference and Text Books:

1. Andrew S. Tanenbaum and David J. Wetherall(2011), *"Computer Networks",* 5th Edition, University of Washington, Pearson.
2. Bhushan Trivedi, 2016, *"Data Communication and Networks*" Oxford University Press.
3. Easwarakumar K S, R S Rajesh, R.Balasubramanian, (2010), "*Computer Networks: Fundamental and Application"*, 1/e, Vikas Publishing.
4. Rajneesh Agarwal, (2011), *"Data Communication and Computer Networks",* 1/e, Vikas Publishing.

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BRIDGE COURSE - V
PROBLEM SOLVING TECHNIQUES

Course Objectives:

- To understand about introduction of computers
- To acquire knowledge on problem solving techniques
- To understand the basics of programming

Course Outcomes:

- Able to write algorithm, pseudo code.
- Able to draw flowchart.

Introduction: Overview of computer-history-what is hardware-software-components of computer-input devices-output devices-memory-types of software- introduction to programming languages-assembler-interpreter-compiler.

Problem solving: Identification of problem – steps of problem solving-overview of problem solving techniques-Algorithm-method of writing-Rules-Examples- Flowchart-Symbols used in flowchart-

conditional statement-looping statements-connectors-Examples-Pseudo code-Definition- method of writing-data types-high level languages- logical operators-conditional statement-for loop-while loop-Data Structures-Examples.

Programming: Architecture of a computer program- Programming languages- first Program -- Writing, compiling, and executing a program – finding errors and debugging

Reference and Text Books:

1. Ata Elahi Springer, (2018), *Computer Systems: Digital Design, Fundamentals of Computer Architecture and Assembly Language.*
2. Harold Abelson, *Structure and Interpretation of Computer Programs,* 2nd Edition, MIT Electrical Engineering.
3. Pradeep K. Sinha &Priti Sinha, (2012), *Computer Fundamentals,* BPB publications.

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FIRST YEAR

SEMESTER I

Course Code	Title of the Course	Credits	Hours
31511	**DIGITAL COMPUTER ORGANIZATION**	**4**	**12**

Course Objectives:

- To impart the knowledge in the field of digital electronics.
- To impart knowledge about the various components of a computer and its internals.

Course Requirements:

- Before studying this course, the student has knowledge about basic principles of number system.
- Concepts of digital, Boolean and instruction

Course Outcome:

After the completion of this course, the student will be able to :

- Design and realize the functionality of the computer hardware with basic gates and other components using combinational and sequential logic.
- Understand the importance of the hardware-software interface

Unit No	Description
	BLOCK 1 :NUMBER SYSTEMS
1	**Number Systems :** Binary, Octal, Decimal and Hexadecimal number systems – Conversion from one base to another base – Use of complements – binary arithmetic – Numeric and Character codes.
2	**Boolean algebra and Combinational Circuits:** Fundamental concepts of Boolean Algebra – De Morgan's theorems
3	**Simplification of expressions** – Sum of products and products of sums – Karnaugh map simplification – Quine - McKluskey method – two level implementation of Combinational Circuits.
	BLOCK 2 COMBINATIONAL CIRCUITS AND SEQUENTIAL CIRCUITS
4	**Combinational Circuits:** Half Adder – Full Adder – Subtractors – Decoders – Encoders – Multiplexers – Demultiplexer.
5	**Sequential Circuits:** Flip flops – Registers – Shift Registers – Binary Counters –

	BCD Counters – Memory Unit.
6	**Data Representation :** Data Types – Complements – Fixed Point Representations – Floating Point Representations – Other Binary Codes –Error detection codes.
	BLOCK 3 : BASIC COMPUTER ORGANIZATION AND DESIGN
7	**Instruction Codes :** Instruction Codes – Computer Registers – Computer Instructions – Timing and Control
8	**Instruction cycle:** – Memory reference instructions – Input output and Interrupt – Complete Computer Description – Design on Basic Computer – Design of Accumulator logic
	BLOCK : 4 CENTRAL PROCESSING UNIT
9	Introduction – General Register organization – Stack organization
10	**Instruction formats:** – Addressing modes – Data transfer and manipulation – Program control.
11	**Input – output organization:** Peripheral devices – Input output interface – Asynchronous data transfer – Modes of transfer
12	**Priority interrupt:** – DMA – IOP – Serial Communication.
	BLOCK : 5 MEMORY ORGANIZATION
13	Memory Hierarchy – Main memory – Auxiliary memory – Associative memory
14	**Memory organization:** Cache memory – Virtual memory – Memory management hardware.

Reference and Text Books:

1. Albert Paul Malvino and Jerald A. Brown,(2008), Digital *Computer Electronics*, 3rd Edition, Tata McGraw Hill.
2. M. Morris Mano (2008), *Digital Logic and Computer Design,* Pearson Education.
3. Thomas C. Bartee (2008*), Digital Computer Fundamentals*, 6th Edition, Tata McGraw Hill.
4. V.C. Hamacher et al(2011), *Computer Organization*, 5th Edition, Tata Mcgraw Hill.

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Course Code	Title of the Course	Credits	Hours
31512	**OBJECT ORIENTED PROGRAMMING and C++**	**4**	**12**

Course Objectives:

- To provide an overview of working principles of object oriented paradigm
- To understand and apply the OOPs fundamentals
- To implement the features of OOP in real world applications

Course Outcome:

- Able to understand the object oriented programming techniques

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	**Introduction and Features**: Evolution of Object Oriented Language, Object oriented Paradigm, Basic concept of object-oriented programming- objects, classes, encapsulation and data abstraction, inheritance, polymorphism, dynamic binding, message passing
2	**Popular OOP languages.** Moving from C to C++ Introduction – Predefined console streams, hierarchy of console stream classes,
3	**I/O operations;** Unformatted I/O operations, formatted console I/O operations, manipulators, custom/user-defined manipulators.

	BLOCK 2 : CLASSES AND OBJECTS
4	**Classes and Objects:** Introduction, class specification, class objects, accessing class members, defining member functions, accessing member functions within a class, outside member functions as inline, private member function,
5	**Memory allocation for objects:** array of objects, function prototype, call by reference, return by reference, objects as function arguments, inline function, friend function, constant parameter and member function.
6	**Object Initialization:** Introduction - constructors, default constructor, parameterized constructors, multiple constructors in a class, dynamic initialization through constructors, copy constructor, dynamic constructor, destructor. Dynamic Objects: Introduction, pointers to objects, array of pointers to objects, this pointer.
	BLOCK 3 : INHERITANCE, POLYMORPHISM AND DATA CONVERSION
7	**Inheritance:** Introduction, derived class declaration, forms of inheritance, inheritance and member accessibility, multilevel inheritance, multiple inheritance, hierarchical inheritance, hybrid inheritance.
8	**Polymorphism:** Introduction, Function overloading, Operator overloading introduction, unary operator overloading, binary operatoroverloading, assignment operator overloading, overloading with friend functions.
9	**Data conversion:** conversion between basic data types, conversion between objects and basic types, conversion between objects of different classes. Virtual function: Introduction, need for virtual functions, pure virtual functions, abstract classes.
	BLOCK 4 : TEMPLATES AND FILES
10	**Generic Programming with Templates:** Introduction - class templates – class template with multiple arguments
11	**Function template:** function template with multiple arguments. inheritance of class template.
12	**Streams with Files:** Introduction, hierarchy of file stream classes, opening and closing of files, file pointers and their manipulators, sequential access to a file, file input/output with stream class, random access to a file.
	BLOCK 5 : EXCEPTION HANDLING
13	**Exception Handling:** Introduction– Basics of exception handling,exception handling mechanism, throwing mechanism, catching mechanism. Exceptions in constructors and destructors
14	**Other Exception Handling methods:** Handling uncaught exceptions, exceptions in operator overloaded functions, exception in inheritance tree, exceptions in class templates, memory allocation failure exception.

Reference and Text Books:

1. Balagurusamy.E,(2020),*Object oriented programming in C++*, 8th Edition, Tata McGrawHill Publications.
2. RoberLafore, (2010),*Object Oriented Programming in C++,* Fourth Edition, Galgotia Publications Pvt. Ltd., New Delhi.
3. Venugopal K.R and Rajkumar, T.Ravishankar (2006), *Mastering C++,* Tata McGrawHill Publishing Company Ltd.

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Course Code	Title of the Course	Credits	Hours

31513	DATA STRUCTURE AND ALGORITHMS	4	12

Course Objectives:

- The learner should be able to learn the fundamentals of Algorithms, various data structures, should be able to use them appropriately as per need during development ofprograms.
- Also, the learner should know different sorting and searching techniques so that correct techniques can be used in different programs
  To understand the complexity of the program does not increase due the sorting/ search technique employed.

Course Outcome:

After the completion of this course, the student will able to;

- To write programs using structures, strings, arrays, pointers and strings for solving complex computational problem.
- Use the data structures for real time applications
- Able to analyze the efficiency of DataStructures

Unit No	Contents
	BLOCK 1 : INTRODUCTION
1	**Introduction to Data Structure :** Types of Data Structure , Primitive data types
	Algorithms: –Time and space Complexity of algorithms
2	**Arrays:** Array initialization, Definition of Array, Characteristic of Array ,One-dimensional Array, Two-dimensional array and Multi dimensional array
	BLOCK 2 : LINEAR DATA STRUCTURE
3	**Stack :** Stack related terms, Operations on a stack,
4	**Representation of Stack:** Implementation of a stack – application of Stack. Expression Evaluation Polish notation.
5	**Queues:** Operations on queue Circular Queue, Representation of Queues, Application of Queues
6	**List:** Merging lists, Linked list, Single linked list, Double LinkedList, Header Linked list
7	**Operation on Linked List :** Insertion and Deletion of linked list
8	**Traversal:** Traversing a linked list , Representation of linked list.
	BLOCK:3 NON-LINEAR DATASTRUCTURE
9	**Trees:** Binary Trees, Types of Binary trees, Binary Tree Representation
10	**Binary Tree operations / Applications :** Traversing Binary Trees, Binary Search tree,
11	**Operations on Binary Tree:** Insertion and Deletion operations, Hashing Techniques.
	BLOCK 4 : SEARCHING TECHNIQUES
12	**Searching :** Introduction, Searching, Linear Search, Binary Search
	BLOCK5 : SORTINGTECHNIQUES
13	**Sorting:** Bubble sort, Insertion sort, Radix sort
14	**Other sorting Techniques:** Selection sort, Quick sort, Tree sort.

Reference and Text Books:

1. Ashok N Kamthane, (2007), *Programming and Data Structure*, Pearson Edition.
2. Ellis Horowitz and Sartaj Sahini, (2007), *Fundamentals of Data structures*, Second Edition,Universities press.

3. Lipschutz, Vijayalakshmi PaiG.A.,(2006),*Data Structures*, Seymour Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd.

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Course Code	Title of the Course	Credits	Hours
31514	DISCRETE MATHEMATICS	4	12

Course Objectives:

- To understand the concepts and operations Set theory, Graph Theory
- To understand and apply the Mathematical Logic in computer science.

Course Requirements:

- Knowledge about Logics and graphs

Course Outcome:

- Acquire the basic knowledge of matrix, set theory, functions and relations concepts needed for designing and solving problems
- Acquire the knowledge of logical operations and predicate calculus needed for computing skills
- Able to design and solve Boolean functions for defined problems

Unit No.	Contents
	BLOCK 1 : MATHEMATICAL LOGIC
1	**Mathematical Logic:** Statements and Notation - connectives -normal forms – The theory of inference for the statement calculus -
2	**Predicate Calculus**: The predicate calculus - Inference theory and predicate calculus.
3	**Set theory:** Sets – Basic concepts – notation - inclusion and equality of sets - the power set
	BLOCK 2 : RELATIONS
4	**Relations and ordering** properties – relation matrix and graph of a relation
5	**Relations** Partition – equivalence and compatibility relations
6	**Composition and partial ordering**: Composition – partial ordering – partially
	ordered set
	BLOCK 3 : FUNCTIONS
7	**Functions** – definition – composition – inverse – binary and n-ary operations
8	**Other Functions** : Characteristic function – hashing function.
	BLOCK 4 : ALGEBRAIC STRUCTURES
9	**Algebraic Structures:** Algebraic Systems: Examples and General Properties
10	**Semigroups and Monoids:** Definitions and Examples - Homomorphism of Semigroups and Monoids - Subsemigroups and Submonoids
11	**Groups:** Definitions and Examples - Cosets and Lagrange'sTheorem
12	**Normal Subgroups** – Algebraic Systems with two Binary Operations.
	BLOCK 5 : GRAPH AND FINITE PROBABILITY
13	**Graph theory:** Basic concepts – definition–paths - reach -ability and connectedness – matrix representation of graphs -trees.
14	**Finite Probability** – Probability Distributions – Conditional Probability Independence – Bayes' Theorem – Mathematical Expectation

Reference and Text Books:

1. BernandKolman, Roberty C. Busby, Sharn Cutter Ross, (2006), *Discrete Mathematical Structures*, Pearson Education.
2. J.P. Tremblay and R. Manohar,(2017), *Discrete mathematical structures with applications to Computer Science*, TMH Publishing Company.
3. Judith L. Gersting,(2014), *Mathematical Structures for Computer Science*, 7thEdition, W.H.Freeman and Company.
4. Narsingh Deo, (2003), *Graph Theory with Applications to Engineering and Computer Science*, PHI.
5. Ramasamy (2006), *Discrete Mathematical Structures with application to combinatorics*, Universities Press.
6. Richard Johnsonbaugh(2001), *Discrete Mathematics*, Fifth Edition, Pearson Education.
7. Venkatraman M K, Sridharan N and Chandrasekaran N,(2004), *Discrete Mathematics*, The National Publishing Company.

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Course Code	Title of the Course	Credits	Hours
31515	**DATA STRUCTURE USING C++ LAB**	**4**	**120**

Course Objectives:

- To be able to solve data structure problems using C++ language
- To learn and implement C++ language programming techniques
- To introduce the efficiency of the algorithm
- The course is designed to develop skills to design and analyze simple linear and non linear data structures.
- It strengthen the ability to the students to identify and apply the suitable data structure for the given real world problem.
- To be able to solve fundamental data structure problems using C++ language
- To learn and implement linear data structure programming techniques

Course Outcome:

- Students can develop programming knowledge
- Students can solve any kind of problems using C++ language
- Data Structure based problems can be solved
- Be able to design and analyze the time and space efficiency of the data structure
- Be capable to identity the appropriate data structure for given problem
- Have practical knowledge on the applications of data structures

Experiments based on C++ programming and Data Structures Theory concepts

Unit No.	Contents
	BLOCK 1 : SIMPLE C++ PROGRAMS
1	**Introduction** Simple C++ Programs
2	**Control Structures:** Using if and switch constructs Programs
3	**Looping , Arrays ,Structure statements**: for, while, do-while, Strings and Matrices Programs Problems
	BLOCK 2 : OOPs CONCEPTS

4	**Functions:** static function, friend function ,constructor , destructor and operator overloading and Recursive programs
5	**Inheritance and polymorphism:** Inheritance types and polymorphism types, Virtual function
6	**File:** File Handling C++ Programs, opening and closing a data file - creating a data file, processing a data file.
7	**Pointers :** Pointers and Pointers with Arrays Programs
	BLOCK 3: LINEAR DATA STRUCUTURE
8	**Stacks :** Stack Implementation, expression evaluation, Polish notation
9	**Queues:** Queue Implementation, Applications of Queue
10	**Linked List programs:** List, Merging lists, Linked list, Single linked list, Double Linked List, Header Linked list, Insertion and Deletion of linked list, Traversing a linked list.
	BLOCK 4 : NON LINEAR DATA STRUCTURE
11	**Tree Programs :** Trees, Binary Trees, Types of Binary trees, Binary Tree Representation, Traversing Binary Trees, Binary Search tree, Insertion and Deletion operations,
12	**Graphs:** Shortest Path Algorithms o Dijkstra's Algorithm o Graphs with Negative Edge costs o Acyclic Graphs o All Pairs Shortest Paths Algorithm **Minimum cost Spanning Trees** o Kruskal's Algorithm o Prims's Algorithm o Applications □ Breadth First Search
	BLOCK 5 : SEARCHING AND SORTING ALGORITHMS
13	**Searching Techniques:** Linear and Binary search Programs
14	**Sorting techniques**: Bubble sort, Quick sort, Insertion sort, Merge sort

Experiments based on C++ programming

- Simple C++ Programs
- Experiments using controls structures
- Experiments using arrays, Matrices and strings
- Problems using various types of functions and recursive programs
- Experiments using inheritance and polymorphism
- Experiments based on file handling in C++
- Practical problems using pointers and arrays.
- Problems based on real-time applications.

Experiments based on data structures using C++

- Design and Implement List data structure using i) array ii) singly linked list.
- Design and Implement basic operations on doubly linked list.
- Design and Implement stack using i) array ii) singly linked list
- Design and Implement Queue using i) array ii) singly linked list
- Design and Implement basic operations on Circular Queue
- Experiment on conversion of infix to postfix notation

- Design and implement expression evaluation
- Design and Implement basic operations (insertion, deletion, search, find min and find max) on Binary Search trees.
- Implementation of Breadth First Search Techniques.
- Implementation of Depth First Search Techniques.
- Implementation of various sorting techniques
- Implementation of searching techniques (Linear, Binary Search) using arrays.

Reference and Text Books:

1. Ashok N Kamthane(2007), Programming and Data Structure, Pearson Edition.
2. Balagurusamy.E (2020), *Object oriented programming in C++,* 8th Edition, Tata McGraw Hill Publications.
3. Ellis Horowitz and Sartaj Sahini (2008), *Fundamentals of Data structures in C*, Second edition, Universities press.
4. Robert Lafore (2010), *Object Oriented Programming in C++,* Fourth Edition, Galgotia Publications Pvt. Ltd., New Delhi.
5. Seymour Lipschutz, G.A.Vijayalakshmi Pai (2006), *Data Structures*, Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd.
6. Venugopal K.R and Rajkumar, T.Ravishankar (2017), *Mastering C++,* Tata McGraw Hill Publishing Company Ltd.

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SEMESTER II

Course Code	Title of the Course	Credits	Hours
31521	**ACCOUNTING AND FINANCIAL MANAGEMENT**	**4**	**12**

Course Objectives:

- To understand the process of estimating the cost of a particular product.
- To Prepare the estimate for various business activities such as purchase, sale, production and cash budgets

Course Requirements:

- Basic principles of Accounting

Course Outcome:

- Able to do balance sheet preparation and do analysis
- Able to do the budget preparation and control of a company

Unit No	Contents
	BLOCK 1 : INTRODUCTION - Financial Accounting:
1	**Financial Accounting:** Meaning and Scope – Principles – Concepts – Conventions
2	**Accounting process:** Journal - Ledger – Trail Balance – Trading Account – Profit and Loss Account – Balance Sheet
3	**Accounting Ratio Analysis** – Funds Flow Analysis –Cash Flow Analysis – Computerized account.

	BLOCK 2 : COST AND MANAGEMENT ACCOUNTING
4	**Introduction:** Meaning Scope and uses of cost and management accounting – Elements of Cost
5	**Cost Sheet** – Marginal Costing and Cost Volume Profit Analysis
6	**Break Even Analysis:** Concept, Applications and Limitations
	BLOCK 3 : STANDARD COSTING AND BUDGETING:
7	**Introduction :** Concept and importance standard costing - Variance Analysis – Material – Labor – Overhead – Sales – Profit Variances -
8	**Budgets and Budgetary Control** – Meaning and Types of budgets – Sales Budget – Production Budget
9	**Budgets:**Cash Budget – Master Budget – Flexible budgeting – Zero Base Budgeting.
	BLOCK 4 : FINANCIAL MANAGEMENT
10	**Introduction:** Objectives and Functions of Financial Management – Risk – Return Relationship –Time Value of Money
11	**Capital Budgeting:** Basic Methods of Appraisal of investments –
12	**Working Capital:** Concepts of working Capital ,Factors Affecting working Capital – Estimation of working capital requirements
	BLOCK 5 : COST OF CAPITAL
13	**Cost of Capital Structure and Dividend**: Meaning and types of Cost of Capital – computation of cost for debt and equity sources of capital and weighted average cost of capital
14	**Capital Structure** Meaning and types of capital structure – determinants of capital structure – types of Dividend Policy – Types of Dividend decision.

Reference and Text Books:

1. Ambrish Gupta (2005), Financial Accounting for Management, Pearson Education.
2. Iyengar S.P, "Cost and Management Accounting", Sultan Chand &Sons.
3. Khan and Jain (2011), *Management accounting: Text, problems and case*.
4. Maheswari S N (2018), Financial and Management Accounting, Sultan Chand & Sons.
5. Maheswari S.N (2010), "*Management Accounting & Financial Accounting*", Vikas Publications.
6. Pandey I M(2015), Financial Management, 11th Edition, Vikas Publications.
7. Pandey.M, "*Elements of Management Accounting*", Vikas Publishing House.
8. Ravi M Kishore(2010)*, Management Accounting and Financial Analysis*", Taxmons.
9. Shula and T.S.Grewal (2010), "*Advanced Accounting*", S.Chand and Company.

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Course Code	Title of the Course	Credits	Hours
31522	**RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS)**	**4**	**12**

Course Objectives:

- To understand the fundamentals of data models
- To make a study of SQL and relational database design.
- To know about data storage techniques an query processing.
- To impart knowledge in transaction processing, concurrency control techniques and External storage

Course Requirements:

- Knowledge about the basic concepts of the database.

Course Outcome:

- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Acquire the knowledge of query evaluation to monitor the performance of the DBMS.
- Develop a simple database application using normalization.

Unit No	Contents
	BLOCK 1INTRODUCTION
1	**Data base System Applications**, data base System VS file System – View of Data – Data Abstraction –Instances and Schemas – data Models – the ER Model
2	**Model :**Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor.
3	**History of Data base Systems** - Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.
	BLOCK 2 : RELATIONAL MODEL
4	**Introduction**– Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying / altering Tables and Views.
5	**Relational Algebra** – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews –
6	**Relational calculus** – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.
	BLOCK 3 : SQL QUERY
7	**Form of Basic SQL Query** – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases. Schema refinement
8	**Normal forms :**Problems Caused by redundancy – Decompositions – Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF–
9	**Join:** Lossless join Decomposition – Dependency preserving Decomposition – Schema refinement in Data base Design – Multi valued Dependencies – FORTH Normal Form.
	BLOCK4 TRANSACTION
10	**Introduction :**Transaction Concept- Transaction State- Implementation of Atomicity and Durability – Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability
11	**Protocols :** Lock Based Protocols – Timestamp Based Protocols- Validation-Based Protocols – Multiple Granularity.
12	**Recovery and Atomicity** – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage- Advance Recovery systems- Remote Backup systems

	BLOCK 5 STORAGE
13	**Data on External Storage** – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing – Comparison of File Organizations – Indexes and
14	**Performance Tuning-** Intuitions for tree Indexes – Indexed Sequential Access Methods (ISAM) – B+ Trees: A Dynamic Index Structure.

Reference and Text Books:

1. Colin Ritchie (2004), Relational Database Principles 2nd Edition.
2. ElmasriNavrate, Fundamentals of Database Systems, Pearson Education.
3. Peter Rob & Carlos Coronel, *Data base Systems design*, Implementation,and Management, 7th Edition.
4. Raghurama Krishnan, Johannes Gehrke(2014), *Data base Management Systems*, 3rd Edition, TATAMcGrawHill.
5. Silberschatz, Korth (2019), *Data base System Concepts*, 7th Edition, Tata McGraw Hill.
6. Sharad Maheswari and Ruchin Jain (2006), *Database management systems Complete Practical Approach*, Firewall media.

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Course Code	Title of the Course	Credits	Hours
31523	**COMPUTER GRAPHICS**	**4**	**12**

Course Objectives:

- To understand computational development of graphics
- To provide in-depth knowledge of display systems, image synthesis, shape modeling of 3D application.

Course Outcome:

- Enhance the perspective of modern computer system with modeling, analysis and interpretation of 2D and 3D visual information.
- Able to develop interactive animations.

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	**Introduction** Application areas of Computer Graphics, overview of graphics systems, video-display devices, raster-scan systems, random scan systems, graphics monitors and work stations and input devices.
2	**Output primitives:** Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms.
3	**Filled area primitives:** Scan line polygon fill algorithm, boundary-fill and flood-fill algorithms.

	BLOCK 2 : 2 D TRANSFORM AND CLIPPING
4	**2-D geometrical transform:** Translation, scaling, rotation, reflection and shear transformations
5	**2D Matrix representations:** homogeneous coordinates, composite transforms, transformations between coordinate systems.
6	**2-D viewing:** The viewing pipeline, viewing coordinate reference frame, window to view-port coordinate transformation, viewing functions,
7	**Clipping Algorithms:** Cohen-Sutherland and Cyrus-beck line clipping
	algorithms, Sutherland –Hodgeman polygon clipping algorithm.

	BLOCK 3 : 3D OBJECT REPRESENTATION
8	**Introduction:** Polygon surfaces, quadric surfaces, spline representation,
9	**Curve and surfaces:** Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon rendering methods.
	BLOCK 4 : 3D GEMETRIC TRANSFORMATION
10	**3-D Geometric transformations:** Translation, rotation, scaling, reflection and shear transformations, composite transformations.
11	**3-D viewing:** Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping.
	BLOCK 5 : VISIBLE SURFACE DETECTION METHODS AND ANIMATION
12	**Classification**, back-face detection, depth-buffer, scan-line, depth sorting, BSP-tree methods, area sub-division and octree methods.
13	**Computer animation:** Design of animation sequence, general computer animation functions, raster animation,
14	**Other Animation Techniques:** Computer animation languages, key frame systems, motion specifications.

Reference and Text Books:

1. Donald Hearn and M.Pauline Baker (2007), *Computer Graphics C version*, Pearson Education.
2. M. Newman and F. Sproull, (2004), *Interactive Computer Graphics*, McGraw Hill.
3. Foley, VanDam, Feiner and Hughes,(2004),*Computer Graphics Principles and Practice*, 2nd Edition in C, Pearson Education.
4. Plastok and Gordon Kalley (2000), Computer, McGraw Hill.

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Course Code	Title of the Course	Credits	Hours
31524	**VISUAL PROGRAMMING WITH .NET**	**4**	**12**

Course Objective:

- To develop an understanding of Visual Basic .Net
- To develop the skills necessary to create software solutions using VB with .Net
- To learn how to analyze certain types of problems with a software solution in mind

Course Requirements:

- Basic knowledge of Visual Basic

Course Outcome:

- Able to understand and design the solution to a problem using VB.Net
- Understand and implement the features of .Net for providing programmed solutions to complex problems.

Unit No	Contents
	BLOCK 1 : INTRODUCTION
1	**Introduction** - What Is Visual Studio? - Navigating the Visual Studio - The Menu
	– Toolbar - Work Area
2	**Toolbox** - Solution Explorer - Status Bar - Managing VS Windows
3	**Visual Studio Project Types** - Windows Projects - Web Projects - Office Projects - SharePoint Projects - Database Projects

	BLOCK 2 : C# AND VB.NET
4	**Basic Syntax** - Code Skeleton - The Main Method - The Program Class - The First Program Namespace - VS Code Editor - Class and Member Locators – Bookmarks - Running Programs - Primitive Types and Expressions - Enums - Branching Statements - Loops
5	**Creating Classes** - Class Inheritance – Class Snippet - Writing Methods - Parameters Passing - Returning Data
6	**Method Snippets** - Coding Fields and Properties - Declaring and Using Properties - The Property Snippet
	BLOCK 3 : UNDERSTANDING DELEGATES AND EVENTS
7	Events - Delegates - Handler Code - Implementing Interfaces - The interface Snippet - Applying Arrays and Generics -
8	**Creating and Building Projects** - Constructing Solutions and Projects - Navigating the Solution Explorer - Examining Property Settings – AssemblyName - Default Namespace - Target Framework - Output Type
9	**Building Projects** :Startup Object - Icon and Manifest - Compiling Applications - Rebuilding Solutions/Projects - Cleaning Solutions/Projects - Managing Dependencies, Compilation Settings - Navigating with Class View - Using the Class Designer - Class Designer Code Generation
	BLOCK 4 : DEBUGGING WITH VISUAL STUDIO
10	**Debugging methods:** Breakpoints - Stepping Through Code – Inspecting Application State - Locals and Autos Windows - Watch Windows - The Immediate Window - The Call Stack Window - The Quick Watch Window - Watching Variables with Pin To Source - Working with IntelliTrace
11	**Working with Databases** - Server Explorer - Creating a Database - Adding Tables - Relating Tables with Foreign Keys - Adding Stored Procedures - Configuring Database Options
	BLOCK 5 : BUILDING PROGRAMS WITH VS 2010
12	Building Desktop Applications with WPF - Starting a WPF Project - Understanding Layout - Grid Layout - StackPanel Layout - DockPanel Layout - WrapPanel Layout - Canvas Layout
13	**Using WPF Controls** - Managing Windows for Controls - Setting Properties - Handling Events - Coding Event Handlers - Working with Data in WPF - Data Source - Configuring a ComboBox
14	**Reading and Saving Data** - Using the DataGrid - Summary -Creating Web Applications with ASP.NET MVC - Designing Silverlight Applications- Deploying Web Services with WCF

Reference and Text Books:

1. Andrew Moore(2010), *Visual Studio 2010 All-in-One for Dummies*, Wiley Publishing.
2. Joe Mayo(2010), *Visual Studio 2010 - A Beginner's Guide*, Tata Mc Graw Hill Edition.
3. Nick Randolph, David Gardner (2010), *Professional Visual Studio 2010*, Wiley Publishing.

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Course Code	Title of the Course	Credits	Hours
31525	**VB .NET and RDBMS LAB**	**4**	**120**

Course Objectives:

- To develop an understanding of Visual Basic .Net
- To develop the skills necessary to create software solutions using VB with .Net
- To learn how to analyze certain types of problems with a software solution in mind

- To understand the fundamentals of data models
- To make a study of SQL and relational database design.
- To know about data storage techniques an query processing.
- To impart knowledge in transaction processing, concurrency control techniques and External storage.

Course Requirements:

- Basic knowledge of Visual Basic and file system

Course Outcome:

- Able to understand and design the solution to a problem using VB. Net
- Understand and implement the features of .Net for providing programmed solutions to complex problems
- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Acquire the knowledge of query evaluation to monitor the performance of the DBMS.
- Develop a simple database applications using normalization.

Lab Experiments should be based on Visual Programming with .NET Theory for solving real time applications.

Contents
SIMPLE APPLICATIONS
Simple Applications: Developing simple applications using VB.NET a. Finding factorial Value b. Money Conversion c. Quadratic Equation d. Temperature Conversion e. Login control
Login form: Create and Validate Login Form, Program to design Class, Program to demonstrate Inheritance, Polymorphism and Interfaces.
CONTROLS
Controls: Advance Controls, Common Dialog Controls. 2. Adrotator Control 3. Calendar control
a. Display messages in a calendar control b. Display vacation in a calendar control c. Selected day in a calendar control usings tyle d. Difference between two calendar dates 4. Treeview control a) Treeview control and datalist b)Treeview operations 5. Validation controls
Active X Controls: Working with intrinsic controls and ActiveX controls
MDI AND DATA CONTROLS
MDI: Application with multiple forms
Data controls: Application using data controls
DIALOGS AND MENU
Dialogs: Application with dialogs
Common Dialogs: Application using Common Dialogs

Menus: Application with Menus
EVENTS AND DATABASE
Events and Database: Drag and Drop Events Database Management Creating ActiveX Controls
DataGridView:ADO.NET Code to show records in DataGridView Control. 1. Databinding using datalist control 2. Datalist control templates 3. Databinding using datagrid 4. Datagrid control template 5. Datagrid hyperlink 6. Datagrid button column 7. Datalist event 8. Datagridpaging
Database operations:ADO.NET Code to perform Insert, Delete, Update and Select operations.
CRYSTAL REPORTS AND WEB APPLICATION
Crystal Reports
Web Application using ASP.NET that uses validation controls.

RDBMS

- ***Practical Lab exercises based on the following for solving various real-time applications like student, employee, electricity, railway etc., database manipulations.***

Contents
TABLE MANIPULATION
Table creation, renaming a Table, copying another table, Dropping a Table
Table Description: Describing Table Definitions, Modifying Tables, Joining tables, Number and Date functions.
SQL QUERIES AND SUB QUERIES
SQL Queries: Queries, Sub Queries, and aggregate functions
DDL: Experiments using database DDL SQL statements
DML: Experiment using database DML SQL statements
DCL: Experiment using database DCL SQL statements
INDEX AND VIEW
Index : Experiment using database index creation, Renaming a index, Copying another index, Dropping a index
Views: Create Views, Partition and locks
EXCEPTION HANDLING AND PL/SQL
Exception Handling: PL/SQL Procedure for application using exception handling
Cursor: PL/SQL Procedure for application using cursors
Trigger: PL/SQL Procedure for application using triggers
Package: PL/SQL Procedure for application using package
Reports: DBMS programs to prepare report using functions
APPLICATION DEVELOPMENT
Design and Develop Application: Library information system, Students mark sheet processing, Telephone directory maintenance, Gas booking and delivering, Electricity bill processing, Bank Transaction, Pay roll processing. Personal information system, Question database and conducting Quiz and Personal diary

Reference and Text Books:

1. Andrew Moore (2010), *Visual Studio 2010 All-in-One for Dummies*, Weiley Publishing.
2. Colin Ritchie (2004), *Relational Database Principles*, 2nd Edition.
3. ElmasriNavrate, *Fundamentals of Database Systems*, Pearson Education.
4. Joe Mayo (2010), *Visual Studio 2010 - A Beginner's Guide*, Tata Mc Graw Hill Edition.
5. Nick Randolph (2010), David Gardner, *Professional Visual Studio 2010*, Wiley Publishing.
6. Peter Rob & Carlos Coronel, *Data base Systems design, Implementation, and Management*, 7th Edition.
7. Raghurama Krishnan (2014), Johannes Gehrke, Data base Management Systems, 3rd Edition, TATA McGrawHill.
8. Sharad Maheswari and Ruchin Jain (2006), *Database management systems Complete Practical Approach,* Firewall media.
9. Silberschatz, Korth (2019), *Data base System Concepts*, 7th Edition, Tata McGraw Hill.

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SECOND YEAR

SEMESTER III

Course Code	Title of the Course	Credits	Hours
31531	**SOFTWARE ENGINEERING**	**4**	**12**

Course Objective:

- To know of how to do project planning for the software process.
- To learn the cost estimation techniques during the analysis of the project.
- To understand the quality concepts for ensuring the functionality of the software

Course Requirement:

- Fundamental concepts of Software Engineering

Course Outcome:

- Understand the activities during the project scheduling of any software application.
- Learn the risk management activities and the resource allocation for the projects.
- Able to create reliable, replicable cost estimation that links to the requirements ofproject planning and managing.

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	**Software:** Role of software, Software myths. Generic view of process: A layered technology, a process framework, The Capability Maturity Model Integration (CMMI)
2	**Process patterns**, Process assessment, Personal and Team process models.
3	**Process model:** The waterfall model, Incremental process models, Evolutionary process models, The Unified process.
	BLOCK 2 : REQUIREMENT ENGINEERING:
4	Design and Construction, Requirement Engineering Tasks, Requirements Engineering Process, Validating Requirements.
5	**Building the Analysis Model:** Requirement analysis, Data Modeling concepts, Object-Oriented Analysis
6	**Modeling:** Scenario-Based Modeling, Flow-Oriented Modeling Class-Based Modeling, Creating a Behavioral Model.

	BLOCK3 : SYSTEM DESIGN
7	**Design Engineering:** Design process and quality, Design concepts, the design model.
8	**Architectural Design:** Software architecture, Data design, Architectural styles and patterns, Architectural Design.
9	**User interface design:** The Golden rules, User interface analysis and design, Interface analysis, Interface design steps, Design evaluation.
	BLOCK 4 : SYSTEM TESTING
10	**Testing Strategies:** Approach to Software Testing, Unit Testing, Integration Testing, Test strategies for Object-Oriented Software, Validation Testing, System Testing, the art of Debugging, Black-Box and White-Box testing.
11	**Product Metrics:** Software Quality, Product Metrics, Metrics for Analysis Model, Design Model, Source code and Metrics for testing, Metrics for maintenance. Metrics for Process and Projects Domains: Software Measurement, Metrics for Software Quality and Software Process.
	BLOCK 5 : RISK and QUALITY MANAGEMENT
12	Risk Strategies: Reactive vs. Proactive Risk strategies, software risks, Risk identification.
13	**Risk Protection and refinement:** Risk projection, Risk refinement, Risk Mitigation, Monitoring and Management, RMMM Plan.
14	**Quality Management:** Quality concepts, Software quality assurance, Software Reviews, Formal Technical reviews, Statistical Software quality Assurance, Software reliability, The ISO 9000 quality standards.

Reference and Text Books:

1. Agarwal K.K & Yogesh Singh(2007), *Software Engineering*, 3rd Edition New Age International Publishers.
2. James F. Peters, Witold Pedrycz (2000), *Software Engineering an Engineering Approach*, John Wiley & Sons.
3. Roger S. Pressman (2015), *Software Engineering - A practitioner's Approach*, McGraw-Hill 8th Edition.
4. Richard Fairlay (2008), *Software Engineering Concepts*, McGraw Hill Book Company.
5. Pankaj Jalote (2005), *An Integrated Approach to Software Engineering*, 3rd Edition , Narosa Publishing House.
6. Somzerville (2007), *Software Engineering*, 8th Edition, Pearson Education.
7. Waman S Jawadekar (2004), *Software Engineering Principles and Practice*, Tata McGraw-Hill.

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Course Code	Title of the Course	Credits	Hours
31532	**OPERATING SYSTEMS**	**4**	**12**

Course Objectives:

- Able to understand the operating system principles
- Able to know the Principles of Deadlock, processor scheduling and memory management.

Course Requirements:

- To be aware of the evolution and fundamental principles of operating system, processes and their communication

Course Outcome

- Students have acquired the knowledge about the types of operating systems
- Students have acquired the knowledge about the functions of operatingsystem

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	**Introduction:** Definition of Operating Systems – Computer System Organization
2	**Computer System Architecture** – Operating System Structure – Operating System Operations
3	**System Structures:** Operating System Services – System Calls – System Programs – Operating System Design and Implementation.
	BLOCK 2 : PROCESS CONCEPT
4	**Process Concept:** Process Scheduling – Operations on Processes – Inter Process Communication
5	**Process Scheduling:** Scheduling Concepts – Scheduling Criteria – Scheduling Algorithms – Multiple Processor Scheduling
	BLOCK 3 : SYNCHRONIZATION
6	**Synchronization:** The Critical Section Problem – Synchronization Hardware – Semaphores – Classic Problems of Synchronization –Monitors
7	**Deadlocks:** Deadlocks Characterization – Methods for Handling Deadlocks
8	**Deadlock** Prevention – Avoidance – Detection –Recovery from Deadlock.
	BLOCK 4 : MEMORY MANAGEMENT
9	**Memory Management Strategies:** Swapping – Contiguous Memory Allocation – Paging – Segmentation
	BLOCK 5 : FILE SYSTEM
10	**File Concept** – Access Methods – Directory
11	**Structure** – File System Mounting – File Sharing – Protection.
12	**Implementing File Systems:** File System Structure – File System Implementation
13	**Directory Implementation** – Allocation Methods – Free Space Management
14	**Secondary Storage Structure:** Overview of Mass Storage Structure – Disk Structure – Disk Attachment – Disk Scheduling – Disk Management.

Reference and Text Books:

1. Abraham Silberschatz (2009), Peter Baer Galvin and Greg Gagne, "*Operating System Principles*", 7th Edition, Wiley India Edition.
2. Andrew S.Tanenbaum (2006), *Operating Systems Design and Implementation*, 3rd edition, Prentice Hall.
3. Harvey M. Deitel (2007), *An Introduction to Operating Systems*, 3rd Edition, Addison Wesley.

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Course Code	Title of the Course	Credits	Hours
31533	**INTERNET AND JAVA PROGRAMMING**	**4**	**12**

Course Objectives:

- To provide an overview of working principles of internet, web related functionalities
- To understand and apply the fundamentals core java, packages, database connectivity for computing

Course Requirements:

- Basic knowledge of internet and programming principles

Course Outcome:

- Able to understand the internet standards and recent web Technologies
- Able to implement, compile, test and run Java program,
- Able to make use of hierarchy of Java classes to provide a solution to a given set of requirements found in the Java API

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	**Basic Internet Concepts:** Connecting to the Internet – Domain Name System – E-mail
2	**The World Wide Web** – Internet Search Engines – Web Browsers – Chatting and conferencing on the Internet
3	**Online Chatting** –Messaging – Usenet Newsgroup – Internet Relay chat (IRC) – FTP – Telnet.
	BLOCK 2 : FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING
4	**Basic concepts** of OOP – Benefits – Applications. Java Evolution: Features – how java differs from C and C++ - java and internet- java support system – java environment
5	**Overview of Java Language** –Introduction – Simple Java Program – Comments – Java Program Structure – Tokens – Java Statements – Implementing a Java Program – JVM – Command Line Arguments. Constants – Variables – Data Types – Type Casting.
6	**Operators and Expressions:** Arithmetic Operators – Relational, Logical, Assignment, Increment and Decrement, Conditional, Bitwise, Special Operators – Arithmetic Expressions, Evaluation of Expression – Precedence of Arithmetic Operators – Type Conversions – Operator Precedence and associativity – Mathematical Functions. **Decision Making and Branching:** If –if…..else –Nesting of if……. Else – else if– switch. Decision Making and Looping: While – do – for – jump in loops – labeled loops.
	BLOCK 3 : CLASSES, OBJECTS AND METHODS
7	**class:** Defining a class –fields –methods –creating objects – accessing class members – constructors – methods overloading –static members –nesting of methods – Inheritance –overriding methods –final variables-classes –methods
8	**Arrays, Strings and Vectors** :One dimensional Arrays –creating of array – Two dimensional arrays- strings –vectors –Wrapper classes – Enumerated Types - Interfaces: Multiple Inheritance
9	**Packages:** Defining interface –Extending interfaces – Implementing Interfaces - Putting Classes Together
	BLOCK 4: MULTITHEREADING, EXCEPTION AND APPLETS
10	**Multithreaded Programming** – Creating Threads –Extending the thread class – Stopping and Blocking a thread –Life cycle of a thread –using thread methods – Thread Exceptions –Priority –Synchronization –Implementing the 'Runnable' Interface
11	**Managing Error and Exceptions:** Types of errors –Exceptions –Syntax of

	Exception Handling code – Multiple Catch statements –using finally statement – Throwing our own Exceptions – using exceptions for Debugging - Graphics Programming: The Graphics Class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs – Drawing Polygons – Line Graphs – Using Control Loops in Applets – Drawing Bar Charts.
12	**Applet Programming:** How applets differ from Applications – preparing to write applets – Building Applet Code – Applet life cycle – creating an Executable Applet – Designing a Web Page – Applet Tag – Adding Applet to HTML file – Running the Applet – Passing parameters to Applets – Displaying Numerical values – Getting input from the user
	BLOCK 5 : MANAGING INPUT/OUTPUT FILES IN JAVA
13	**Introduction** – concept of streams –stream classes – byte stream classes – character Stream
14	**I/O classes**: –using stream –using the file class –Input / output Exceptions – creation of files – Reading / writing characters – reading writing bytes Random access files- Interactive input and output –Other stream classes

Reference and Text Books:

1. Balagurusamy.E (2010), *Programming with Java*, 4e, Tata McGraw-Hill.
2. Deitel, Deitel and Nieto (2000), *Internet and World Wide Web – How to program, Pearson Education.*
3. Cay S. Horstmann (2003)*, Gary Cornell, Core Java*, Volume I and II, 5th Edition, Pearson Education.
4. Elliotte Rusty Harold (2000), *Java Network Programming*, O'Reilly Publishers.
5. Ed Roman (1998), *Enterprise Java Beans*, Wiley Publishers.
6. Hunt (2004), *Guide to J2EE Enterprise Java*, Springer Publications.
7. Krishnamoorthy R and Prabhu.S (2013), *Internet and Java Programming*, New Age\ International Publishers.
8. Mohamal Ibrahim .B (2006), *Java : J2SE – A Practical Approach*, Firewall media.
9. Naughton and H.Schildt (2006), *Java 2 - The complete reference*, Fourth edition, Tata McGraw-Hill.
10. Topley (2002), *J2ME in A Nutshell*, O'Reilly Publishers.

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Course Code	Title of the Course	Credits	Hours
31534	**COMPUTER NETWORKS**	**4**	**12**

Course Objectives:

- To understand networking concepts and basic communication model
- To understand network architectures and components required for data communication.

Course Requirements:

- Basic knowledge of networking

Course Outcome:

- Able to understand the working principles of various application protocols
- Acquire knowledge about security issues and services available

Unit No.	Contents
	BLOCK 1 : INTRODUCTION & PHYSICAL LAYER

1	**Introduction;** Computer Networks - Applications - Line configuration - Topology - Transmission Modes
2	**Categories of Network:** LAN, MAN, WAN - OSI Layer.
3	**Physical Layer:** Analog and Digital Signals Performance - Transmission Media
	BLOCK 2 : DATA LINK LAYER
4	**Data Link Layer:** Error Detection and correction – Introduction – Block Coding – Cyclic Redundancy Check – Framing – Flow and error Control –
5	**Data link layer protocols:** stop - wait protocol and sliding window protocol - ARQ, Go-back-n ARQ, selective - repeat ARQ.
6	**Multiple Access Protocols:** ALOHA – CSMA – CSMA/CD – CSMA/CA.
	BLOCK 3 : NETWORK LAYER
7	**Introduction:** Circuit switching - packet switching - message switching - Virtual circuit and Datagram subnets
8	**Routing algorithm :** Static routing -shortest path routing, Flooding, Flow based routing - Dynamic routing - distance vector routing, link state routing
9	**Other Routing Algorithms:** Hierarchical routing, Broad cast, Multi cast routing - Congestion, Control Algorithms
	BLOCK 4 : TRANSPORT LAYER
10	**Introduction:** Process to process delivery – UDP – TCP - Connection oriented Vs connectionless services.
11	**Applications and services:** Domain name system - Remote Logon – Mail Exchange - File Transfer
12	**Remote** Procedure Call - Remote File Access – WWW and HTTP – SNMP.
	BLOCK 5 : NETWORK SECURITY
13	**Introduction:** Cryptography – Encryption model – Transposition and Substitution Chipers – Cryptographic principles
14	**Symmetric key cryptography:** DES – AES – Asymmetric key cryptography: RSA – Security services.

Reference and Text Books:

1. Andrew S Tanenbaum (2013), *Computer Networks*, 5th Edition, Pearson Education.
2. Behrouz A. Forouzan, (2017), *Data Communications and Networking,* 4th Edition, TMH.
3. S.Keshav(2008), *An Engineering Approach to Computer Networks*, 2nd Edition, Pearson Education.
4. William Stallings (2007), Data and Computer Communications, 8th Edition, PrenticeHall.

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Course Code	Title of the Course	Credits	Hours
31535	**DATA MINING AND WAREHOUSING**	**4**	**12**

Course Objective:

- This course presents on depth of to data mining techniques; association rule, clustering, classification, web mining, temporal and sequential data mining and provide a practical exposure using data mining tool orange.
- To enable the students to learn the basic functions, principles and concepts of Data Mining
- To understand the fundamentals of Big Data Analytics

Course Requirements:

- Basic Concepts of Database

Course Outcome:

On successful completion of the course the students should have:

- Understand the data mining techniques such as classification and web mining.
- Able to analyze the data and obtain computational intelligence

Unit No.	Contents
	BLOCK 1 : DATA MINING and WAREHOUSING INTRODUCTION
1	**Data Warehousing Introduction** – Definition-Architecture-Warehouse Schema-Warehouse server-OLAP operations. Data Warehouse technology – Hardware and operating system
2	**Data Mining** - Definition – DM Techniques – current trends in data mining - Different forms of Knowledge – Data selection, cleaning, Integration, Transformation, Reduction and Enrichment.
3	**Data:** Types of data - Data Quality - Data Preprocessing - Measures of similarity and dissimilarity. **Exploration:** Summary statistics – Visualization.
	BLOCK 2 : ASSOICATION RULE MINING AND CLASSIFICATION
4	**Association rules:** Introduction – Methods to discover association rule – Apriori algorithm Partition Algorithm
5	**AR Algorithms:** Pincher search algorithm – Dynamic Item set algorithm – FP Tree growth algorithm.
6	**Classification:** Decision Tree classification – Bayesian Classification – Classification by Back Propagation.
	BLOCK 3 : CLUSTERING TECHNIQUES AND MACHINE LEARNING
7	**Introduction** – Clustering Paradigms – Partitioning Algorithms – K means & K Mediod algorithms – CLARA – CLARANS – Hierarchical clustering – DBSCAN – BIRCH – Categorical Clustering algorithms – STIRR – ROCK – CACTUS.
8	**Introduction to machine learning** – Supervised learning – Unsupervised learning – Machine learning and data mining.
9	**Neural Networks:** Introduction – Use of NN – Working of NN Genetic Algorithm: Introduction –Working of GA.
	BLOCK 4 : WEB MINING AND VISUAL DATA MINING
10	**Introduction** –Web content mining – Web structure mining –Web usage mining –Text mining –Text clustering, Temporal mining -Spatial mining
11	**Visual data mining** – Knowledge mining – Various tools and techniques for implementation using Weka, Rapidminer and Matlab.
	BLOCK 5 : INTRODUCTION TO BIG DATA ANALYTICS
12	**Big Data Characteristics**- Types of Big Data- Traditional Versus Big Data Approach
13	**Technologies** Available for Big Data
14	**Hadoop** – Introduction - What is Hadoop? - Core Hadoop Components - Hadoop Ecosystem - Physical Architecture – Hadoop Limitations

Reference and Text Books:

1. Arun K Pujari (2008), "*Data Mining Techniques*", Universitypress.
2. Alex Berson, Stephen J.Smith(2004) , "*Data Warehousing , Data Mining & OLAP*", TataMcGraw Hill.
3. C S R Prabhu (2002), "*Data Warehousing – concepts, techniques and applications* ", 2nd Edition, Prentice Hall of India.
4. DT Editorial Services (2016), "*Black Book- Big Data (Covers Hadoop 2, MapReduce, Hive, Yarn, PIG, R, Data visualization*)", Dream tech Press edition.
5. Jaiwei Han, Michelinne Kamber (2008), *"Data Mining: Concepts and Techniques*", Harcourt

India, Morgan Kauffman publisher.
6. Radha Shankarmani, M Vijayalakshmi (2016), "*Big Data Analytics*", first Edition, Wiley Publications,
7. Seema Acharya, Subhashini Chellappan (2016), "*Big Data and Analytics*", Wiley Publication, first edition.

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Course Code	Title of the Course	Credits	Hours
31536	**INTERNET AND JAVA PROGRAMMING LAB**	**4**	**120**

Course Objective:

- To understand and practice markup languages
- To understand and practice embedded dynamic scripting on client side Internet Programming
- To understand and practice web development techniques on client-side

Course Requirement:

- Basic concepts of Web and Java programming

Course Outcome:

- Explore markup languages features and create interactive web pages using them
- Learn and design Client-side validation using scripting languages
- Acquire knowledge about Open source JavaScript libraries
- Able to design front end web page and connect to the back end databases.

Experiments based on Internet Programming Theory

Unit No.	Contents
	BLOCK 1 : JAVA FUNDAMENTAL PROBLEMS:
1	Simple Java Problems
2	class and objects
3	Conditional control using java
4	Looping using java
	BLOCK 2 : OOP CONCEPTS
5	Function overloading programs
6	Operator overloading programs
7	Inheritance programs, Packages
8	Polymorphism programs Message passing programs
	BLOCK 3 : THREAD & VIRTUAL FUNCTION
9	Threads
10	Virtual function programs
	BLOCK 4 : I/O AND EXCEPTION HANDLING
11	Exception handling programs
12	I/O manipulation programs,
	BLOCK 4 :NETWORK PROGRAMMING
13	Applet programs
14	Implementation of simple network programs using java

Reference and Text books:

1. Balagurusamy.E (2010), Programming with Java, 4e, Tata McGraw-Hill.
2. Deitel, Deitel and Nieto (2000), Internet and World Wide Web – How to program, Pearson Education.
3. Cay S. Horstmann (2003)*, Gary Cornell, Core Java*, Volume I and II, 5th Edition, Pearson Education.
4. Elliotte Rusty Harold (2000), Java Network Programming, O'Reilly Publishers.
5. Ed Roman (1998), *Enterprise Java Beans*, Wiley Publishers.
6. Hunt (2004), *Guide to J2EE Enterprise Java*, Springer Publications.
7. Krishnamoorthy R and Prabhu.S (2013), Internet and Java Programming, New Age International Publishers.
8. Mohamal Ibrahim .B (2006), *Java : J2SE – A Practical Approach*, Firewall media.
9. Naughton and H.Schildt (2006), Java 2 - The complete reference, Fourth edition, Tata McGraw-Hill.
10. Topley (2002), *J2ME in A Nutshell*, O'Reilly Publishers.

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SEMESTER IV

Course Code	Title of the Course	Credits	Hours
31541	**Internet of Things**	**4**	**12**

Course Objectives:

- To understand the basics of Internet of things and protocols.
- To introduce some of the application areas where Internet of Things can be applied.

Course Requirements:

- Basic knowledge about internet and its application.

Course Outcome:

- Able to perform data analytics and their role in Internet of things.
- Knowledge of IoT protocols.
- It helps to rely less on physical resources and started to do smarter applications.

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	Introduction: Definition and characteristics of IoT – Elements of IoT Eco system – IoT challenges.
2	**IoT Design:** Physical Design of IoT – IoT protocols - Logical Design of IoT – functional blocks – communication models – communication API
3	**Technologies**: IoT Enabled Technologies – IoT Levels – Domain Specific IoTs
	Block 2 : M2M and IoT components
4	**IoT and M2M** – Introduction – Difference between IoT and M2M – SDN and NFV for IoT
5	**IOT Design Methodology** IoT systems management - IoT design methodology-Specifications - Integration and Application Development
6	**IOT Components** Sensors and activators - Communication modules - Zigbee-

	RFID-Wi-Fi-Power sources.
	BLOCK 3: IoT Platforms and Applications
7	**Building IOT with Hardware Platforms** Platform - Arduino/Intel Galileo/Raspberry Pi- Physical device – Interfaces.
8	**IoT Applications / case studies Illustration IoT design:** Home Automation – Cities- Smart Agriculture – Smart Environment - Smart Grid– Smart Healthcare - Connecting IoT to cloud-Cloud storage for IoT-Data Analytics for IoT-Software & Management - Tools for IoT.
	Block 4: IoT systems Logical Design using Python
9	**Introduction:** History of Python - Installing Python – Python character set - data types - expressions
10	**Decision Statements:** Introduction - if , if-else , nested if statements – multi-way if-else if statements. Loop Control Statements: Introduction – while loop – range() function – for loop = nested loops – break and continue statements
11	**Functions:** Introduction – Syntax and basics of function – use of function – parameters and arguments in function – local and global variables – return statement. Strings: Introduction – The str class – built in functions for string – index[] operator - traversing string – immutable strings – string operators – string operations.
	Block 5 : List, Tuples And Sets
12	**Lists :** Introduction – creating lists – accessing the elements of a list – negative list indices – list slicing – built-in functions for list – list operator – list methods – passing list to a function – returning list from function
13	**Tuples and sets:** Introduction to tuples - creating – tuple() function – built-in functions for tuples - indexing -slicing – operators – list and tuples – sorting - traversing. Sets – creating – set in and not in operator – set classes - operations.
14	**Python packages of Interest for IoT :** JSON, XML – HTTPlib – URL lib – SMTP lib

Reference and Text Books:

1. Ashok Namdev Kamthane, Amit Ashok Kamthane(2018),*Programming and Problem solving with Python,* Mc GrawHill Education.
2. ArshdeepBahga, Vijay Madisetti (2015), "*Internet of Things-A hands-on approach*",
3. Universities Press.
4. Jan Ho¨ ller, VlasiosTsiatsis , Catherine Mulligan, Stamatis , Karnouskos, Stefan Avesand. David Boyle.(2014*).From Machine to-Machine to the Internet of Things - Introduction to a New Age of Intelligence*. Elsevier..
5. Manoel Carlos Ramon (2014), *Intel® Galileo and Intel® Galileo Gen 2: API Features and Arduino Projects for Linux Programmers*, Apress,.
6. Marco Schwartz(2014), *Internet of Things with the ArduinoYun, Packt Publishing*.
7. Olivier Hersent, David Boswarthick, Omar Elloumi.(2012).*The Internet of Things – Key Applications and Protocols*. Wiley.

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Course Code	Title of the Course	Credits	Hours
31542	**ARTIFICIAL INTELLIGENCE AND SOFT COMPUTING**	**4**	**12**

Course Objective:

- To learn the key aspects of Artificial Intelligence (AI) and Soft computing principles and

approaches.

- To know about the components and building block hypothesis of Genetic algorithm.
- To study the fuzzy logic components.

Course Requirements:

- Basic concepts of Artificial Intelligence, Fuzzy Set and Neural Networks

Course Outcome:

- Write Genetic Algorithm to solve the optimization problem
- Solve real-world problems using AI, fuzzy concepts and develop a Fuzzy expert system to derive decisions.

Unit No.	Contents
	ARTIFICAL INTELLIGENCE
	BLOCK 1 : PROBLEMS AND SEARCH
1	**Introduction:** The Artificial Intelligence (AI) Problem – What is an AI technique - Criteria for success.
2	**Problems, Problem Spaces, Search:** Defining Problems, Problem Spaces, Search State space search - Production Systems – Problem characteristics - Production system characteristics – Application areas.
3	**Heuristic Search techniques**: Generate and Test - Hill Climbing- Best-First search – Problem reduction – constraint satisfaction - Means-end analysis.
	BLOCK 2 : KNOWLEDGE REPRESENTATION
4	**Knowledge representation issues**: Representations and mappings -Approaches to Knowledge representations -Issues in Knowledge representations - Frame Problem.
5	**Using Predicate logic**: Representing simple facts in logic – Representing Instance and ISA relationships - Computable functions and predicates - Resolution.
6	**Representing knowledge using rules**: Procedural Vs Declarative knowledge – Logic programming - Forward Vs Backward reasoning - Matching – Control knowledge.
	SOFT COMPUTING
	BLOCK 3: INTRODUCTION
7	**Introduction:** Soft Computing Constituents – Soft Computing Vs Hard Computing – Characteristics – Applications.
8	**Artificial Neural Network (ANN):** Fundamental Concept – Application Scope - Basic Terminologies – Neural Network Architecture – Learning Process.
9	**ANN model:** McCulloch-Pitts Model –Linear Separability -Hebb Network.
	BLOCK 4: FUZZY LOGIC
10	**Fuzzy Sets:** Basic Concept – Crisp Set Vs Fuzzy Set - Operations on Fuzzy Set – Properties of Fuzzy Sets
11	**Fuzzy Relations:** Concept – Fuzzy Composition – Fuzzy Equivalence and Tolerance Relation
12	**Membership Functions:** Features – Fuzzification – Methods of Membership value assignments – Defuzzification – Methods.
	BLOCK 5 : GENETIC ALGORITHM
13	**Genetic Algorithm:** Fundamental Concept – Basic Terminologies – Traditional Vs Genetic Algorithm - Elements of GA - Encoding - Fitness Function.

14	**Genetic Operators:** Selection – Cross Over - Inversion and Deletion - Mutation – Simple and General GA - The Schema Theorem - Classification of Genetic Algorithm -– Genetic Programming – Applications of GA.

Reference and Text Books:

1. Elaine Rich and Kevin Knight (2008)," *Artificial Intelligence*", Tata McGraw Hill, Third Edition, Publishers company Pvt Ltd.
2. Jang J.S.R., C.T. Sun, E. Mizutani (2015), "*Neuro-Fuzzy and Soft Computing*", Pearson.
3. Rajasekaran .S, G.A.V. Pai (2017), "*Neural Networks, Fuzzy Logic,Genetic Algorithms",* second edition, Prentice Hall India.
4. Sivanandam S.N., S.N. Deepa (2011), "*Principles of Soft Computing*", 2nd edition, Wiley India.
5. Venugopal C.K (2019), *Artificial Intelligence and Machine Learning*, Pacific Books International.

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Course Code	Title of the Course	Credits	Hours
31543	**BIG DATA ANALYTICS AND R PROGRAMMING**	**4**	**12**

Course Objective:

- Able to understand the characteristics of Big Data.
- Student will learn how to use R for effective data analysis
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Course Requirement:

- Basic Knowledge about data mining and programming

Course Outcome:

- Understood the importance of Big Data Analytics and social networks
- Learn the R data structures, packages and objects for data analytics

Unit No.	Contents
	BIG DATA
	BLOCK 1 : BIG DATA
1	**Introduction:** Big Data Characteristics- Types of Big Data- Traditional Versus Big Data Approach.
2	**Technologies** Available for Big Data - Infrastructure for Big data – Use of data analytics – Big data Challenges - Desired Properties of a Big Data System -
3	**Hadoop –** Introduction - What is Hadoop? - Core Hadoop Components – Hadoop Ecosystem - Physical Architecture – Hadoop Limitations.
	BLOCK 2 : MapReduce
4	MapReduce and The New Software Stack- MapReduce- Algorithms Using MapReduce
5	Finding Similar Items – Introduction - Nearest Neighbor Search - Applications of Nearest Neighbor Search- Similarity of Documents
6	Collaborative Filtering as a Similar-Sets Problem - Recommendation Based on User Ratings- Distance Measures.

	BLOCK 3: NoSQL
7	What is NoSQL? - NoSQL Business Drivers - NoSQL Case Studies - NoSQL Data Architectural Patterns
8	Variations of NoSQL Architectural Patterns - Using NoSQL to Manage Big Data
	R PROGRAMMING
	BLOCK 4: Introduction to R Programming
9	Introduction to R – History of R - Features of R - Essentials of the R language – R-Environment setup – Basic syntax: command prompt, script file, comments. Data types - Variables – operators: operator types -expressions.
10	Control statements – Decision making- if – if-else – nested if - switch– loops – repeat- while – for – loop control statements - break – next statement.
11	Functions: function definition -function components –built-in functions – user defined function - calling function - Recursion - Strings: Rules of strings - string manipulation.
	BLOCK 5: OBJECTS AND PACKAGES
12	**Objects:** Vectors – Vector creation – Vector Manipulation – Lists: Creating a list, naming, accessing, manipulating list elements- merge list -converting list to Vector – Arrays- Names columns and rows – Accessing array elements, manipulating array elements – operations of array elements-
13	**Matrices** – Accessing elements of Matrix – operations on matrix– Factors – Frames – Create data frames - getting the structure of data frame- Extract data from data frame
14	**Packages** – available R packages - install a new package – load package to library - Data reshaping – joining columns and rows in a data frame- merging dt frames – melting and casting.

Reference and Text Books:

1. Andrie de Vries, Joris Meys(2016), *R Programming for Dummies,* 2nd edition, Wiley.
2. DT Editorial Services (2016), "*Black Book- Big Data (Covers Hadoop 2, MapReduce, Hive, Yarn, PIG, R, Data visualization)*", Dream tech Pressedition.
3. Mark Gardener(2013), *Beginning R The Statistical Programming Language*, Kindle edition.
4. Rajendra B. Patil (2017) , HirenDand & Rupali Dahake, *A practical Approach to R*, First edition , Shroff/X-Team.
5. Radha Shankarmani, M Vijayalakshmi (2016), "*Big Data Analytics*", second Edition, Wiley Publications.
6. Scott Burger(2018), *Introduction to Machine Learning with R: Rigorous Mathematical Analysis*, Shroff/O'Reilly.
7. Seema Acharya, Subhashini Chellappan (2016), "Big Data and Analytics", first edition, Wiley Publication.

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Course Code	Title of the Course	Credits	Hours
31544	**MOBILE APPLICATION DEVELOPMENT**	**4**	**12**

Course objective:

- To provide an overall knowledge about mobile devices, communication methodologies and its application development

Course outcome:

- Able to know mobile ecosystem, mobile information architecture
- Able to know J2ME architecture and development and case studies

Unit No.	Contents
	BLOCK 1: MOBILE ECOSYSTEM
1	Introduction: The mobile ecosystem, operators, networks
2	Devices : platforms, operating systems
3	Applications : application frameworks, applications, services
	BLOCK 2 : MOBILE DEVICE PROFILES
4	Categories : SMS, mobile websites, mobile web widgets
5	Native applications: Games, utility apps, location based services(LBS)
6	Apps : Informative apps, Enterprise apps
	BLOCK 3 : MOBILE INFORMATION ARCHITECTURE
7	Introduction : sitemaps, click streams, wireframes, prototyping, architecture
8	Mobile design : Interpreting design, Elements of mobile design
9	Mobile design tools : Designing for different device/ screens
	BLOCK 4 : J2ME
10	Introduction : J2ME architecture and development environment, small
	computing device requirements, Run-time environment, MIDlet programming
11	Languages : J2ME, J2ME SDK, J2ME wireless toolkit
	BLOCK 5 : CASE STUDY
12	Introduction : Google Android introduction, Android development Environment
13	Development framework, SDK, Eclipse, Emulator, Android AVD
14	Project framework: Apple IOS, RIM Blackberry, Samsung Bada, Nokia
	Symbian, Microsoft windows phone

Reference and Text Books

1. Brian Fling(2009), *Mobile Design and Development*, OReilly media.
2. James Keogh, J2ME (2003), *The Complete Reference*, Tata McHill.
3. Mark L.Murphy (2009), *Beginning Android*", Apress.
4. Pei zheng and Lionel Ni (2006), *Smart phone and Next Generation Mobile Computing*, Elsevier.

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Course Code	Title of the Course	Credits	Hours
31545	**PROJECT WORK**	**10**	**-**

Course Objective:

- To provide practical training on some live projects that will increase capability to work on actual problem in industry.
- To undergo in an industrial environment or may be an in house training on some latest software which is in high demand in market and it will be useful for their future employment in industry.
-

Course Requirement:

- Basic concepts of Web and C/ Java /VB /ASP .NET programming

Course Outcome:

- Explore markup languages features and create interactive web pages
- Able to design front end web page and connect to the back end databases.
- Able to study, design, develop , implement and maintain software applications

Instructions

- *Design, develop and implement project work based on latest cutting edge technologies using latest software's.*
- *Do the project under the supervision of Madhya Pradesh Bhoj Open university recognized supervisor.*
- *Submit the project report documentation (2 copies)*

The **layout guidelines** for the Project & Seminar Report:

A4 size paper
Font: Arial (10 points) or Times New Roman (12 points)
Line spacing: 1.5 Top & bottom margins: 1 inch/ 2.5 cm
Left & right margins: 1.25 inches/ 3 cm

The project report composed of the following sections;

Title Page
Student declaration
Certificate
Acknowledgement
Table of contents
Abstract of the project
Introduction
SYSTEM STUDY
Identify the Problem (Aim & Objectives) Problem description
Scope of the Problem
Motivation
Identify the existing system and its Limitations, Feasibility study Proposed system to overcome limitations
SYSTEM DESIGN
Prepare Input / Output Design, Prepare Form Design
Prepare software design
(UML Diagram, Data Dictionary, Use case, Activity diagram, E-R diagram)
SYSTEM DEVELOPMENT
System Development and Implementation the project
SYSTEM TESTING
System testing methods SYSTEM MAINTENANCE
System maintenance of the project
CONCLUSION
The conclusion is often thought of as the easiest part of the paper but should by no means be disregarded. There are a number of key components which should not be omitted. These include:
a) Summary of question posed
b) Summary of findings
c) Summary of main limitations of the study at hand
d) Details of possibilities for related future research
REFERENCES

APPENDIX

Sample Source Code
Reports/Screen
Layouts

Reference Books and text books:

1. Ali Bahrami (2008), *Object Oriented System Development,* Tata McGraw Hill Edition.
2. Elias, M Award (2010), *System analysis and design*, second edition, Galgotia Publications Pvt Ltd.
3. Grady Booch, Robert A.Maksimchuk et.al (2009), *Object Oriented Analysis and Design with applications*, 3rd Edition, Pearson Education.
4. Ivar Jacobson(2004), *Object Oriented Software Engineering: A Use Case Driven Approach*, Addison wesley.
5. James Rumbaugh et.al (2006), *Object Oriented Modeling and Design*, Addison Wesley.
6. Larman (2003), Applying UML & Patterns, *An Introduction to Object Oriented Analysis and Design*,2nd Edition, Pearson Education.
7. Martin Fowler, Kendall Scott (2004), UML, Distilled Addison Wesley.

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MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT (PPR)

BACHELOR OFCOMPUTER APPLICATIONS
(B.C.A)

submitted to

UGC, Distance Education Bureau (DEB),

New Delhi

Table of contents

MADHYA PRADESH BHOJ OPEN UNIVERSITY, BHOPAL (MPBOU)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)
Credit Based Curriculum System (CBCS)(Academic Year 2023 -2024 Onwards)

(a) Programme Mission and Objectives Mission

Mission is to offer excellent career opportunities in various industries including Corporate sector, government organizations, academia and software development companies in the areas of System analysis/design/developments/supports, mobile application programming, game programming, web and e-commerce development, database administration, software testing, education and training etc.

The Programme thrust is on giving the students a thorough and sound background in theoretical and skill-oriented courses relevant to the latest computer software application development.

Programme Objectives:

- ✓ Discover, investigate the requirements of a problem and find the solution to them usingcomputing principles.
- ✓ Create and evaluate a computer-based system, components and process to meet the specificneeds of applications.
- ✓ Utilize current techniques and tools necessary for complex computing practices.
- ✓ Develop and integrate effectively system-based components into user environment.
- ✓ Identify the need and develop the skill to employ in learning as a computing professional inIT and ITES.
- ✓ Execute effectively in a team environment to achieve a common goal.
- ✓ Classify opportunities and use innovative ideas to create value and wealth for the bettermentof the individual and society.
- ✓ Proficiency in developing application with required domain knowledge.
- ✓ To facilitate learners to nurture skills to practice their professions competently to meet theever-changing needs of society such as Digital India, Safety and Privacy.

(b) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

This programme is aligned with HEI's and Madhya Pradesh Bhoj Open University mission and goals to be offeredthrough distance mode to reach quality higher education to the unreachable and/or rural learners. Higher education in Computer Science offered through distance mode meets the mission of HEI's like digital India and e-cash transaction will enrich the Human resources for the uplift of the nation.

(c) Nature of prospective target group of learners

The nature of prospective target group of learners is graduates from various disciplines like Commerce, Mathematics, Physics, Chemistry, Biology, Electronics, and Engineering etc. It also includes the learners who want to become entrepreneurs (self-engagement) like Web Designers, Software Developers, BPO's, KPO' and Network managers/administrators. After BCA the learner can opt for higher studies like M.Tech and Ph.D. Learners interested in Joining IT firms Software, Digital Marketing, System analyst and Web Developments.

(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

Bachelor ofComputer applications (B.C.A) Programme through Distance Learning mode has been designed to

impart advanced knowledge in various areas of computer applications including i) Knowledge about various kinds of programming languages ii) Digital Logic fundamentals, Operating systems, RDBMS, Data Structure and Software Engineering iii) inter-disciplinary knowledge like Discrete Mathematics and Accounting and Financial Management iv) Concepts like Artificial Intelligence, Soft computing, Big data analytics, R Programming and Internet of Things. v)Cutting Edge Technologies like Mobile application development and .Net Framework.

Besides imparting theoretical knowledge, a lot of stress is laid on hands-on training, practical, project work and overall development of the personality.

The University provides various opportunities to the learners, basically to the poor and rural people to get a high-quality education in the field of Computer Applications, which can fulfill the demand of the society.

(e) Instructional Design

Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.

2. Each student should secure 120 credits to complete Bachelor of Computer applications(B.C.A.) programme.

3. Each theory course carries 4 credits, practical course carries 4 credits and project work carry 10 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

B.C.A Programme code: 315

Courses of Study B.C.A

Part	Paper Code	Title of the paper	Hours / Week	Marks			Credits	
				IA	Exam	Total	Subject	Semester
Part - 1	BCA101T	Indian Language	4	20	80	100	2	16
	BCA102T	English	4	20	80	100	2	
Part – 2	BCA103T	Problem Solving Techniques using C	4	30	70	100	2	
	BCA104T	Digital Electronics	4	30	70	100	2	
	BCA105T	Discrete Mathematics	5	50	100	150	3	
	BCA103P	C Programming Lab	3	15	35	50	1	
	BCA104P	Digital Electronics Lab	3	15	35	50	1	
Part – 3	-	Foundation Course	3	30	70	100	2	
	-	CC & EC		50		50	1	
Part – 1	BCA201T	Indian Language	4	20	80	100	2	16
	BCA202T	English	4	20	80	100	2	
Part - 2	BCA203T	Data structures	4	30	70	100	2	
	BCA204T	Database Management System	4	30	70	100	2	
	BCA205T	Numerical and Statistical Methods	5	50	100	150	3	
	BCA203P	Data Structures Lab	3	15	35	50	1	
	BCA204T	DBMS Lab	3	15	35	50	1	

Part - 3	-	Foundation Course	3	30	70	100	2	
	-	CC & EC	-	50	-	50	1	
Part - 1	BCA301T	Indian Language	4	20	80	100	2	16
	BCA302T	English	4	20	80	100	2	
Part - 2	BCA303T	Object Oriented Programming using C++	4	30	70	100	2	
	BCA304T	Financial Accounting and Management	4	30	70	100	2	
	BCA305T	Operating System	5	50	100	150	3	
	BCA303P	C++ Lab	3	15	35	50	1	
	BCA304T	Accounting Package Lab	3	15	35	50	1	
Part - 3	-	Foundation Course	3	30	70	100	2	
	-	CC & EC	-	50	-	50	1	
Part - 1	BCA401T	Indian Language	4	20	80	100	2	16
	BCA402T	English	4	20	80	100	2	
Part - 2	BCA403T	Visual Programing	4	30	70	100	2	
	BCA404T	Unix Shell programming	4	30	70	100	2	
	BCA405T	Operation Research	5	50	100	150	3	
	BCA403P	Visual Programming Lab	3	15	35	50	1	
	BCA404T	UNIX Lab	3	15	35	50	1	
Part - 3	-	Skill Development Course	3	30	70	100	2	
		CC & EC	-	50	-	50	1	

Part	Paper Code	Title of the paper	Hours / Week	Marks			Credits	
				IA	Exam	Total	Subject	Semester
Part - 2	BCA501T	Data Communication and Networks	4	50	100	150	3	20
	BCA502T	Software Engineering	4	50	100	150	3	
	BCA503T	Computer Architecture	4	50	100	150	3	
	BCA504T	Java Programming	4	30	70	100	2	
	BCA505T	Microprocessor and Assembly Language	4	30	70	100	2	
	BCA504P	Java Programming Lab	3	15	35	50	1	
	BCA505P	Assembly Language Programming Lab	3	15	35	50	1	
	BCA506P	Project	8	50	100	150	3	
Part - 3	-	Skill Development Course	3	30	70	100	2	
Part–2	BCA601T	Theory of Computation	4	50	100	150	3	20
	BCA602T	System Programming	4	50	100	150	3	
	BCA603T	Cryptography and Network Security	4	50	100	150	3	
	BCA604T	Web Programming	4	30	70	100	2	
	BCA604P	Web Programming Lab	3	15	35	50	1	
	BCA605P	Project Work	16	100	200	300	6	
Part – 3	-	Skill Development Course	3	30	70	100	2	

CIA : Continuous Internal Assessment **ESE :** End semester Examination **Max**. Maximum Marks; **C :** Credits; **Hrs** – PCP Hours

Course Code Legend:

3	1	5	S	C

315 – Programme code for Bachelor ofComputer Applications (B.C.A).S - Semester Number;
C – Course Number in the Semester

Detailed Syllabi

- The University has been recommended the following bridge courses for the non-computer science background students covering essential basics required to pursue two-year BCA programme.
    i. Introduction to Information Technology.
    ii. Programming in C.
    iii. Introduction to Database Systems.
    iv. Basics of Computer Networks.
    v. Problem Solving Techniques.
- The detailed Syllabi of study and shall be as shown in Appendix.

Duration of the Programme:

The B.C.A programme shall consist of a period minimum of three years (Six Semesters) andmaximum of five years.

e.3.1 Medium of Instruction

The medium of instruction is only in **English**. The course material is also in **English.**

Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	3
Faculty for Specialization	2
Laboratory Assistant	1
Clerical Assistant	1

*Faculty at least in Assistant Professor Level

Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme are imparted through distance education methodology includes printed SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e- version of the course materials in the form of CD, e-book, e-tutorials, SWAYAM, Massive Open Online Courses (MOOC) courses, NPTEL, Open Educational Resources(OER),audio, video tutorials and virtual lab.

Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and virtual lab.

Student Support Services

The student support services will be facilitated by the MPBOU, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Tamilnadu.The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at MPBOU or Learning centres. The post - admission student

support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face-to-face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University,Bhopal.

(f) Procedure for Admissions, curriculum transaction and evaluationMinimum qualification for admission

Candidates for admission to the first year of the Bachelor of Computer Applications (B.C.A) programme shall be required to have passed the following examinations. Candidates who havepassed;

The candidate should have studied 10+2+3 pattern with Mathematics/Statistics/Business Mathematics in +2 level.

Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power PointPresentations, web-based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containingrequirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in thefollowing manner.

Course Type
Theory courses (12 Hours / course / 4 credits)
Practical courses (120 Hours / course / 4 credits)

Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The endsemester examination for theory and practical is maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook, case studies, review questions, quiz, multiple choice questions etc., for 25 marks.
- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.
- Student should submit assignment for theory and practical courses of every course and semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment:** Model Practical Test	**Marks**
Long and short answer questions, Workbook, case studies, quiz and multiple choice questions.	25	Algorithm Design, flowchart, DFD preparing source code, PL/SQL coding, output, results.	25

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of75 Marks for both theory and practical courses.

Minimum for a pass:

To pass in each course, a candidate is required to secure 50% marks in the End Semester examination and 50% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who do not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of75 Marks.

All the Blocks Should Be Given Equal Importance

Part – A (10 x 2 Marks: 20 Marks) Answer all questions

Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

- Students are required to prepare a separate lab record for each lab course. The practical counsellorshould duly sign this lab record after each session.
- Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.
-

Division of marks in ESE – Practical (Maximum 75 marks)

The end semester practical examination will be conducted in the duration of 3 Hours andmaximum of 75 Marks.

Practical details	**Max. Marks**
Algorithm / Flowchart	10
Source Code	20
Debugging	10
Execution	10
Results	10
Viva-Voce	5
Record Note	10
Total	**75**

Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to IV semester irrespective offailure(s) in the courses of the earlier semesters. The candidate will qualify for the BCA degree onlyif he/she passes all the (including arrears) courses with in a period of FIVE years from the date of admission.

Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicatethe performance of the candidate.

Range of Marks	Grade Points	Letter Grade	Description
96 - 100	10.00	S+	First class – Exemplary
91 - 95	9.5	S	
86 - 90	9.0	D++	First class – Distinction
81 - 85	8.5	D+	
76 - 80	8.0	D	
71 - 75	7.5	A++	First Class
66 - 70	7.0	A+	
61 - 65	6.5	A	
56 - 60	6.0	B	Second Class
50 - 55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_i G_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses Sum of the credit of the courses in the semester

= Sum of [Credit earned x Grade Points] Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n \sum_i C_{ni} G_{ni} / \sum_n \sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme Sumof the credits of the courses for the entire programme

Where

C_i - Credits earned for the course i in any semester G_i – Grade Point earned for course i in any semester

n - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1 – 9.5	S	
8.6 – 9.0	D++	First class with Distinction*
8.1 – 8.5	D+	
7.6 – 8.0	D	
7.1 – 7.5	A++	First Class
6.6 – 7.0	A+	
6.1 – 6.5	A	
5.6 – 6.0	B+	Second Class
5.0 – 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

Fees Structure

Fee Particulars	First Year	Second Year
Admission Processing Fees	300	--
Course Fees	23,100	23,100
ICT fees	150	150
Total Fees	**23,550**	**23,250**

*The above mentioned fees structure is exclusive of examination fees.

Requirement of the laboratory support and library resources Laboratory Support

A well- equipped Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

Library Resources

The MPBOU, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science programmes. The Central library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(g) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment) Honorarium to lesson writers Theory (17xRs.25,000/- per course)	4,45,000/-
Practical (4x Rs. 5000/- per course)	
Programme delivery Printing of study materials (for 500 copies) (21 Courses x Rs 300/- x 500 copies)	31,50,000/-
Programme maintenance (per year) Honorarium to resource persons	5,00,000/-

(h) Quality assurance mechanism and expected programme outcomes:

Quality assurance comprises the policies, procedures and mechanisms which that specifiedquality specifications and standards are maintained.

University's Moto: *' Education for all'*

University's Vision and Mission

Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed intointellectually competent human resources that will help in the uplift of the nation to Educational,

Social, Technological, Environmental and Economic Magnificence (ESTEEM).

University Objectives

1. Providing for instructions and training in such branches of Learning at the university maydetermine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

3. i.4 Quality Policy

Attaining Benchmark Quality in every domain of' PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote

Quality Unleashes Opportunities Towards Excellence (QUOTE).

Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their assignments, internal and end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Expected Programme Outcomes:

- ✓ To widen the ability to plan, analyze, design, code, test, implement & maintain a softwareproduct for real time application development system.
- ✓ To support learners capability to setup their own enterprise in various sectors of Computerapplications.
- ✓ To improve the knowledge of the learners in finding solutions and developing system based applications for real time problems in various domains involving technical, managerial, economical & social constraints.
- ✓ To develop in problem solving and programming skills in the various computing fields of ITindustries.
- ✓ To prepare the learners to pursue higher studies in computing or related disciplines and to work in the fields of teaching and research.

****

FIRST SEMESTER BCA

BCA101T : INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA102T : ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA103T : PROBLEM SOLVING TECHNIQUES USING C

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction to Programming Concepts: Software, Classification of Software, Modular Programming, Structured Programming, Algorithms and Flowcharts with examples. Overview of C Language: History of C, Character set, C tokens, Identifiers, Keywords, Data types, Variables, Constants, Symbolic Constants , Operators in C, Hierarchy of Operators, Expressions, Type Conversions and Library Functions.

[12 Hours]

Unit - II

Managing Input and Output Operation: Formatted and Unformatted I/O Functions, Decision making, branching and looping: Decision Making Statements - if Statement, if–else statement, nesting of if-else statements, else–if ladder, switch statement,?: operator, Looping - while, do-while, for loop, Nested loop, break, continue, and goto statements. Functions: Function Definition, prototyping, types of functions, passing arguments to functions, Nested Functions, Recursive functions.

[12 Hours]

Unit - III

Arrays: Declaring and Initializing, One Dimensional Arrays, Two Dimensional Arrays, Multi Dimensional Arrays - Passing arrays to functions. Strings: Declaring and Initializing strings, Operations on strings, Arrays of strings, passing strings to functions. Storage Classes - Automatic, External, Static and Register Variables.

[12 Hours]

Unit-IV

Structures-Declaring and Initializing, Nested structure, Array of Structure, Passing Structures to functions, Unions, typedef, enum, Bit fields. Pointers – Declarations, Pointer arithmetic, Pointers and functions, Call by value, Call by reference, Pointers and Arrays, Arrays of Pointers, Pointers and Structures. Meaning of static and dynamic memory allocation, Memory allocation functions.

[12 Hours]

Unit-V

Files - File modes, File functions, and File operations, Text and Binary files, Command Line arguments. C Preprocessor directives, Macros – Definition, types of Macros, Creating and implementing user defined header files.

[12 Hours]

TEXT BOOKS

1. E. Balaguruswamy, “Programming In ANSI C”, 4th edition, TMH Publications, 2007
2. Ashok N. Kamthane, “Programming with ANSI and Turbo C”, Pearson Education, 2006

REFERENCES BOOKS

1. Ashok N. Kamthane et. al., "Computer Programming and IT", Pearson Education, 2011
2. Mahapatra, " Thinking In C ", PHI Publications, 1998.
3. Yashwant Kanetkar, "Let Us C", 13th Edition, PHP, 2013.

BCA104T: DIGITAL ELECTRONICS

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction to network theorems and AC fundamentals: Ohm's law: Statement, explanation. Kirchhoff's law: Statement & explanation of KCL and KVL. Mesh/loop analysis (up to 2 loops) and node voltage method, Numerical problems. Delta/star and star/Delta transformation: No derivation for Interco version equations, introduction of network, port of network (one port network, two port network), unilateral network, bilateral network, linear network. Need for application of network theorems. (DC Circuits only). Superposition theorem: statement, (only with TWO voltage sources) steps to apply the theorem explanation by considering a simple resistive network and problems. Thevenin's theorem: Statement, (Only with ONE voltage source) Steps to apply the theorem, explanation by considering a simple resistive networking and problems. Norton's theorem: Statement, (Only with ONE voltage source) steps to apply the theorem, explanation by considering a simple resistive network and problems. Maximum power transfer theorem: Statement, explanation of theorem by considering a simple resisting network, expression for maximum power deliver (P L (max) =Vth2/4Rth) (no derivation), graph of Vs Pl, numerical problems and applications. Reciprocity theorem, Statement, explanation using resistive network with dc source and numerical problems. AC Fundamentals: Representation of ac sine wave, instantaneous value, peak value, peak to peak value, average value, r.m.s value cycle, time period, frequency. (No derivations, only mention the expressions) Representation of non sinusoidal waves.

[12 Hours]

Unit - II

Semiconductor Devices: Introduction, atomic structure, energy level, energy band diagram in solids, classification of conductors, insulators and semiconductors. Semiconductor, properties, crystal structure of semiconductor, types – intrinsic and extrinsic semiconductor. Intrinsic semiconductor: Crystal structure (Ge& Si), thermal generated charges (electron and holes) carriers the effect temp on their motion. Extrinsic semiconductor: Doping, donor acceptor impurities, c-type, p-type semiconductor, majority and minority carriers, their currents, concept of immobile ions. Semiconductor devices : PN junction diode, formation of pn junction layer, potential barrier, energy level diagram of pn junction, Biasing of pn junction, behaviour of pn junction under forward and reverse biasing, break down in pn junction, avalanche and zener break down. Diode characteristics; V-I characteristic, forward and reverse bias, diode parameters, bulk resistance, knee voltage, static and dynamic resistance, PIV. Application of diode; As a rectifier, as logic gate, as a switch, etc. Rectifier, types, Half wave Full wave. Half wave rectifier: Circuit, working, wave forms and expression for ripple factor and efficiency (no derivation), advantages & disadvantages. Bridge wave rectifier: Circuit, working, wave forms and expressions for ripple factor and efficiently (no derivation), advantages & disadvantages. Logic families: Scale of integration, Digital IC's, classifications, DTL, TTL, ECL, MOS, CMOS, Mention of features: speed of operation, power dissipation, propagation delay, fan-in, fan-out. [12 Hours]

Unit – III

Number Systems: Introduction to number systems – positional and non-positional, Base /Radix. Decimal number system-Definition, digits, radix/base, Binary number system – Bit Byte, Conversions: Binary to Decimal and Decimal to Binary. Octal number system-Conversion from Octal to Decimal to Octal, Octal to Binary and binary to Octal. Hexadecimal number system –Conversion : Decimal to Hex, Hex to decimal, Hex to Binary, Binary to Hex, Octal to Hex, Hex to Octal, Binary, arithmetic –binary addition, subtraction, multiplication and division (only Integer part). 1's and 2's compliment: 2's complement subtraction. Binary code: BCD numbers, 8421 code, 2421 code- examples and applications. Gray code –Conversions-Gray to binary and Binary to Gray, application of gray code (Mention only). Excess-3 code – self complimenting property and applications. Definition and nature of ASCII code. Introduction to error detection and correction code, parity check. Boolean algebra:-Laws and theorems. AND, OR, NOT Laws, Commutative law, associative law, distributive law, Duality theorem. Demorgan's theorems-Statements, proof using truth tables; Simplification of Boolean expressions using Boolean laws. Definition of product term, sum term, minterm, maxterm, SOP, standard POS and Standard POS. Conversion of Boolean expression to Standard SOP and Standard POS forms. Karnaugh maps-Definition of Karnaugh map, K- map for 2, 3 and 4 variables. Conversion of truth tables into k-map grouping of cells, redundant groups and don't care conditions Karnaugh map technique to solve 3 variable and 4 variable expressions. Simplification of 3 and 4 variable Boolean expression using K-maps (SOP only)

[12 Hours]

Unit - IV

Logic Gates: AND Gate: Definition, symbol truth table, timing diagram, Pin diagram of IC 7408. OR Gate: Definition, symbol, truth table, timing diagram of IC 7432. NOT Gate: Definition symbol, truth table, timing diagram, Pin diagram of IC 7404. NAND Gate: Definition, symbol, truth table, Pin diagram of IC 7400, NOR Gate: Definition, symbol, truth table, timing diagram, Pin diagram of IC 7402. Exclusive OR Gate: Definition, symbol, truth table, timing diagram. Combinational logic circuits: Definition, applications. Half Adder: Symbol, Logic circuits using XOR and basic gates, Truth table, Full Adder: Symbol, Logic circuits using XOR and basic gates, Truth table, Half Subtractor: Symbol, Logic circuits using XOR and basic gates, Truth table. Full Subtractor: Symbol, Logic circuits using XOR and basic gates, Truth table. Adder – Subtractor; Logic circuit, Pin diagram IC 7483, IC 7486. Parallel Adder: 4 –bit parallel binary adder, BCD adder, IC 7483 NAND –NOR implementation of Adders.

[12 Hours]

Unit - V

Sequential Circuits: Importance of clock in digital circuit and introduction to flip flop. Flip –flop-difference between latch and flip-flop. Qualitative study of level and edge triggering. RS latch /unlocked, symbol and truth table. RS flip-flop using NAND gate, symbol, truth table and timing diagram. D flip –flop – Symbol, truth table, Realization of JK flip –flop using NAND gates, working, and timing diagram. Race around condition, present and clear inputs, pin diagram of IC 74112. T flip flop-Logic symbol, JK flip flop as a T flip –flop truth table and timing diagram. Master slave flip flop; Logic circuit, truth table and timing diagram, advantage of M/S flip-flop, pin diagram of IC 7473 IC 7476. Registers: Definition, types of registers-Serial in serial out, serial in parallel out, Parallel in serial out, Parallel in parallel our shift register (Block diagram representation for each), truth table, timing diagram and speed comparison.

[12 Hours]

Text Books:

1) Thomas L.Floyd ,''Digital Fundamentals", Peason Education Inc, New Delhi, 2003

Reference Books:

1) Morris Mano, "Digital Design", 5Th Edition, Prentice Hall, 2013
2) R.P.Jain, "Modern Digital Electronics", 3rd Edition, Tata Mc Graw Hill, 2003.
3) Bignell and Donovan, "Digital Electronics", 5th Edition, Thomson Publication, 2007.

BCA105T: DISCRETE MATHEMATICS

Total Teaching Hours: 65 No of Hours / Week: 05

Unit – I

Sets, Relations and Functions: Sets, Subsets, Equal Sets, Universal Sets, Finite and Infinite Sets, Operation on Sets, Union, Intersection and Complements of Sets, Cartesian Product, Cardinality of Set, De-mogan's law, Simple Applications. Relations, Properties of Relations, Equivalence Relation, Function: Domain and Range, Onto, Into, One to One, one to many Functions, Composite and Inverse Functions. Mathematical Logic: Proposition and truth values, Logical Connectives and their truth tables, Converse, Inverse and Contrapositive, Tautology and Contradiction, Logical Equivalence – Standard Theorems, Switching Circuits.

[13 Hours]

Unit - II

Matrices: Review of fundamentals: Definition of matrix, order, Types of matrices: zero, row, column, square, diagonal, scalar, unit, symmetric, skew-symmetric. Determinant: Value of determinant of order 2x2, 3x3, minors, cofactors, adjoint, inverse of a matrix. Solutions of linear equations: Cramers rule and matrix method involving two and three variables. Eigen values and Eigenvectors: Characteristic equation, characteristic roots, characteristic vectors (without any theorems) only 2x2 order. Cayley Hamilton theorem. (Only statement), verification of Cayley Hamilton theorem (only 2x2 matrices), using the same finding the powers of A (A^4, A^5, A^{-1}, A^{-2}), Inverse of a Matrix using Cayley-Hamilton theorem.

[13 Hours]

Unit - III

Logarithms: Definition of Logarithm, Indices leading to Logarithms and vice versa, Laws of Logarithms with proofs, Problems, Common Logarithm: Characteristic and Mantissa, Use of Logarithmic Tables, Problems. Permutation and Combination: Fundamental Principle of Counting, Factorial n, Permutations: Definition, Examples, Derivation of Formula ${}^nP_r$, Permutation when all the objects are not distinct, Problems, Combinations: Definition, examples, Proving ${}^nC_r = {}^nP_r\ r!$, ${}^nC_r = {}^nC_{n-r}$, ${}^nC_r + {}^nC_{r-1} = {}^{n+1}C_r$, Problems based on above formulae.

[13 Hours]

Unit - IV

Groups: Binary operation, Define of group, properties (only statement), problems (both finite and infinite groups), subgroup, theorems (no proof), problems. Vectors: Definition of vector and scalar, vector addition, dot and cross product, projection of a vector on the other (no geometrical meaning), area of parallelogram, area of a triangle, scalar triple product, volume of parallelepiped, co planarity of three vectors, vector triple product.

[13 Hours]

Unit - V

Analytical Geometry in Two Dimensions: Coordinates, Distance formula, Section Formula, Area of the Triangle formula (no derivation), Locus of point. Straight Line: Slope of a line and angle between two lines, Various forms of equations of lines – Derivation and Problems. Equation of family of lines passing through the point of intersection of two lines, Distance of a point from line (only problems).

[13 Hours]

Text Books

1. Grewal, B.S.Higher engineering Mathematings, 36th Edition

Reference Books

1. Satyrs S.S, Engineering Mathematics.
2. Peter V.O'Neil. Advanced Engineering Mathematics, 5th Edition.

BCA103P: C PROGRAMMING LAB

PART – A

1) Write a C Program to find the roots of the given quadratic equation using if-else if statement.
2) Write a menu driven C program using switch-case to find: (a) Sum of the digits of number (b) Factorial of N.
3) Write a C program to find cos (x) using series $\cos(x) = 1 - x^2/2! + x^4/4! - \ldots\ldots\ldots x^n/n!$]
4) Write a Program to find whether a given number is prime number are not
5) Write a C program to arrange the given set of numbers in ascending and descending order.
6) Write a C program to find product of two N x M matrices.
7) Write a C program to calculate NCR= N!/ R! * (N-R)! Using function.
8) Write a C program to display Fibonacci series using recursive function.
9) Write a C program to concatenate two strings using pointers.
10) Write a C program to copy content of one file to another file.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA104P: DIGITAL ELECTRONICS LAB

1. Study of Logic Gates–AND, OR, NOT, NAND, NOR XOR (Using respective ICs)
2. Realization of AND, OR and NOT gates using Universal Gates.

3. Design and Realization of Half Adder/Subtracted using NAND Gates.
4. Design and Realization of Full Adder using Logic Gates.
5. Design and Realization of 4 bit Adder/Subtractor using IC 7483.
6. Design and Realization of BCD Adder using IC 7483.
7. Realization of J-K flip flop using IC 7400 and 7410.
8. Realization of T and D flip flop using IC 7476.
9. Implementation of PIPO Shift Registers using flip flops. (IC 7476).
10. Design and implementation of odd and even parity checker Generator using IC 74180.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

SECOND SEMESTER BCA

BCA201T: INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA202T: ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA203T: DATA STRUCTURES

Total Teaching Hours : 60 No of Hours / Week : 04

Unit-I

Introduction and Overview: Definition, Elementary data organization, Data Structures, data structures operations, Abstract data types, algorithms complexity, time-space tradeoff. Preliminaries: Mathematical notations and functions, Algorithmic notations, control structures, Complexity of algorithms, asymptotic notations for complexity of algorithms. String Processing: Definition, Storing Stings, String as ADT, String operations, word/text processing, Pattern Matching algorithms.

[12 Hours]

Unit-II

Arrays: Definition, Linear arrays, arrays as ADT, Representation of Linear Arrays in Memory, Traversing Linear arrays, Inserting and deleting, Sorting: Bubble sort, Insertion sort, Selection sort, Searching: Linear Search, Binary search, Multidimensional arrays,

Matrices and Sparse matrices.

[12 Hours]

Unit-III

Linked list: Definition, Representation of Singly linked list in memory, Traversing a Singly linked list, Searching a Singly linked list, Memory allocation, Garbage collection, Insertion into a singly linked list, Deletion from a singly liked list; Doubly liked list, Header liked list, Circular linked list.

[12 Hours]

Unit-IV

Stacks – Definition, Array representation of stacks, Linked representation of stacks, Stack as ADT, Arithmetic Expressions: Polish Notation, Application of Stacks, Recursion, Towers of Hanoi, Implementation of recursive procedures by stack. Queues – Definition, Array representation of queue, Linked list representation of queues Types of queue: Simple queue, Circular queue, Double ended queue, Priority queue, Operations on Queues, Applications of queues.

[12 Hours]

Unit-V

Graphs: Graph theory terminology, Sequential representation of Graphs: Adjacency matrix, traversing a Graph. Tree – Definitions, Binary trees, Representing binary trees in memory, Traversing Binary Trees, Binary Search Trees, Searching, Inserting and Deleting in a Binary Search Tree.

[12 Hours]

TEXT BOOKS

1. Seymour Lipschutz, "Data Structures with C", Schaum's outL*ines*, Tata McGraw-Hill, 2011.

REFERENCES BOOKS

1. Mark Allen Weiss, "Data Structures and Algorithm Analysis in C", Second Edition, Pearson Education, 2013.
2. Robert Kruse, C.L.Tondo, Bruce Leung, Shashi Mogalla, "Data Structures and Program Design using C", Pearson Education, 2009.
3. Forouzan, "A Structured Programming Approach using C", 2nd Edition, Cengage Learning India, 2008.

BCA204T : DATA BASE MANAGEMENT SYSTEMS

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction: Database and Database Users, Characteristics of the Database Approach, Different people behind DBMS, Implications of Database Approach, Advantages of using DBMS, When not to use a DBMS. Database System Concepts and architecture: Data Models, Schemas, and Instances. DBMS Architecture and Data Independence., Database languages and interfaces. The database system Environment, Classification of DBMS.

[12 Hours]

Unit - II

Data Modelling Using the Entity-Relationship Model: High level conceptual Data Models for Database Design with and example., Entity types, Entity sets, attributes, and Keys, ER Model Concepts, Notation for ER Diagrams, Proper naming of Schema Constructs, Relationship types of degree higher than two. Record Storage and Primary File Organization: Secondary Storage Devices. Buffering of Blocks. Placing file Records on Disk. Operations on Files, File of unordered Records (Heap files), Files of Ordered

Records (Sorted files), Hashing Techniques, and Other Primary file Organization.

[12 Hours]

Unit - III

Functional Dependencies and Normalization for Relational Database: Informal Design Guidelines for Relational schemas, Functional Dependencies, Normal Forms Based on Primary Keys., General Definitions of Second and Third Normal Forms Based on Primary Keys., General Definitions of Second and Third Normal Forms, Boyce-Codd Normal Form. Relational Data Model and Relational Algebra: Relational Model Concepts., relational Model Constraints and relational Database Schema, defining Relations, Update Operations on Relations., Basic Relational Algebra Operations, Additional Relational Operations., Examples of queries in the Relational Algebra., Relational Database design Using ER-to-Relational Mapping.

[12 Hours]

Unit – IV

Relational Database Language: Data definition in SQL, Queries in SQL, Insert, Delete and Update Statements in SQL, Views in SQL, Specifying General Constraints as Assertions, specifying indexes, Embedded SQL. PL /SQL: Introduction.

[12 Hours]

Unit - V

Transaction Processing Concepts: Introduction, Transaction and System Concepts, Desirable properties of transaction, Schedules and Recoverability, Serializability of Schedules, Transaction Support in SQL, Locking Techniques for Concurrency Control, Concurrency Control based on time stamp ordering.

[12 Hours]

Text book:

1. Remez Elmasri and Shamkant B. Navathe, "Fundamentals of Database Systems", 5th Edition, Pearson Education, 2007.

References:

1. Abrahamsi. Silberschatz, Henry. F. Korth, S. Sudarshan, "Database System Concepts" 6th Edition, McGraw Hill, 2012.
2. C.J.Date, "Introduction to database systems", Eight Edition, Addison Wesley, 2003.

BCA205: NUMERICAL AND STATISCAL METHODS

Total Teaching Hours: 65 No of Hours / Week : 05

Unit - I

Floating-point representation and errors-Normalized floating-point forms, Errors in representing numbers, Floating point machine number and machine epsilon, Loss of significance and its avoidance. Roots of equations-locating roots of f(x)=0 Bisection method, Newton's method, Secant method.

[13 Hours]

Unit - II

Interpolation and numerical differentiation-polynomial interpolation, Lagrange and Newton form of interpolating Polynomial, Divided difference and recursive property, Inverse interpolation, First and Second derivative formulae via interpolation Polynomials. Numerical integration-Trapezoidal, Simpson's and adaptive Simpson rules.

[13 Hours]

Unit - III

System of linear equations-Gaussian elimination and back substitution-partial and complete pivoting, Doolittle, Cholesky and Crout LU decomposition methods, Jacobi and

Gauss – Seidel iterative methods. Power (and inverse power) method of obtaining largest (smallest) eigenvalue and corresponding eigenvector. Ordinary differential equations-initial value problem, Picard's, Taylor series, Runge-Kutta first, second and fourth order methods.

[13 Hours]

Unit – IV

Basics concepts and definition of statistics. Mean, Standard deviation, coefficient of Variation, skewness & kurtosis, Carl Pearson Correlation, Rank correlation and illustrated examples. Probability: Basic concept and definition of probability, probability axioms, Laws of Probability, Conditional probability, Bayes theorem , Problems and application.

[13 Hours]

Unit - V

Random variable and Expectation: Discrete and continuous random variables, expectation of random variables, theorems on expectation, illustrative examples. Probability Distribution: Probability function, Probability mass/density function, Discrete Distribution – Bernoulli, Binomial Distribution, Continuous distribution – Normal Distribution, applications and problems.

[13 Hours]

Text Books:

1. M.K.Jain, SRK Iyengar and R.K. Jain Numerical methods for Scientific and Engineering Computation: Wiley Eastern.
2. Ronald E Walpole & Raymond H Meyers : Probability & Statistics for Engineers and Scientists (Second Edition).

References

1. J.Medhi : Statistical Methods New Age Publications.
2. S.C.Gupta and V.K.Kapoor – Elements of Mathematics, Statistics, Sultan Chand and Sons.

BCA203P : DATA STRUCTURES USING C

LABPART - A

1. Write a menu driven C program to perform the following string operations without using string functions: (i) String Length (ii) String Concatenation (ii) String Reverse
2. Write a C program to search for an element in an array using Binary search
3. Write a C program to sort a list of N elements using Selection Sort Algorithm.
4. Write a C program to construct a singly linked list and perform insertion, deletion and Display operations.
5. Write a C program to demonstrate the working of stack using liked list.
6. Write a C program for Towers of Hanoi problem.
7. Write a C program to find GCD of two numbers using recursion
8. Write a C program to convert infix arithmetic expression to post fix expression.
9. Write a C program to simulate the working of Circular Queue using an array.
10. Write a C program to create and traverse a binary search tree.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write two the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA304P: DATABASE MANAGEMENT SYSTEM LAB
PART - A

1. The STUDENT detail databases has a table with the following attributes. The primary keys are underlined. STUDENT(regno: int, name: string, dob: date, marks: int)

i) Create the above table.

ii) Remove the existing attributes from the table.

iii) Change the date type of regno from integer to string.

iv) Add a new attribute phoneno to the existing table.

v) Enter five tuples into the table.

vi) Display all the tuples in student table.

2. A LIBRARY database has a table with the following attributes.

LIBRARY(bookid:int, title:string, author:string, publication:string, yearpub:int, price:real)

i) Create the above table.

ii) Enter the five tuples into the table

iii) Display all the tuples in student table.

iv) Display the different publishers from the list.

v) Arrange the tuples in the alphabetical order of the book titles.

vi) List the details of all the books whose price ranges between Rs. 100 and Rs. 300

3. The SALARY database of an organization has a table with the following attributes.

EMPSALARY(empcod:int, empnamee:string, dob:date, department:string, salary:real)

i) Create the above table.

ii) Enter the five tuples into the table

iii) Display all the number of employees working in each dapartment.

iv) Find the sum of the salaries of all employees.

v) Find the sum and average of the salaries of employees of a particular department.

vi) Find the least and highest salaries that an employee draws.

4. Consider the insurance database given below. The primary keys are underlined and the data types are specified.

PERSON(driver-id-no: string, name: string, address:strong)

CAR(regno: string, model: string, year: int)

ACCIDENT(report-no: int, date: date, location: String)

OWNS(driver-id-no: string, regno: string)

PARTICIPATED(driver-id-no: string, regno: string, report-no: int, damage-amount: int)

i) Create the above tables by properly specifying the primary keys and the foreign keys

ii) Enter atleast five tuples for each relation.

iii) Demonstrate how you

   a) Update the damage amount for the car with a specific regno in the accident with report no 12 to 25000.

   b) Add a new accident to the database.

iv) Find total number of people who owned cars that were involved in accidents in 2002

v) Find the number of accidents in which cars belonging to a specific model were involved

5. Consider the following database of students enrollment in courses and books adopted for each course.

STUDENT(regno: string, name: string, major: strong, bdate: date)

COURSE(course-no: int cname: string, dept: string)

ENROLL(reg-no: string, course-no: int, sem: int, marks: int)

BOOK-ADOPTION(course-no: int, sem: int, book-isbn: int)

TEXT(book-isbn: int, book-title: string, publisher: string, author: string)

i) Create the above tables by properly specifying the primary keys and the foreign keys

ii) Enter atleast five tuples for each relation.

iii) Demonstrate how you add a new text book to the database and make this book be adopted by some department.

iv) Produce a list of text books (include Course-no, book-isbn, book-title) in the alphabetical order for courses offered by the 'Compute Science' department that use more than two books.

v) List any department that has all its adopted books published by a specific publisher.

6. The following tables are maintained by a book dealer

AUTHOR(author-id: int, name: string, city: string, country: string)

PUBLISHER(publisher-id: int name: string, city: string, country: string)

CATLOG(book-id: int, title : string, author-id: int, publisher-id: int, category: int, year: int, price: int)

CATEGORY(category-id: int, description: string)

ORDER-DETAILS(order-no: int, book-id: int, quantity: int)

i) Create above tables by properly specifying the primary keys and the foreign keys.

ii) Enter atleast five tuples for each relation.

iii) Give the details of the authors who have 2 or more books in the catalog and the price of the books is greater than the average price of the books in the catalog and the year of publication is after 2010.

iv) Find the author of the book which has maximum sales.

v) Demonstrate how to increase price of books published by specific publisher by 10%

7. Consider the following database for BANK.

BRANCH(branch-name: string, branch-city: string, assets: real)

ACCOUNT(accno: int, banch-name: string, balance: real)

DEPOSITOR(customer-name: string, accno: int)

CUSTOMER(customer-name: string, customer-street: string, customer-city: string)

LOAN(loan-no: int, branch-name: string, amount: real)

ORROWER(customer-name: string, loan-no: int)

i) Create the above tables by properly specifying the primary keys and foreign keys.

ii) Enter atleast five tuples for each relation.

iii) Find all the customers who have atleast two accounts at the main branch.

iv) Find all customer who have an account at all the branches located in a specific city.

v) Demonstrate how t0 delete all account tuples at every branch located in specific city.

8. Consider the following database for ORDER PROCEESING.

CUSTOMER(cust-no: int, cname: string, city: string)

ORDER(orderno: int, odate: date, ord-amt: real)

ORDER_ITEM(orderno: int, itemno:int, qty: int)

ITEM(itemno: int, unitprice: real)

SHIPMENT(orderno: int, warehouseno: int, ship-date: date)

WAREHOUSE(warehouseno: int, city: string)

i) Create the above tables by properly specifying the primary keys and the foreign keys

ii) Enter atleast five tuples for each relation.

iii) List the order number and ship date for all orders shipped from particular warehouse.

iv) Produce a listing: customer name, no of orders, average order amount

v) List the orders that were not shipped within 30 days of ordering

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 8 Programs has to be prepared).

Note :

a) The candidate has to write two the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.

b) A minimum of 8 Programs has to be done in Part-B and has to be maintained in the Practical Record.

c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

THIRD SEMESTER BCA

BCA301T: INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA302T: ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA303T: OBJECT ORIENTED PROGRAMMING USING C++

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction :Procedure Languages, definition of OOP, Basic concept of OOP, Object Class, Data Abstraction, Data Encapsulation, Data Hiding member functions , Reusability, Inheritance, Creating new Data Types, Polymorphism, Overloading , Dynamic binding and Message passing. C++ Features: The iostream class, C++ Comments, C++ Keywords, Variable declaration, The Const Qualifier. The Endl, Set Waste precision, Manipulators, The scope resolution operator, The new & delete Operations. Functions: Simple Functions, Function declaration, calling the function, function definition, Passing argument to, returning value from function, passing constants, Variables, pass by value , passing structure variables, pass by reference, Default arguments, return statements, return by reference, overloaded functions; Different number of arguments, Different Kinds of argument, inline function.

[12 Hours]

Unit - II

Objects & Classes: Classes & Objects, Class Declaration, Class member; Data Constructions, Destructors, Member functions, Class member visibility, private, public, protected . The scope of the class objects constructions, Default Constructor. Constructor with argument, constructor with default arguments, Dynamic constructor, copy constructor, Overloaded constructor, Objects as arguments returning objects from

functions, class conversion, manipulation private Data members, Destructors classes, object & memory, arrays as class member data: Array of objects, string as class member.

[12 hours]

Unit - III

Operator Overloading : Overloading unary operator: Operator Keyword, Operator arguments, Operator return value, Nameless temporary objects, limitations of increment operator, overloading binary operator, arithmetic operators, comparison operator, arithmetic assignment operator, data conversion; conversion between objects of different classes. Inheritance : Derived Class & Base Class: Specifying the Derived class accessing Base class members, the protected access specifier, Derived class constructor, Overriding member functions, public and private inheritance; Access Combinations, Classes & Structures, Access Specifiers, Level of inheritance; Multilevel inheritance, Hybrid inheritance, Multiple inheritance; member functions in multiple inheritance , constructors in multiple inheritance, Containership; Classes, within classes, Inheritance & Program development.

[12 Hours]

Unit - IV

Virtual functions: Normal member function accessed with pointers, Virtual member functions accessed with pointers, Dynamic binding, pure virtual functions, Friend function; Friends for functional notation, friend classes, the pointer; Accessing Member Data with this, using this for returning values. Templates & Exception Handling: Introduction, Templates, Class Templates, function templates, Member function templates, Template arguments, Exception Handling.

[12 Hours]

Unit V

Streams: The Stream class Hierarchy, Stream classes Header file, string I/O: Writing strings, reading strings, character I/O, Detecting End – of – file. Object I/O; writing an object to disk, reading an object from disk, I/O with multiple objects; the fstream class, The open function, File Pointers; Specifying the position, Specifying the offset. The tellg Function, Disk I/O with Memory Functions; Closing Files, Error Handling, Command Line Arguments.

[12 Hours]

Text books:

1. Lafore Robert, "Object Oriented Programming in Turbo C++", Galgotia Publications, 2012.

Reference:

1. Lippman, "C++ Primer", 3rd Edition, Pearson Education, 2010.
2. E. Balaguruswamy: Object Oriented Programming with C++, Tata McGraw Hill Publications, 2011.
3. Farrell, "Object Oriented Programming Using C++", 1st Edition 2008, Cengage Learning India

BCA304T: ACCOUNTING AND FINANCIAL MANAGEMENT

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction: History and Development of Accounting –Meaning Objectives and functions of Accounting-Book–keeping V/s Accounting –Users of accounting data – systems of book-keeping and accounting – branches of accounting –advantages and limitations of accounting. Accounting Concepts and conventions: Meaning need and classification, Accounting standards –meaning, need and classification of Indian

accounting standards. Accounting principles V/s Accounting standards.

[12 Hours]

Unit - II

Financial Accounting Process: Classification of accounting transaction and accounts, rules of debit and credit as per Double Entry System. Journalisation and Ledger position Preparation of different subsidiary books: Purchase Day Book Sales Day Book, Purchase Returns Day Books, Sales Returns Day Book, Cash Book. Bank Reconciliation Statement: Meaning, Need, Definition, preparation of BRS.

[12 Hours]

Unit - III

Accounting for bill of exchange: Meaning, Need, Definition, Partice to Bill of Exchange, Types of Bills. Accounts Procedure: Honour of the Bill, Dishonour of the Bill, Endorsement, Discounting, Renewal, Bills for collection, Retirement of the Bill, Accommodation Bills, Bill Receivable Book and Payable Book. Preparation of Trial Balance: Rectification of errors and journal Proper.

[12 Hours]

Unit - IV

Preparation of Final accounts: Meaning, need and classification, Preparation of Manufacturing, Trading, Profit and loss account and Balance-Sheet of sale –traders and partnership firms.

[12 Hours]

Unit V

Accounting Package like Tally

[12 Hours]

Text Book

1. S.Ramesh, B.S.Chandrashekar, a Text Book of Accountancy.

References

1. V.A.Patil and J.S.Korihalli, Book–Keeping and Accounting, (R. Chand and Co. Delhi).
2. R.S.Singhal, Principles of Accountancy, Nageen Prakash pvt.Ltd, Meerut.
3. B.S.Raman, Accountancy, (United Publishers, Mangalore)

BCA305T: OPERATING SYSTEMS

Total Teaching Hours : 65 No of Hours / Week : 05

Unit - I

Introduction: Batch Systems, Concepts of Multiprogramming and Time Sharing, Parallel, Distributed and real time Systems, Operating System Structures, Components & Services, System calls, System programs, Virtual machines. Process Management: Process Concept, Process Scheduling, Co – Operating process, Threads, Inter process communication, CPU Scheduling Criteria, Scheduling algorithm, Multiple Processor Scheduling, Real time Scheduling, Algorithm evolution.

[13 Hours]

Unit - II

Process Synchronization and deadlocks: The Critical Section Problem, Synchronization hardware, Semaphores, Classical problems of synchronization, Critical regions, monitors, Dead locks – system model, Characterization, Dead lock prevention, avoidance and detection, Recovery from dead lock, Combined approach to deadlock handling.

[13 Hours]

Unit - III

Memory Management: Logical and Physical address space, Swapping, Contiguous allocation, Paging, Segmentation, Segmentation with paging in Mastics and Intel 386, Virtual memory-Demand paging and it's performance, Page replacement algorithms, Allocation of frames, thrashing, page size and other considerations. Demand Segmentation.

[13 Hours]

Unit - IV

File management (Systems, Secondary Storage Structure): File Concepts, Access methods, Directory Structure, Protection and consistency, File system structure, Allocation methods, Free space management, Directory Implementation, Efficiency and Performance, Recovery. Disk Management (Structure, Disk Scheduling Methods): Disk Structure & Scheduling methods, Disk management, Swap – Space management.

[13 Hours]

Unit - V

Protection and Security: Goals of protection, Domain Protection, Access matrix, Security Problem, Authentication, One time password, program threats, System threads.
Case Study of Windows and Linux Operating System

[13 Hours]

Text Books:

1. Abraham Silberschatz and Peter Baer Galvin, "Operating System Concepts", 7th Edition, Pearson Education, 2002.

Reference Books:

1. H.M.Deitel, "Operating Systems", Pearson Learning Solutions, 3rd Edition, 2003.
2. William Stallings, "Operating Systems", 6th Edition, Pearson Education, 2010.
3. Stuart, "Operating systems: Principles, Design and Implementation", 1st Edition 2008, Cengage Learning India

BCA303P : C++ PROGRAMMING

LABPART-A

1. Write a program to prepare a shopping lists
2. Write a program to perform bank transactions.
3. Write a program to swap numbers using friend function.
4. Write a program to calculate area and circumference of circle using inline function
5. Write a program to perform multiplication of two matrices using operator overloading.
6. Write a program to implement operation on queue.
7. Write a program to create a student report using inheritance technique.
8. Write a Program to find the area and volume of respective figures using function overloading.
9. Write a program to show returning current object, accessing member data of current object and returning values of object using this pointer
10. Write a program to sort elements using template.

PART - B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 8 Programs has to be prepared).

Note :

a) The candidate has to write two the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA304P: ACCOUNTING PACKAGE LAB

FOURTH SEMESTER BCA

BCA401T: INDIAN

LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA402T: ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA403T: VISUAL PROGRAMMING

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction to Visual Programming: The intergrated Development Environment – menu bar, tool bar, from designer, project explorer , properties window , from layout window , The Visual Programing editor. The form object: Properties , events and methods pf forms ; Properties – Name , Captain , Backcolor, Borderstyle , controlbox , maxbutton , minbutton, moveable, startup position , height, width , left, top, scalemode, window, state ; Events –load ,unload , Clerk, Activate , Deactivate , Resize, methods – Show , hide , cls , Unload ,print , Controls –Properties and events of different controls such as command buttons , labels , textboxes image controls , timer, horizontal and vertical scroll bars , option buttons , check boxes , frames lists and combo boxes. Predefined Dialog Boxes – MsgBox and InputBO

[12 Hours]

Unit - II

Programming: Data types, variables; declaration and scope arithmetic operations, Study of form and code modules, private and public procedures , Main o procedure , Suba and Functions. Mathematical and string Functions; Branching and Looping Statement ; If – Then , if –Then –Else and Nested If Statements; Select Case –different forms; For – Next , While – Wend and Do – Loops statements ; Arrays- declaration . Static and dynamic arrays. Array and Function, menus and toolbars-Creating menus and toolbars, Working with the menu editor , Designing Multiple Document interface forms. Microsoft common controls.[12 Hours]

Unit - III

OOP methods and properties of an object, class Modules , Encapsultation and Inheritance characteristics Dynamic Link Libraries (DLLs) and Windows API ; Designing Help files ; File handling – Sequential ,Random access and Binary files, Database connectivity – DAO and ADO Tables and Queries, ActiveX Data objects.

[12 Hours]

Unit – IV

Visual C++ Programming: Objects-Classes-VC++Components – Resources-Event Handling – Menus – Dialog Boxes – Importing VBX Controls – Files – MFC File Handling – Document View Architecture – Serialization.

[12 Hours]

Unit – V

Interfacing Other Applications – Multiple Document Interface (MDI) – Splitter Windows – Exception Handling – Debugging – Object Linking and Embedding (OLE) – Database Application – DLL- ODBC.

[12 Hours]

Text Books:

1. Gurumit Singh, "Visual Basic 6", First Edition, Firewall Media, 2007.

Reference Books:

1. Charles Petzold, "Windows Programming", 5th Edition, Microsoft Press, 1999.
2. Steve Holzner, "Visual C++ Programming", Second Edition, PHI, 1994.
3. Go ttfried, "Programming with Visual Basic 6", PHI, 2000.

BCA404T : UNIX PROGRAMMING

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction: History, salient features, Unix system architecture, Unix command format, Unix internal and external commands, Directory commands, File related commands, Disk related commands, general utilities. Unix File System: Boot inode, super and data block, in-core structure, Directories, conversion of pathname to inode, inode to a new file, Disk block allocation. Process Management: Process state and data structures of a Process, User vs, kernel node, context of a Process, background processes, Process scheduling commands, Process terminating and examining commands.

[12 Hours]

Unit - II

Secondary Storage Management: Formatting, making file system, checking disk space, mountable file system, disk partitioning, file compression. Special Tools and Utilities: Filters, Stream editor SED and AWK, Unix system calls and library functions, Processes, signals and Interrupts, storage and compression facilities.

[12 Hours]

Unix - III

Shell Programming: Vi editor, shell types, shell command line processing, shell script features, executing a shell script, system and user-defined variables, expr command, shell screen interface, read and echo statement, command substitution, escape sequence characters, shell script arguments, positional parameters, test command, file test, string test, numeric test. [12 Hours]

Unit – IV

Conditional Control Structures-if statement, case statement Looping Control Structure-while, until, for, statements. Jumping Control Structures – break, continue, exit. Shell Programs covering the above concepts. [12 Hours]

Unit – V

Unix System Communication: Introduction, write, read, wall commands, sending and handling mails. System Administration: Roles of a System Administrator, File System Maintenance, System Startup and Shutdown, User Management, Backup and Restore, Doemons, Domain Name System DNS, Distributed File System.

[12 Hours]

Text Books:

1. M.G.Venkateshmurthy, "Introduction to UNIX & SHELL Programming", First Edition, Pearson Education, 2004.

Reference Books:

1. Forouzan,"Unix and Shell Programming", 1st Edition,2008 Cengage Learning India
2. UNIX and Shell Programming, Archana Verma, Firewall Media.

BCA405T: OPERATIONS RESEARCH

Total Teaching Hours : 65 No of Hours / Week : 05

Unit - I

Linear Programming Problems: Origin and development of operations research, Linear Programming Problem –formulation of Lenear Programming problem, Graphical solution. Theory of simplex method. Use of artifical variables and their solution.

[13 Hours]

Unit - II

Transportation Problem: Mathematical formulation of transportation problem, Initial basic Feasible solution, North West corner rule, Matrix minima method, Vogel's approximation method, MODI method to find optimal solution.

[13 Hours]

Unit - III

Assignment Problem: Mathematical formulation of an Assignment problem, Assignment algorithm, Hungarian Method to solve Assignment Problem.

[13 Hours]

Unit - IV

Network Analysis: Basic components of Network, Rules for drawing Network diagram Time calculation in Networks. Critical Path Method and PROJECT Evaluation and Review Techniques. Algorithm and flow chart for CPM and PERT.

[13 Hours]

Unit - V

Theory of Games: Two –person Zero –sum Games, the maximin and Minimax principle, Saddle point and value of the Game. Game without saddle points, mixed strategies, solution for 2X2 games, Graphical method Dominance property.

[13 Hours]

Text books:

1. Taha, "Operations Research", 7th edition, Pearson Education, 2007.

References Book:

1. Billey E. Gillett, "Introduction to Operations Research" , Himalaya Publishing House, Delhi, 1979.
2. Hamady A.Taha "Operations Research" , Collin Mac Millan, 1982.

FIFTH SEMESTER BCA

BCA501T: DATA COMMUNICATIONS AND NETWORKS

Total Teaching Hours : 60 No of Hours / Week : 04

Unit – I

Introduction: Communication Network and services, Approaches to Network Design, Network Functions and Network Topology, Message ,packet and circuit Switching , Internet, Packet Switching ; Key factors in Communication Network Evolution ; Layered Architecture and Applications – Examples of Layering , OSI Reference Model, TCP/IP Model Telnet FTP and IP Utilities. Digital Transmission: Digital Representation of Information: Properties of digital transmission: Characterization of Communication Channels Frequency Domain and Time Domain : Fundamental limits in Digital Communication – The Nyquist Signalling rate, The Shannon channel capacity : Line coding , Modems & digital Modulations

[12 Hours]

Unit - II

Transmission Systems: properties of media and digital transmission Systems – Twisted Pair , Coaxial Cable, Optical Fibre, Radio Transmission Intrared Light Error detection and correction – Error detection , Two – dimensional parity checks , Internet checksum , Polynomial code; standardized Polynomial codes , Error detecting capability of a polynomial code, Multiplexing – frequency – Division , Time – Division , SONET; Wavelength Division Multiplexing Circuit switches; Telephone network , signalling Traffic and Overload control in Telephone networks – Concentration, Routing Control, Overload controls Cellular Telephone Networks, Satellite Cellular networks.

[12 Hours]

Unit – III

Peer –to-Peer Protocols:- Peer-to peer Protocols and service models ARQ Protocols stop and wait , Go –back-N Selective Repeat , Transmission efficiency of ARQ Protocols, Other adaptation functions , - Sliding window flow control Timing Recovery in Synchronous Services Reliable Stream Service, Data Link Control, HDLC, PPP ; Statistical Multiplexing.

[12 Hours]

Unit - IV

Local Area Networks and Medium access Control Protocols:- Multiple access communications; Local Area network – LAN Structure, MAC Sublayer, Logical link control layer, Random Access protocols ALOHA , Slotted ALOHA, CSMA, CSMA/CD, Scheduling approaches to medium access control – Reservation Systems, polling , Token passing rings, comparison of Random access & Scheduling access control Comparison of Radom access & SHEDULING MEDIUM access controls; Channelization – FDMA, TDMA, CDMA;

[12 Hours]

Unit - V

LAN Standard –Ethernet and IEF, 802.3 LAN Standard ; Token Ring and IEEE 8025 LAN standard , FDDI, Wireless LAN's and IEEE 802.11 Standards; LAN Bridges – Transparent Bridges , Source Routing Bridges , Mixed – media Bridges. Packet Switching Networks :- Network services & Internal Network Operation; Packet Network Topology; Datagrams & VIRTUAL circuits ; structure of switch/ Router, Connectionless packet switching ; Virtual – Circuit packet switching ; Overview of Routing and congestion in packet networks – Routing algorithms classification , Routing tables,

shortest path routing algorithms, Flooding , Hierarchical routing , Distance vector routing Link state routing , congestion control algorithms. [12 Hours]

Text Books:

1. Stallings, "Data and Computer Communications", 7th Edition,Pearson Education, 2012

Reference Books:

1. Andrew S Tanenbaim, "Computer Networks", 4th Edition, Pearson Education.
2. Behrouz Ferouzan, Introduction to Data Communication & Networking TMH, 1999.
3. Larry &Peterson & Bruce S Davis; Computer networks Second Edition , Morgan Kaufman, 2000.

BCA502T : SOFTWARE ENGINEERING

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction: Software Products and Software process, Process models: Waterfall modal, Evolutionary Development, Bohemia's Spiral model, Overview of risk management, Process Visibility, Professional responsibility. Computer based System Engineering: Systems and their environment, System Procurement, System Engineering Process, System architecture modelling. Human Factors, System reliability Engineering. Requirements and Specification: The requirement Engineering Process, The Software requirement document, Validation of Evolution of requirements, Viewpoint – oriented & method based analysis , system contexts , Social 7 organizational factors . Data flow , Semantic, Objects, models , Requirement Specification, Non functional requirement.

[12 Hours]

Unit - II

Software Prototyping: Prototyping in software process, Prototyping techniques, User interface prototyping. Software Design: Design Process, Design Strategies, Design Quality , System Structuring control models, Modular decomposition , Domain Specific architecture.

[12 Hours]

Unit - III

Object Oriented& function oriented design: Objects, object Classes and inheritance Object identification, An object oriented design example, Concurrent Objects, Data flow design Structural decomposition, Detailed Design, A Comparison of design Strategies.
User interface design: Design Principles, User System interaction, Information Presentation, User Guidance, Interface Evaluation.

[12 Hours]

Unit - IV

Software Reliability and reusability : Software reliability metrics , Software reliability Specification , Statistical testing ,Reliability Growth modeling, Fault avoidance & tolerance, Exception handling & defensive programming , Software development with reuse, Software' development for reuse , Generator based reuse, Application System Portability.

[12 Hours]

Unit - V

Software Verification and Validation : The testing Process , Test Planning & Strategies, Black Box , Structural, interface testing , Program inspections , Mathematically based verification, Static analysis tools, Clean room software development. Management Issues: Project management, Quality management, Software cost estimation, Software maintenance. [12 Hours]

Text book

1. Ian Sommerville – Software Engineering, 9th Edition, Pearson Education Ltd, 2010.

Reference Books

1. Roger S. Pressman – Software Engineering, A Practitioner's approach, 7th Edition, McGRAW-HILL Publication, 2010.
2. Pankaj Jalote, "An integrated approach to Software Engineering", 3rd Edition, Narosa Publishing House, 2013.

BCA503T: COMPUTER ARCHITECTURE

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

DIGITAL LOGIC CIRCUITS: Logic gates Boolean algebra, map simplification, combinational circuits, flip-flop, sequential circuits. INTEGRATED CIRCUITS AND DIGITAL FUNCTIONS: Digital integrated circuits, IC flip –flops and registers, decoders and multiplexers, binary counters, shift registers, random –access memories (RAM) read –only memories (ROM).

[12 Hours]

Unit - II

DATA REPRESENTATION: Data types, fixed-point representation, floating – point representation, other binary codes, error detection codes.

DATA TRANSFER OPERATIONS: Register Transfer, Memory Transfer and I/O Transfer.

[12 Hours]

Unit – III

BASIC COMPUTER ORGANISATION AND DESIGN: Instruction codes, computer instruction, timing and control, execution and instruction, input-output and interrupt, design of computer.

[12 Hours]

Unit - IV

CENTRAL PROCESSOR ORGANIZATION : Processor bus organization, arithmetic logic unit (ALU) instruction formats, addressing modes, data transfer and manipulation , program control, microprocessor organization.

[12 Hours]

Unit – V

INPUT-OUTPUT ORGANISATION: Peripheral devices . asynchronous data transfer , direct memory access (DMA) ,priority interrupt, input –output processor (IOP).

MEMORY ORGANIZATION : Auxiliary memory, microcomputer memory hierarchy , associative memory , virtual memory, cache memory.

[12 Hours]

Text Books

1. M.Moris Mano , Computer System, Architecture, 2nd Edition Prentice Hall of India.

References

1. Heuring and Jordan, Computer systems design and Architecture , Peason Edition
2. William Stallings , Computer Organisation and Archotecture, Peason Education
3. Floyed , Digital Fundamentals,8th Edition , Peason Education.
4. Andrew S. Temenbauam, Structured Computer Organization , 3rd Edition ; Prentice Hall of India.
5. David Patterson & Hennessy , Computer Organization & Design , Elsevier.

BCA504T: OBJECT ORIENTED PROGRAMMING USING JAVA

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction to JAVA: JAVA Evolution: Java History, Java Features, How Java Differs from C and C++, Java and Internet, Java and World Wide Web, Web Browsers, Hardware and Software Requirements, Java Support Systems, Java Environment. Overview of JAVA Language: Introduction, Simple Java program, More of Java Statements, Implementing a Java Program, Java Virtual Machine, Command Line Arguments, Programming Style. Constants, Variables, and Data Types: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Values to Variables, Scope of Variables, Symbolic Constants, Type Casting, Getting Values of Variables, Standard Default Values, Operators and Expressions: Introduction, Arithmetic Operators, Relational Operators Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bitwise Operators, Special Operators, Arithmetic Expressions, Evaluation of Expressions, Precedence of Arithmetic Operators, Type Conversion and Associativity, Mathematical Functions. Decision Making and Branching: Introduction, Decision Making with if Statement, Simple if Statement, The if…..else Statement, Nesting of if……Else Statements, The else if Ladder, The Switch Statement, The ?: Operator. Decision Making and Looping: Introduction. The while Statement, The do Statement, The for Statement, Jumps in Loops Labeled Loops.

[12 hours]

Unit -II

Classes, Arrays, Strings and Vectors: Classes, Objects and Methods: Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance: Extending a Class Overriding Methods, Final Variables and Methods, Finalizer methods, Abstract Methods and Classes, Visibility Control. Arrays, Strings and Vectors: Arrays, One-dimensional Arrays, Creating an Array, Two -Dimensional Arrays, Creating an Array, Two – dimensional Arrays, Strings, Vectors, Wrapper Classes.

[12 Hours]

Unit - III

Interfaces, Packages, and Multithreaded Programming: Interfaces: Multiple Inheritance: Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables. Packages: Putting Classes together: Introduction, Java API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes. Multithreaded Programming: Introduction, Creating Threads, Extending the Thread Class, Stopping and Blocking a thread, Life Cycle of a thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

[12 Hours]

Unit - IV

Managing Exceptions, Applet Programming: Managing Errors and Exception: Introduction, Types of Exception Handling Code, Multiple Catch Statements, Using Finally Statement, Throwing Our Own Exceptions, Using Exceptions for Debugging. Applet Programming: Introduction, How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an Executable applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, running the Applet, More About HTML Tags, Displaying Numerical Values, Getting Input from the User.

[12 Hours]

Unit - V

Graphics Programming, Input/Output: Graphics programming: Introduction, The Graphics Class, Lines and rectangles, circles, and Ellipses, Drawing Arcs, Drawing Polygons, Lines Graphs, Using Control Loops in Applets, Drawing Bar Charts. Managing Input/Output Files in JAVA: Introduction, Concept of Streams, Stream Classes, Byte Stream Classes, Character Stream Classes, Using Streams, Other Useful I/O Classes, Using the File Class, Input / Output Exceptions, Creation of Files, Reading / Writing Characters, Reading / Writing Bytes, Handling Primitive Data Types, Concatenating and Buffering Files, Interactive Input and output, Other Stream Classes.

[12 Hours]

Text Books:

1. A.Balaguruswamy, "Programming with JAVA", A Primer, TMH, 1999.

Reference Books:

1. Thomas Boutel, "CGI programming in C and Perl", Addison – Wesley, 1996.
2. Jefry Dwight et al, Using CGI, Second Edition, Prentice Hall, India, 1997.
3. Patrick Naughton & Herbert Schildt, JAVA 2: The Complete Reference, THM, 1999.
4. Schildt, "JAVA The Complete Reference", 7th Edition.

BCA505T : MICROPROCESSOR AND ASSEMBLY LAGUAGE

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Architecture and Operation: Introduction to 8085, Microprocessor organization/ architecture & its operation Microprocessor based system, memory interfacing , basic interfacing concepts ,interfacing I/O devices

[12 Hours]

Unit - II

Programming the 8085: Programming model, instruction classification , Instruction format, addressing modes, writing assembly level programs-overview of instruction set, timing diagrams data transfer, Arithmetic, Logic branch operations.

[12 Hours]

Unit - III

Programming techniques- Looping Counting and Indexing , 16 bit arithmetic operations , logic operations Compare and rotate operations . Counters and Time delays , Generation of pulse waveforms. Stacks and subroutines- conditional CALL and RETURN instructions. Advanced subroutine concepts. BCD to Binary and Binary to BCD conversions, BCD to 7 segment conversion , Binary to ASCII and ASCII to Binary code conversion, BCD addition and subtraction , multiplication and division.

[12 Hours]

Unit – IV

Memory Interface: Memory and I/O mapping and interfacing concepts. Interrupts : 8085 vectored interrupts , Restart as Software instructions, additional I/O concepts and processes.

[12 Hours]

Unit – V

Interfacing of peripherals (I/Os) and applications: Interfacing Keyboard (linear and matrix) and 7 segment display including multiplexes, 8279 programmable keyboard /display interface, 8255 PPI , 8259 PIC , DMA and 8257 DMA controller , Serial communication using 8251, D to A converters and interfacing, RS323 serial

communication standards.

[12 Hours]

Text books

1. R.S.Gaonkar – Microprocessor Architectutre , Programming and Application with 8085. Penram Int. 3rd Edn.

References

1. Douglas V.Hall- Microprocessors and digital systems, MH.
2. Kenneth L.Short - Microprocessor and Programmed Logic '', PHI , 2nd Edn.
3. Aditya P. Mathur- Introduction to Microprocessors, 3RD Edn. TMH
4. Antonakos: Introduction to Intel family of Microprosessors Pearson Education
5. Hoffer: Modern Systems Analysis and Design Pearson Eduction Kendall, System Analysis and Design

BCA504P : JAVA PROGRAMMING
LABPART - A

1. Write a program to find factorial of list of number reading input as command line argument.
2. Write a program to display all prime numbers between two limits.
3. Write a program to sort list of elements in ascending and descending order and show the exception handling.
4. Write a program to implement all string operations.
5. Write a program to find area of geometrical figures using method.
6. Write a program to implement constructor overloading by passing different number of parameter of different types.
7. Write a program to create student report using applet, read the input using text boxes and display the o/p using buttons.
8. Write a program to calculate bonus for different departments using method overriding.
9. Write a program to implement thread, applets and graphics by implementing animation of ball moving.
10. Write a program to implement mouse events and keyboard events.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA505P: ASSEMBLY LANGUAGE PROGRAMMING LAB

PART - A

1. Exchange of two 16-bit numbers.
2. Addition & Subtraction of two 8 –bit HEX numbers.
3. Subtraction of two 16 –bit numbers.
4. Two n-byte Number addition.
5. Block Transfer.
6. 'N' Decimal Number addition.
7. 4-Digit BCD addition.
8. Subtraction of 16 –bit number.
9. Sorting of array in ascending order.
10. Multiplication of 2 digit BCD

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA506P : PROJECT

Students can develop a project in team (maximum three members). They should implement their project in college in any RDBMS package or any language available in the college. The students have to collect data outside practical hours. Project may be taken outside but must be implemented in the college. Internal marks can be awarded by the guide by evaluating the performance of the students during the course of project work. In viva-voce the questions must be directed only on the project work to access the involvement and understanding of the problem by the students.

The project carries 100 marks is distributed as follows:

Demonstration and Presentation	65 Marks
Viva-voce	25 Marks
Project Report	10 Marks

SIXTH SEMESTER BCA

BCA601T : THEORY OF

COMPUTATION

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Finite automata with Epsilon transitions.

[12 Hours]

Unit - II

Regular Expressions: Finite Automata and Regular Expressions Applications of Regular Expressions. Regular languages; Proving languages not to be regular languages; Closure properties of regular languages; Decision properties of regular languages; Equivalence and minimization of automata.

[12 Hours]

Unit - III

Context–free grammars: Parse trees; Applications; Ambiguity in grammars and Languages. Definition of the Pushdown automata; the languages of a PDA; Equivalence of PDA's and CFG's.

[12 Hours]

Unit - IV

Deterministic Pushdown Automata:Normal forms for CFGs; The pumping lemma for CFGs; Closure properties of CFLs. Problems that Computers cannot solve.

[12 Hours]

Unit – V

The Turing machine:Programming techniques for Turing Machines. Undecidability, A Language that is not recursively enumerable; An Undecidable problem that is RE; Post's Correspondence problem.

[12 Hours]

Text Book:

1. John E. Hopcroft, Rajeev Motwani, Jeffrey D.Ullman: Introduction to Automata Theory, Languages and Computation, 3rd Edition, Pearson Education, 2011.

Reference Books:

1. John C Martin: Introduction to Languages and Automata Theory, 3rd Edition, Tata McGraw-Hill, 2007.
2. Daniel I.A. Cohen: Introduction to Computer Theory, 2nd Edition, John Wiley & Sons, 2009.
3. Thomas A. Sudkamp: An Introduction to the Theory of Computer Science, Languages and Machines, 3rd Edition,Pearson Education, 2006

BCA602T: SYSTEM PROGRAMMING

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Background: Machine Structure, Evolution of the Components of a Programming System, Assembler, Loaders, Macros, Compliers, Formal Systems. Machine Structure, Machine Language and assembly language: General Machine Structure, Machine Language, Assembly Language

[12 Hours]

Unit - II

Assemblers: General Design Procedure, Design of assembler, Statement of Problem, Data structure, Format of databases, algorithm, look for modularity, Table Processing: Searching and Sorting. The Problem, Searching a table, linear Search, binary Search, Sorting, interchange sort, Shell Sort, Bucket Sort, Radix Exchange Sort, address calculation sort, comparison of sorts, hash or random entry searching.

[12 Hours]

Unit - III

MACRO LANGUAGE AND THE MACRO PROCESSOR: Macroinstruction, Features of macro Facility, Macro instruction arguments, conditional macro Expansion, macro calls within macros, macro Instructions defining macros, Implementation, Statement of problem, implementation of a restricted facility, A two pass algorithm. A single pass algorithm, implementation of macro calls within macros. Implementation within an assembles.

[12 Hours]

Unit - IV

LOADERS: Loader schemes, Compile & go, General loading Scheme, absolute loaders, Subroutine Languages, Relocating loaders, Direct linking loaders, other loading Schemes – Binders, linking loaders, Overlays, Dynamic binders. Design of absolute loader, Design of a Direct linking loader Specification of problem, Specification of data structure, format of data bases algorithm.

[12 Hours]

Unit - V

COMPILERS: Statement of problem, Problem1: Recognizing basic Elements, Problem2: Recognizing Syntactic cutis & interpreting meaning, Problem3: Storage Allocation, Problem4: Code Generation. Optimization (machine independent) optimization (machine dependent), Assembly Phase, General Model of complier. PHASES OF COMPILERS: Simple Structure of Compiler, Brief introduction to 7 Phases of Compliers.

[12 Hours]

Text Books:

1. John J. Donowon, System Programming, TATA McGraw-Hill.

Reference Books:

1. Dhamdhere: System programming and Operating System TMH
2. Beck: System Software, 3/e Pearson Education.

BCA603T : CRYPTOGRAPHY AND NETWORK SECURITY

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Introduction: Security Goals, Cryptographic Attacks, Services and Mechanism, Techniques. Mathematics of Cryptography: Integer Arithmetic, Modular Arithmetic, Matrices, Linear Congruence.

[12 Hours]

Unit – II

Traditional Symmetric-Key Ciphers: Introduction, Substitution Ciphers, Transpositional Ciphers, Stream and Block Ciphers. Data Encryption Standard (DES): Introduction, DES Structure, DES Analysis, Security of DES, Multiple DES, Examples of Block Ciphers influenced by DES. Advanced Encryption Standard: Introduction, Transformations, Key Expansion, The AES Ciphers, Examples, Analysis of AES.

[12 Hours]

Unit III

Encipherment using Modern Symmetric-Key Ciphers: Use of Modern Block Ciphers, Use of Stream Ciphers, Other Issues. Mathematics of Asymmetric-Key Cryptography: Primes, Primality Testing, Factorization, Chinese Remainder Theorem, Quadratic Congruence, Exponentiation and Logarithm. Asymmetric Key Cryptography: Introduction, RSA Cryptosystem, Rabin Cryptosystem, Elgamal Cryptosystem, Elliptic Curve Cryptosystems.

[12 Hours]

Unit - IV

Cryptography Hash Functions: Introduction, Description of MD Hash Family, Whirlpool, SHA-512. Digital Signature: Comparison, Process, Services, Attacks on Digital Signature, Digital Signature Schemes, Variations and Applications. Key Management: Symmetric-Key Distribution, Kerberos, Symmetric-Key Agreement, Public-Key Distribution, Hijacking.

[12 Hours]

Unit - V

Security at the Application Layer: PGP and S/MIME: Email, PGP, S/MIME. Security at the Transport Layer: SSL and TLS: SSL Architecture, Four Protocols, SSL Message Formats, Transport Layer Security. Security at the Network Layer: IPSec: Two modes, Two security protocols, Security association, security policy, Internet Key exchange, ISAKMP. [12 Hours]

Text Book:

1. Behrouz A. Forouzan, Debdeep Mukhopadhyay: Cryptography and Network Security, 2nd Edition, Special Indian Edition, Tata McGraw-Hill, 2011.

Reference Books:

1. Michael E. Whitman and Herbert J. Mattord: Principles of Information Security, 2nd Edition, Thomson, Cengage Delmar Learning India Pvt., 2012.
2. William Stallings: Network Security Essentials: Applications and Standards, 4th Edition, Pearson Education, 2012.

BCA604T: WEB PROGRAMMING

Total Teaching Hours : 60 No of Hours / Week : 04

Unit - I

Fundamentals of Web: Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security, The Web Programmers Toolbox. XHTML: Origins and evolution of HTML and XHTML, Basic syntax, Standard XHTML document structure, Basic text markup, Images, Hypertext Links, Lists, Tables.

[12 Hours]

Unit - II

HTML and XHTML: Forms, Frames in HTML and XHTML, Syntactic differences between HTML and XHTML. CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The and tags, Conflict resolution.

[12 Hours]

Unit -III

Java Script: Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, Operations, and expressions; Screen output and keyboard input; Control statements; Object creation and Modification; Arrays; Functions; Constructor; Pattern matching using expressions; Errors in scripts; Examples.

[12 Hours]

Unit - IV

Java Script and HTML Documents: The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements; The DOM 2 event model; The navigator object; DOM tree traversal and modification.

[12 Hours]

Unit - V

Dynamic Documents with JavaScript: Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements. XML: Introduction; Syntax; Document structure; Document Type definitions; Namespaces; XML schemas; Displaying raw XML documents; Displaying XML documents with CSS; XSLT style sheets; XML Processors; Web services.

[12 Hours]

Text Books

1. Robert W Sebesta, "Programming the World Wide Web", 4th Edition, Pearson Education, 2008.

Reference Books

1. M.Deitel, P.J.Deitel, A.B.Goldberg, "Internet & World Wide Web How to program", 3rd Edition, Pearson Education / PHI, 2004.
2. Chris Bates, "Web Programming Building Internet Applications", 3rd Edition, Wiley India, 2006.
3. Xue Bai et al, "The Web Warrior Guide to Web Programming", Thomson, 2003.
4. Sklar, "The Web Warrior Guide to Web Design Technologies", 1st Edition, Cengage Learning India.

BCA604P : WEB PROGRAMMING

LABPART -A

1. Write a program to find factorial of list of number reading input as command line argument.
2. Write a program to sort list of element in ascending and descending order and show the exception handling.
3. Write a program to implement all string operations.
4. Write a program to find area of geometrical figures using method overloading.
5. Write a program to implement constructor overloading by passing different number of parameter of different types.
6. Write a program to create student report using applet, read the input using text boxes and display the o/p using buttons.
7. Write a program to implement an apply by passing parameter to HTML.
8. Write a program to implement thread, applets and graphics by implementing animation of ball moving.
9. Write a program to implement mouse events.
10. Write a program to implement keyboard events.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.

b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.

c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks

	Formatting the Output	- 05 Marks
	Viva	- 05 Marks
	Record	- 05 Marks
Total		**- 35 Marks**

BCA604P : WEB PROGRAMMING LAB

PART - A

1. Create a form having number of elements (Textboxes, Radio buttons, Checkboxes, and so on). Write JavaScript code to count the number of elements in a form
2. Create a HTML form that has number of Textboxes. When the form runs in the Browser fill the textboxes with data. Write JavaScript code that verifies that all textboxes has been filled. If a textboxes has been left empty, popup an alert indicating which textbox has been left empty.
3. Develop a HTML Form, which accepts any Mathematical expression. Write JavaScript code to Evaluates the expression and Displays the result.
4. Create a page with dynamic effects. Write the code to include layers and basic animation.
5. Write a JavaScript code to find the sum of N natural Numbers. (Use user-defined function)
6. Write a JavaScript code block using arrays and generate the current date in words, this should include the day, month and year.
7. Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.
8. Create a form for Employee information. Write JavaScript code to find DA, HRA, PF, TAX, Gross pay, Deduction and Net pay.
9. Create a form consists of a two Multiple choice lists and one single choice list

(a) The first multiple choice list, displays the Major dishes available
(b) The second multiple choice list, displays the Starters available.
(c)The single choice list, displays the Soft drinks available.

10. Create a web page using two image files, which switch between one another as the mouse pointer moves over the image. Use the on Mouse Over and on Mouse Out event handlers.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
c) Scheme of Evaluation is as follows:

Writing two programs	- 10 Marks
Execution of one program	- 10 Marks
Formatting the Output	- 05 Marks
Viva	- 05 Marks
Record	- 05 Marks
Total	**- 35 Marks**

BCA605P : PROJECT WORK

Students should individually develop a project. They should implement their project in college in any RDBMS package or any language available in the college. The project should web based. The students have to collect data outside practical hours. Project may be taken outside but must be implemented in the college. Internal marks can be awarded by the guide by evaluating the performance of the students during the course of project work. In viva-voce the questions must be directed only on the project work to access the involvement and understanding of the problem by the students.

The project carries 200 marks is distributed as follows:

Demonstration and Presentation	130 Marks
Viva-voce	50 Marks
Project Report	20 Marks

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PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.A. ENGLISH

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

PROGRAMME PROJECT REPORT

1. INTRODUCTION

The Knowledge revolution, propelled by the twin engines of computer technology and communication technology, has transformed the method of teaching from inside the traditional classroom to virtual class room teaching. This knowledge creation and dissemination through accelerated accessibility of the internet and World Wide Web enhances the connectivity with students across the globe and creates a borderless world on education.

An MA English Literature degree prepares the individuals to operate in any industry where communication in an articulate manner matters. Opportunities for anybody pursuing MA in English in diverse industries is available in abundance. With excellent writing and communication skills, an MA in English Literature can berecruited for a variety of job roles. Most of the opportunities in the future will be in media and communication.

It is estimated that by the year 2024, industries such as digital advertising, print, films, gaming, animation, and many others will see a surge in creativity and innovation skills in the workforce. This means the demand for content creators, copywriters, digital marketers, and others would be high. This would require exceptional writing and analytical skills. Moreover, studying MA English literature canhelp the learners inculcate the skills that are essential for today's global and competitive environment; where analytic, creative, and critical reasoning skills are most advantageous.

2. PROGRAMME MISSION AND OBJECTIVES

2.1 OUR VISION

The Programme endeavors to endure a profound level of critical and resourceful thinking about literature and the society thereby creating a vibrant and responsible learning community of high values with societal coordination.

2.2 OUR MISSION

We commit ourselves to provide every individual a beneficial environment appropriate to accomplish his/her career goals with a strong prominence on English language and literature as well as to offer resources to attain quality education.

2.3 OUR OBJECTIVES

1) In concordance with the institutional objectives, to provide need based education in the discipline to large segments of population through Open and Distance learning mode with the

objective to reach the unreached.

2) To strive to promote equality and social justice and to reduce social and cultural differences through diffusion of education.

3) To bring about critical emancipation among the learners through a rigorous exposure to the language and literature of the established traditions.

4) To provide continuing education to the employed, women, house wives and also to the business people.

5) To provide opportunities of higher learning to under privileged segments of the society so as to harness their unrealized potential.

6) To facilitate establishment of a globally recognized Institution of Open & Distance Learning fully equipped with Information and Communication Technology that empowers its beneficiaries to carry forward the mission of generating scholarship which meets the twin tests of academic excellence and social relevance.

7) To continue to achieve and sustain excellence in all programmes and activities

3. RELEVANCE WITH HEI'S MISSION AND GOALS

In the contemporary world, English is indisputably recognized as the major international language and lies at the pinnacle among all the languages. This makes the pursuit of M.A. English tremendously attractive in today's globalized world. Having a Masters in English, besides knowledge seeking endeavors, also offers a wide scope in terms of employability, the best one being in the field of teaching itself. Taking up a job in a private sector company or an Embassy is yet another innovative prospect. One can also hope to become a promising journalist oropt for civil services with this subject. Besides, one can take up further research in the subject like M. Phil and Ph.D., thus making the pursuit of M.A. English all the more significant and relevant in the present scenario.

4. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The target group comprises of those who generally want to pursue M.A. English programme in order to improve their knowledge about language and literature in themost comprehensive way and also to avail the tremendous job opportunities that the subject of English as a career option offers. Those learners who could not pursue higher education due to employment, financial problems, limited intake inthe formal mode of education, or due to

some other problem form the core target group of learners.

5. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN OL MODE TO ACQUIRE SPECIFICSKILLS AND COMPETENCE

For an inclusive progress of our society, it is imperative that the democratization of the dissemination of knowledge becomes more rigorous. One way to achieve it is through Online education which is reaching the unreached due to technology. It is proving highly beneficial for learners seeking to upgrade their educational qualification. MA English Programme provides ample opportunities in diverse businesses which require reaching out the customers with communication skills.

6. INSTRUCTIONAL DESIGN

6.1 CURRICULUM DESIGN

The Syllabus contains Core Courses (CR) and Department Electives (DE). A student is required to take compulsorily 15 credits of Core courses and 10 credits from a pool of Department Electives from parent Programme in each semester.

6.2 CURRICULUM FOR M.A. ENGLISH

First Year -I							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**
1	MAEL-101	Prose and Short Fiction	5	0	0	5	5
2	MAEL-102	British Poetry-I	5	0	0	5	5
3	MAEL-103	British Drama-I	5	0	0	5	5
4	MAEL-104	Criticism-I	5	0	0	5	5
First Year -II							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**

1	MAEL-105	Fiction	5	0	0	5	5
2	MAEL-106	British Poetry-II	5	0	0	5	5
3	MAEL-107	British Drama-II	5	0	0	5	5
4	MAEL-108	Criticism-II	5	0	0	5	5

Second Year -III							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**
1	MAEL-201	British Poetry-III	5	0	0	5	5
2	MAEL-202	Shakespeare-I	5	0	0	5	5
3	MAEL-203	Indian Writing in English and in English Translation-I	5	0	0	5	5
4	MAEL-204	Indian Aesthetics	5	0	0	5	5
5	MAEL-205	American Literature-I	5	0	0	5	5
Second Year -IV							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**
1	MAEL-206	British Poetry-IV	5	0	0	5	5
2	MAEL-207	Shakespeare-II	5	0	0	5	5
3	MAEL-208	Indian Writing in English and in English Translation-II	5	0	0	5	5
4	MAEL-209	Modern Literary Theory and Criticism	5	0	0	5	5
5	MAEL-210	American Literature II	5	0	0	5	5

Semesters	**Credits**
1	**20**
2	**20**
3	**20**
4	**20**
Total	**80**

7. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTIONS & EVALUATION:

7.1 PROCEDURE FOR ADMISSIONS

1. The admission for the different programmes offered by the University is done by the Institution in consultation with the University.

2. Application forms are invited from the aspirants through online form floated on the University website.

3. Aspirants have liberty to pay the application fee/Admission fee either through online bankingand they are required to submit the hard copies of the form to the institute.

4. Once the deadline for submitting the application form is over, the online submitted application forms are scrutinized and list of all the candidates who has applied will be floated on the website.

7.2 ELIGIBILITY FOR ADMISSION CRITERIA

- Candidates for admission to the M.A. English PG Degree Programme shall have passed any Under Graduate Degree or equivalent examination of any authority, recognized by this university.

6.3. ELIGIBILITY AND DURATION OF THE COURSE

Programme	Eligibility	Duration	Credits
M. A. English	Any UG Degree	2 Years	120

6.4 EVALUATION SYSTEM:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

6.4.1 CONTINUOUS INTERNAL ASSESSMENT "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of theconcerned Course Faculty.

- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

6.4.2 THEORY COURSE ASSESSMENT WEIGHTAGES:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Seminar/Assignments/Project/ Lab	5%	--
4.	Surprise Test / Quiz / Lab	5%	--
5.	End Semester Exam	70%	2 to 3 hours

6. 4.3 GRADING SYSTEM

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good

50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

6.4.4 GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

6.4.5 GRADE SHEET

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester

in each of the course categories.

- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

6.4.6 CLASS/DIVISION

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

6.5 ELIGIBILITY FOR THE AWARD OF M.A. ENGLISH

A student will be declared to be eligible for the award of the M.A. English degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

6.6 RE-VIEW OF ANSWER SCRIPTS / SINGLE VALUATION

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

7. INSTRUCTIONAL DELIVERY MECHANISM

7.1 PERSONAL CONTACT PROGRAMMES

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

7.2 OPTIONAL CONTACT PROGRAMMES

On demand of a sufficient number of students, the Directorate may organize optional contact programmes.

7.3 EXTENSION LECTURES

MPBOU organizes extension lectures to be delivered by eminent scholars ofnational repute from time to time. Students are informed in advance about such extension lectures.

7.4 INDIVIDUAL COUNSELLING AND GUIDANCE

The students can visit the Directorate and seek individual guidance and counselling from the concerned coordinators. Besides, students can seek guidance from the counsellors engaged bythe Centre for Open and Digital Education of MPBOU.

8. MEDIA

8.1 SELF-LEARNING PRINTED MATERIAL

The students will be provided learning material following the four quadrant approach by the

UGC.

8.2 E STUDY MATERIAL & E TUTORIALS

The students are also provided the study material in the e-form which is available on the official website of the institution. Besides, e-Tutorials are also prepared from time to time in accordance with the general and specific theme related contents of the course syllabus. These are also made available on the same website and are offered as a supplement to the Study Material.

9. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARY RESOURCES

Internet Leased Line

BSNL - 1 Gbps – Lease Line Link are available at the university.

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: Institute is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

10. COST ESTIMATE OF THE PROGRAMME

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MA English	5,00000/-	3,00000/-	8,00000/-

11. QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMME OUTCOMES

Centre for Quality Assurance Cell (CIQA) MPBOU created under the NAAC guidelines, is an august body at MPBOU comprising Senior Academicians, Thought Leaders, Eminent Alumni, Industry representative, Retired and Serving Senior Academicians from institutions of repute, Management Representative and a Local Body Member. The CIQA acts as a guiding force to ensure the quality of services and undertake reforms in terms of Infrastructure and Personnel addition. CIQA meets once in three months with a set agenda, for which the inputs are sought from various stake holders such as students, teachers, parents, alumni, administration and management. The CIQA in MPBOU ensures the adoption of qualitative distance education right through all the processes of each programme offered by the university. The salient features of OL programme in MPBOU

are

- Very Strong Industry - Academic Collaboration
- Live class room sessions
- Online virtual class room sessions with one to one interactions
- Highly productive learning environment and digital library access
- Hands on training on latest cutting edge technologies and laboratoryfacilities
- Experiential learning with case studies and mini project
- MOOC courses enabled Curriculum
- Industry focused electives offered by well experienced faculty

M.A. ENGLISH - SYLLABUS
M.A., (PREVIOUS) I – SEMESTER
PAPER-I
STRUCTURE OF MODERN ENGLISH – I

UNIT- I

International Phonetic Alphabet
Phonemic symbols for English
sounds.Phonetic transcription

UNIT-II - PHONETICS & PHONOLOGY

1. T. Balsubramaniam.1981. A Textbook of English Phonetics for Indian Students. Macmillan.
2. Daniel Jones. English Pronouncing Dictionary. 15th edition. CUP.The following topics:

(i) The Organs of Speech
(ii) Classification of Speech Sounds English – Vowels & Consonants
(iii) Consonant Clusters

UNIT – III - PHONETICS AND PHONOLOGY

The following topics:
(i) The Syllable
(ii) Word- Accent
(iii) Accent & Rhythm in Connected Speech
(iv) Intonation

UNIT – IV – INTRODUCTION TO LINGUISTICS

1. David Crystal.1990. Linguistics. Penguin.
2. George Yule.1996. The Study of Language. 2nd edition, CUP.

The following topics:
(i) Human Language and animal communication
(ii) Definition & Scope of Linguistics
(iii) Branches of Linguistics & Applied Linguistics
(iv) Traditional Approaches to language study

UNIT – V – INTRODUCTION TO LINGUISTICS

The following topics:
(i) Basic assumptions of Modern linguistics
(ii) Language Varieties: Dialect, Idiolect, Register and Style.

(iii) Notions of Correctness & Acceptability.

***

M.A. ENGLISH- SYLLABUS

M.A., (PREVIOUS) I – SEMESTER

PAPER – II - POETRY- I

UNIT – I

Middle English Period, Renaissance Humanism and Empiricism, Puritanism, Metaphysicalconceits, Neoclassicism, Romantic Revival, Influence of French Revolution and Platonic Idealism,
Poetic forms: Epic, Mock-epic, Augustan Satire, Elegy, Lyric & Ode, Dramatic Monologue,

UNIT II

John Milton : Paradise Lost, Book I

UNIT III

John Keats : Ode on Grecian Urn, Ode to a Nightingale, Ode to Autumn,

Shelley : Ode to Skylark, Ode to West Wind

UNIT IV

John Donne : “The Sun Rising”, “The Ecstasy”.

Alexander Pope : “The Rape of the Lock”

UNIT V

William Wordsworth: Prelude Book 1

Robert Browning : “The Last Ride Together”, “My Last Duchess”,

***

M.A. ENGLISH - SYLLABUS
M.A., (PREVIOUS) II – SEMESTER
PAPER -I
STRUCTURE OF MODERN ENGLISH - II

UNIT-I: GRAMMAR

1. Randolph Quirk and Sidney Greenbaum.1973. A University Grammar of the EnglishLanguage. Longman Pearson.

The following Chapters:

1. Varieties of English
2. Elements of Grammar
3. Verbs and the Verb Phrase

UNIT – II : GRAMMAR

The following Chapters:

4. Nouns, pronouns and the basic noun phrase
5. Adjectives and Adverbs
6. Prepositions and prepositional phrases

UNIT – III: GRAMMAR

Grammar – Correction of Sentences from the chapters prescribed.

UNIT-IV: INTRODUCTION TO ENGLISH LANGUAGE TEACHING

1. Jack Richards & Theodore Rodgers.2001.Approaches and Methods in LanguageTeaching.OUP.

2. H.H. Stern.1983. Fundamentals of Language Teaching.OUP.

The following topics:

(i) Fundamentals of Language Teaching: objectives, materials, methods, evaluation.
(ii) First language and second language.
(iii) Grammar Translation Method & Bilingual Method
(iv) Direct Method.

UNIT – V INTRODUCTION TO ENGLISH LANGUAGE TEACHING

(v) Audio-lingual Method
(vi) Situational Language Teaching
(vii) Communicative Approach

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M.A. ENGLISH – SYLLABUS
(PREVIOUS) II
SEMESTERPAPER – II,
POETRY– II

UNIT - I

Modernism, Symbolism, Imagism, Irish Nationalism, Poetry of Disillusionment,Poetry of the Thirties, Movement Poetry, Developments in Poetic Technique, Influence of modern Psychology,

UNIT - II

W. B. Yeats : "Sailing to Byzantium", "A Prayer for My Daughter","The Second Coming", "Among School Children".

UNIT - III

T. S. Eliot : The Waste Land

UNIT - IV

Dylan Thomas : "Fern Hill".

"Do not Go Gentle into That Good Night".

Thom Gunn : "In Santa Maria De Popoto", "Rites of Passage" "On the Move"

UNIT - V

Ted Hughes : "The Jaguar", "Thrushes", "Out",

Seamus Heaney : "Death of a Naturalist", "Digging", "Punishment".

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M.A. ENGLISH -NEW SYLLABUS
M.A., (FINAL) III – SEMESTER
PAPER - I
LITERARY CRITICISM – I

UNIT I

**** Brief Introduction to Aeschylus, Sophocles, Euripides, Aristophanes & Socrates.Plato : Theory of Ideas & 'The State' from Republic.
Aristotle : Rhetoric & Poetics
Longinus : On the Sublime
Plotinus : On the Intellectual Beauties.

UNIT II

Philip Sidney : An Apology for Poetry
Francis Bacon : The Advancement of Learning
John Dryden : An Essay on Dramatic Poesy
Alexander Pope : An Essay on Criticism.

UNIT III

Samuel Johnson : Preface to Shakespeare
William Wordsworth : Preface to the Second Edition of Lyrical BalladsSamuel Taylor Coleridge : Biographia Literaria
P.B.Shelley : A Defence of Poetry.

UNIT IV

Mathew Arnold : The Function of Criticism & Touchstone Method.
T.S. Eliot : Tradition and Individual Talent
I.A. Richards : Four Kinds of Meaning

UNIT V

W.K.Wimsattt&Monroe Beardsley: The Intentional Fallacy, The Affective Fallacy,William Empson : The Seventh Type of Ambiguity
Cleanth Brooks : Irony as a Principle of Structure

Resources:

1. Martin Tucker: A Library of Literary Criticism.
2. Patricia Waugh: Literary Theory & Criticism : An Oxford Guide.
3. M.S.Naagarajaw: English Literary Criticism & Theory2006.

M.A. ENGLISH –
SYLLABUSIII SEMESTER
PAPER – II, COMMUNICATIVE ENGLISH - I

UNIT – I

Language and Communication:

Nature & Definition of Communication

Process of Communication - Participants, Message, Purpose/Channel, topic, context, Barriers inCommunication.

Types of Communication Personal or Intrapersonal, Interpersonal, Organizational, Mass Communication, Social Communication, Group Communication.

Prescribed Text:

Leena Sen.2007. Communication Skills. New Delhi : Prentice Hall Pub.

Asha Kaul.2007.Effective Business Communication. New Delhi: Tata McGraw Hill Pub.

UNIT – II

Verbal & Non-verbal Communication:

Language and Communication: sign language. Body-Language.

Language Functions: Greeting, apologizing, requesting, offering help, inviting,agreeing/disagreeing etc.

Prescribed Text:

Leena Sen.2007. Communication Skills. New Delhi : Prentice Hall.
Part 3 - Non-verbal Communication

Board of Editors.2007. Written and Spoken Communication in English. Universities Press.

UNIT – III

Language Skills:

Listening: Types of listening, Purpose of listening

Speaking: Distinguishing between problem speech sounds, stress & intonation.

Reading: Skimming, Scanning, Inferring meaning, Predicting, Intensive and Extensive reading.Writing: Letters, reports, business letters, circulars, announcements, invitations, minutes,etc.

Prescribed Text:

Communication Skills: A Multi-Skill Course .2008. Bharathiar University, Chennai, MacmillanPublishers. Chapters – I and III

Sanjay Kumar and Pushp Lata.2013.English for Effective Communication. OUP.

UNIT – IV

Vocabulary in use:
Word formation, Idioms & Phrases, Denotative & Connotative meaning, synonyms & Antonyms, One-word Substitutes, Spelling, Using words as different Parts of Speech, Contextualmeaning.

Prescribed Text:
Hari Mohana Prasad and Uma Rani.2014. Objective English. New Delhi: Tata Mc Graw HillPublication. Chapters 14, 15, 19, 20, 24.
Krishna Mohan & Meenakshi Raman.2000. Effective English Communication. New Delhi: TataMc Graw Hill Pub.

UNIT – V

Functional Grammar:
Basic sentence structures, Articles, Tenses, Prepositions, Concord, Number, Transformation ofsentences, Active/Passive, Direct/Reported … etc.

Prescribed Text:
Krishna Mohan and Meenakshi Raman. 2000. Effective English Communication, New Delhi,Tata Mc Graw Hill Publication. Chapters 14 to 18.
Board of Editors.2007. Written and Spoken Communication in English. Universities Press.

Suggested Reading:

1. N.D. Turton and J.B. Healon.1996. Dictionary of Common Errors. Glassgow:Longman Publishers.
2. Alan Barker.2007. Improve Your Communication Skills. New Delhi: Kogan PageIndia Ltd.
3. John Sealey.1987. The Oxford Guide to Effective Writing and Speaking. London:Oxford Press.
4. Krishna Mohan and Meera Benerji.1990. Developing Communication Skills. NewDelhi: McMillan.
5. Allan, Pease. 2007. Body Language. London, Sheldon Press. Reprinted in India,Competition Review, New Delhi.

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M.A. ENGLISH – SYLLABUSIII SEMESTER PAPER - III, INDIAN WRITING IN ENGLISHUNIT – I

Early Indo-Anglian poetry, Romantic poetry, Mysticism, Metaphysics, The rise of the Indian Novel in English, Impact of Freedom Movement, the Gandhian ethos, post – Independence poetry, Indian drama in English, Novel of propaganda, Social realism, Myth and folklore, the Philosophical novel, the Psychological novel.

UNIT – II

Sarojini Naidu : The Temple

R. Parthasarathy (ed) : Ten Twentieth Century Indian Poets
Oxford University Press,
IndiaThe following poems:

a) Nissim Ezekiel : (i) "Poet, Lover, Bird Watcher".
(ii) "Enterprise".

b) A.K. Ramanujan : (i) "Smallscale Reflections on a Great House".
(ii) "A River".

c) R. Parthasarathy : "Home coming – Sections 1, 3 & 4.

UNIT – III

Ravindranath Tagore : Chitra
Girish Karnad : Hayavadana

UNIT – IV

Mulk Raj Anand : Untouchable
R.K. Narayan : The Man-Eater of Malgudi.
Anita Desai : Fire on the Mountain

UNIT – V

Raja Rao : Cow of the Barricades- Short Story.
Dr. B. R. Ambedkar : "Role of Dr. B. R. Ambedkar in Bringing Untouchable on the Political Horizon of India and Laying a Foundation of IndianDemocracy"

Source:
From **Dr. B. R. Ambedkar's Writings and Speeches Vol. 17Part-I** (Dr. B. R. Ambedkar Course Material Publication Committee Unit of Maharashtra 2003).

Swami Vivekananda : Chicago Lecture in the Parliament of Religions.

M.A. ENGLISH - SYLLABUS
M.A., (FINAL) III – SEMESTER
PAPER - IV
AMERICAN LITERATURE - I

UNIT – I

Transcendentalism, Influence of Vedic Thought, Puritanism, Beginnings of the AmericanNovel, The Frontier Experience, Mysticism, the Picaresque novel, Romanticism, Nationalism.

UNIT II

Walt Whitman : When Lilacs last in the Dooryard Bloomed
Out of the Cradle Endlessly Rocking

Emily Dickinson :67, 328, 341, 511, 640, 712,1732.

UNIT III

R.W. Emerson : “The American Scholar”, “Self Reliance”

UNIT IV

Henry David Thoreau : Walden

UNIT V

Mark Twain : Huckleberry Finn

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M.A. ENGLISH –
SYLLABUSIII SEMESTER,
OPTIONAL PAPER – V (c): ENGLISH LANGUAGE TEACHING - I

UNIT – I

History of English Language Teaching; Theories of Language and Language-Learning-Behaviorism, Cognitivism, Structural, Interactive.

UNIT – II

Different Approaches and Methods in Language Teaching including Humanistic approaches;The Silent Way, Suggestopedia, Total Physical Response.

UNIT – III

Curriculum and Syllabus: Difference between Curriculum and Syllabus; Different Types ofsyllabuses.

UNIT – IV

Teaching of Language Skills; Listening, Speaking, Reading and Writing.

UNIT – V

Testing and Evaluation; Types of Tests.

Suggested Reading:

1. Penny UR, **A Course in Language Teaching**, 1996, New Delhi, Oxford UniversityPress.
2. Keith Johnson, **Language Teaching and skill Learning**, 1966, Oxford: Blackwell Publishers.
3. Brumfit, C.J.K. Johnson (1994). **The Communicative Approach to Language Teac**hing, New Delhi,Oxford: Oxford University Press.
4. Richards, Jack C. Theodore S. Rodgers, 1995, **Approaches and Methods in Language Teaching**, NewDelhi, Cambridge University Press.
5. Nunan, D. 1988. **The Learner-Centred Curriculum**, New Delhi: Cambridge University Press.
6. Saraswathi, V, 2004. **English Language Teaching**, Principles and Practice. Chennai: Orient Longman.
7. Stem, H.H. 1983. **Fundamental Concepts of Language Teaching**, Oxford University Press.
8. Geetha Nagaraj, 1996, **English Language Teaching: Approaches, Methods, Techniques**, Hyderabad:Orient Longman.
9. Tickoo M.L. 2003. **Teaching and Learning English**, New Delhi: Orient Longman.
10. J Carrol & P. Hall, **Make Your Own Language Tests: A Practical Guide to Writing LanguagePerformance Tests.**
11. Richards Jack C and Willy A. Renandya Ed. 2002, **Methodology in Language Teaching,** New Delhi:Cambridge University Press.
12. Geetha Nagaraj **English Language Teaching, Approaches Methods and Techniques** , Orient LongmanKolkata.
13. M.L.Tickoo **Teaching and learning English**, Orient Longman, New Delhi.

M.A. ENGLISH – SYLLABUS
IV SEMESTER
PAPER – II, COMMUNICATIVE ENGLISH - II

UNIT – I

Varieties of English:
Dialects; Register & Style – law, science, religion, advertising, journalism,Sports etc;Styles- formal/informal/Netural.

Prescribed Text:

David Crystal & Derek Davy.1969. Investigating English Style. Longmans.Hasan Ghazala.1994. Varieties of English Simplified.2nd Edition. ELGA.

UNIT – II

Discourse:
a) Coherence, Cohesion, Discourse Markers, Linking Words
b) Identifying writer's intention from the text; Context, purpose & occasion.
c) Paragraph structure & development or elaboration.

Prescribed Text:

Randolph Quirk & Sidney Greenbaum.1973. A University Grammar of English.LongmanPearson.
Liz Hamp-Lyons & Ben Heasley.2006.Study Writing. Cambridge University Press.

UNIT – III

Oral Communication:
Group discussions, Debates, Interviews, Extempore speeches,
Soft skills.The art of Public Speaking at Seminars and Conferences.
Telephone Conversation Skills.
Use of Stress and Intonation for clarity and meaning.

Prescribed Text:

Krishna Mohan and Meera Benerji.1990. Developing Communication Skills. New Delhi;Macmillan. Chapters 6, 8 and 11.
Sanjay Kumar and Pushp Lata. 2013.English for Effective Communication.OUP.Chapters 2,5,6 &7.

UNIT – IV

Written Communication & composition.
Types of writing: Expository, Descriptive, Argumentative, Imaginative, Reporting, Narrative,andAutobiographical.

Prescribed Text:

Board of Editors.2007. Written and Spoken Communication in English. Universities Press.John Sealey.1987.The Oxford Guide to Effective Writing and Speaking. London: OUP.
Chapter 14. "Different ways of Communicating".

UNIT – V

Literary English & Rhetoric.

Identifying the Theme, Register, Tone, Point of view, Imagery, Allusions, Style, Indirection,Figures of speech, etc.

Prescribed Text:

C.R.E. Parker.1967. Advanced Work in English. Longmans.
H.L.B. Moody .1971. The Teaching of Literature. Longman Handbook for Language Teachers.

Suggested Reading:

1. Alan Barker.2007. Improve Your Communication Skills.New Delhi: Kogan Page IndiaLtd.
2. Krishna Mohan and N.P. Singh .1995. Speaking English Effectively. New Delhi:Macmillan.
3. Michael Swan. 2003. Practical English Usage. CUP.
4. Ashraf Rizvi. 2005.Effective Technical Communication. New Delhi: Tata McGraw HillPub.
5. Priyadarshi Patnaik. Group Discussion and Interview Skills (Book with VCD),Cambridge University Press, India.
6. Stephen, Mc Laren.2003. Easy Writer: Student's Guide to Writing Essays and Reports.New Delhi: Viva Books Pvt.

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M.A. ENGLISH - SYLLABUS

M.A., (FINAL) IV –

SEMESTERPAPER- IV

AMERICAN LITERATURE - II

Unit – I

Nature Poetry, Imagism, Confessional Poetry, Feminist concerns, Modernism and Postmodernism, Theme of Alienation, Searching for Roots, Black Literature, Existentialism in drama, Absurd Drama, Realism and Naturalism, Expressionistic drama, Dramatic techniques,

Unit II

Wallace Stevens "Sunday morning" "Of Modern Poetry" "Peter Quince at the Clavier"

Robert Frost : "Road Not Taken" "Birches", "Stopping By Woods""Mending Wall".

Unit III

Eugene O' Neill : The Hairy Ape
Sylvia Plath : "Poppies in

July".

Unit

IV

Edward Albee : Who's Afraid of Virginia Woolf?
Arthur Miller : Death of a

Salesma

nUnit V

Ernest Hemingway : The Old Man and the Sea
Ralph Ellison : The Invisible Man

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MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

B.Sc (Data Science)

(from Calendar Year 2023)

Submitted to

UGC, DISTANCE EDUCATION BUREAU (DEB)

New Delhi

For seeking approval to introduce new programme through ODL

Contents

B.Sc (Data Science)
Choice Based Credit System (CBCS)
(With effective from June 2023-24 onwards)

a) Programme mission and objectives

Mission:

It provides a strong foundation in the theoretical concepts of Data Science as well as a firm grounding in Programming Languages. It is designed to enable one to undertake software applications for business and industry. Successful candidates could also opt for a teaching career in secondary schools.

Objectives:

The programme aims at inculcating essential skills as demanded by the industry through an interactive learningprocess. The broad objectives of the programme are:

- To train students in basic computer technology concepts and information technology applications.
- To enhance their career opportunities in the software development and maintenance sector in the state.
- To expose the students to Open Source Technologies so that they become familiar with it and can seekappropriate opportunity in trade and industry.
- To give hands on experience to students while developing real life IT application as part of the study.
- To augment the knowledge base of the students, through various activities which will be complementary to thetheoretical studies.

Outcome:

- To widen the ability to plan, analyze, design, code, test, implement & maintain a software product for real timesystem
- To prepare the learners to pursue higher studies in computing or related disciplines and to work in the fields ofteaching and research
- Pursuing B.Sc (DS) in this Computer oriented and technology driven era opens up a large number of job opportunities for the students. With in depth knowledge of Computer Application, Computer system, and software, the students can seek employment as Computer operator, Software Engineer, Application Specialist, Computer operator, Computer Teacher/ Instructor.

b) Relevance of the program with HEI's mission and goals

HEI's mission and goals to be offered through distance mode to reach quality higher education to the rurallearners. The distance mode meets the mission of HEI's like Digital India and paper-less transaction will enrich thehuman resources for the uplift of the nation.

c) Nature of prospective target group of learners

The nature of prospective target group of learners is graduates from various disciplines like mathematics,physics, chemistry, electronics etc. It also includes the learners who want to become Entrepreneurs like webdesigners, Developers etc.

d) Appropriateness of programme to be conducted in open and distance learning mode toacquire specific skills and competence:

B.Sc CS programme through distance learning mode is developed in order to give subject specific including a)Digital computer organization b) Operating Systems c) Computer Graphics d) Unix and shell programming etc.

e) Instructional Design

e.1 Regulations and curriculum design

1. The University reserves the rights to amend the regulations, schemes of examinations and syllabi from time totime based on recent IT trends
2. Every student should secure 96 credits to complete B.Sc Data Science programme.
3. Each theory course carries 4 credits with 75 marks in the university end semester and 25 marks in the internal assessment and each practical (lab) course carries 4 credits with 75 marks in the university end semester examination and 25 marks in the internal assessment.

Programme Code: BSCDC130

COURSE OF STUDY AND SCHEME OF EXAMINATION

I SEMESTER

S.No	Subject Code	Title	CIA marks	ESE marks	Total Marks	credits
1	13011 A / B	Part I: Communication Skills I	25	75	100	4
2	13012	Part II: English Paper I	25	75	100	4
3	13013	Programming in C	25	75	100	4
4	13014	Lab : Programming in C	25	75	100	4
			100	300	400	16
II SEMESTER						
S.No	**Subject Code**	**Title**	**CIA marks**	**ESE marks**	**Total Mark**	**credits**

					s	
1	13021 A / B	Part I: Communication Skills- II	25	75	100	4
2	13022	Part II: English Paper- II	25	75	100	4
3	13023	Object Oriented Programming and C++	25	75	100	4
4	13024	Lab : Object Oriented Programming and C++	25	75	100	4
		Total	100	300	400	16

III SEMESTER

S.No	Subject Code	Title	CIA marks	ESE marks	Total Marks	credits
1	13031 A / B	Part I: Paper : Human Skill Development- I	25	75	100	4
2	13032	Part II: English Paper- III	25	75	100	4
3	13033	Data Structures and Algorithms	25	75	100	4
4	13034	Lab : Data Structures and Algorithms	25	75	100	4
		Total	100	300	400	16

IV SEMESTER

S.No	Subject Code	Title	CIA marks	ESE marks	Total Marks	credits
1	13041 A / B	Part I: Human Skill Development- II	25	75	100	4
2	13042	Part II: English Paper IV	25	75	100	4
3	13043	Java Programming	25	75	100	4
4	13044	Lab : Java Programming	25	75	100	4
		Total	100	300	400	16

V SEMESTER

S.No	Subject Code	Title	CIA marks	ESE marks	Total Marks	credits
1	13051	Operating Systems	25	75	100	4
2	13052	Relational Database Management Systems	25	75	100	4
3	13053	Computer Architecture	25	75	100	4
4	13054	Lab : RDBMS	25	75	100	4
		Total	100	300	400	16

VI SEMESTER

S.No	Subject Code	Title	CIA marks	ESE marks	Total Marks	credits
1	13061	Computer Network	25	75	100	4
2	13062	Visual Basic Programming	25	75	100	4
3	13063	Software Engineering	25	75	100	4
4	13064	Lab : Visual Basic Programming	25	75	100	4
		Total	100	300	400	16
			600	1800	2400	64

CIA: Continuous Internal Assessment **ESE**: End Semester Examination

Course Code Legend:

1	3	0	X	Y

XXX –

Programme code

for B.Sc CSX –

Semester Number

Y – Course Number in the Semester

No,of Credits per Course (theory) 4

No.of Credits per Course (practical) 4

Total No.of credits per Semester 16

Total No.of credits of the programme: 16 * 6 = 96

e.2 Detailed Syllabi : The detailed Syllabi shown in Appendix

e.3 Duration of the Programme:

The B.Sc Data Science programme shall consist of a period of Three years (Six Semesters).

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

S.No	Staff Category	Numbers
1	Computer Science Subject Core Faculty*	3
2	Inter-disciplinary Subject Faculty* (Mathematics, Account & Financial Management and Communication Skills)	2
3	Lab Assistant	1
4	Clerical Assistant	1

* Faculty at least in Assistant Professor level

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of CD, e-book, e-tutorials, Massive Open Online Courses (MOOC) courses, Open Educational Resources(OER) and virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, E-tutorial and virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post-admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal

(f) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the B.Sc (Data Science) programme shall be required to have passed the following examinations. Candidates who have passed HSC or 3 year Diploma from recognized institution shall be eligible.

Lateral Entry to II year B.Sc. (CS): 3 year Diploma in Data Science Engineering, Information Technology, Electronics and Communication Engineering, Electrical and Electronics Engineering

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**Face to face contact session per semester (in Hours)**
Theory courses (3 Courses with 4 credits each)	48
Practical courses (1 Courses with 4 credits each)	120
Total	**168**

f.3 *Evaluation*

The examinations shall be conducted separately for theory and practical's to assess the knowledge acquired during the study. There shall be two systems of examinations viz., internal and external examinations. In the case of theory courses, the internal evaluation shall be conducted as Continuous Internal Assessment via. Student assignments preparation and seminar, etc. The internal assessment shall comprise of maximum 25 marks for each course. The end semester examination shall be of three hours duration to each course at the end of each semester. In the case of Practical courses, the internal will be done through continuous assessment of skill in demonstrating the experiments and record or report preparation. The external evaluation consists of an end semester practical examinations which comprise of 75 marks for each course.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook, case studies, review questions, quiz, multiple choice questions etc., for 25 marks.

- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.

- The learners should submit home assignment with worksheet for each course (Theory and Practical's) to **The Director, Directorate of Distance Education**

(DDE), Madhya Pradesh Bhoj Open University Only along with response sheet contains name of the programme, name of the student, enrolment number, course name and subject code.

- Learners should submit home assignments of each courses both theory and practicals at least one month before the commencement of end semester examination of every semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment**	**Marks**
Review questions	15	Algorithm Design	15
Workbook, case studies, multiple choice questions	10	Workbook for preparing source code, PL/SQL coding , results	10
TOTAL	25	TOTAL	25

End Semester Examination

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

Learners shall prepare practical record note book according to the following guidelines; aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

f.3.1 Minimum for a pass:

- For internal Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (25) prescribed for UG and PG Courses.
- For External Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (75) prescribed for UG and PG Courses.
- In the aggregate (External + Internal), the passing minimum shall be 40% for UG and 50% for PG courses.

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Answer ALL questions

One question from each unit from the course syllabi

Part – A (10 x 2 Marks: 20 Marks)

Part – B (5 x 5 Marks: 25 Marks) (Internal Choice)

Part – C (3 x 10 Marks: 30 Marks) (Internal Choice)

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for

the B.Sc (DS) degree only if he/she passes all the (including arrears) courses with in a period of FIVE years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate

Range of Marks	Grade Points	Letter Grade	Description
90-100	9.0 - 10.00	O	Outstanding
80-89	8.0 - 8.9	D+	Excellent
75-79	7.5 - 7.9	D	Distinction
70-74	7.0 - 7.4	A+	Very Good
60-69	6.0 - 6.9	A	Good
50-59	5.0 - 5.9	B	Average
00-49	0.00	U	Reappear
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average [GPA] = $\sum C_i G_i / \sum C_i$

Grade Point Average = Sum of the multiplication of Grade points by the credit of the courses

Sum of the credit of the courses in the semester

= Sum of [Credit earned x Grade Points]

Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n \sum_i C_{ni} G_{ni} / \sum_n \sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme

CGPA	Grade	Classification of Final Result
9.5 – 10.00	O+	First class – Exemplary*
9.0 and above but below 9.5	O	
8.5 and above but below 9.0	D++	First class with Distinction*
8.0 and above but below 8.5	D+	
7.5 and above but below 8.0	D	
7.0 and above but below 7.5	A++	First Class
6.5 and above but below 7.0	A+	
6.0 and above but below 6.5	A	
5.5 and above but below 6.0	B+	Second Class
5.0 and above but below 5.5	B	
0.0 and above but below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Amount in (Rs)		
	First Year	Second Year	Third Year
Admission Processing Fees	100	--	--
Course Fees	8,300	8300	8300
ICT fees	150	150	150
Total Fees	8550	8450	8450

The above mentioned fees structure is exclusive of examination fees.

(g) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well-equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme. Model Practical Questions is available to the learners in the university website.

g.2 Library Resources

The Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Data Science programmes. The Central library of University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(h) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development(Single Time Investment)	20,00,000/-
Programme delivery(Per Year)	24,00,000/-

Programme maintenance	5,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(a) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university maydetermine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast directionand skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

A Bachelor of Data Science program typically aims to provide students with the knowledge and skills necessary to work in the field of data science. The expected program outcomes may include:

- Knowledge of Data Science: Graduates should have a deep understanding of the concepts, principles, and methods of data science. This includes knowledge of statistical techniques, machine learning algorithms, and programming languages commonly used in data science.
- Ability to Collect and Analyze Data: Graduates should be able to collect, clean, and transform data, and apply appropriate statistical and machine learning techniques to extract insights from the data.
- Programming Skills: Graduates should have proficiency in programming languages such as Python, R, SQL, and other relevant tools and technologies

used in data science.

- Data Visualization and Communication Skills: Graduates should be able to communicate insights and findings from data analysis effectively through visualizations, reports, and presentations.
- Domain Expertise: Graduates should have knowledge in a specific domain such as business, healthcare, or finance, and be able to apply data science techniques to solve real-world problems in that domain.
- Critical Thinking and Problem Solving Skills: Graduates should be able to analyze complex problems, identify relevant data, and use data-driven methods to solve problems.
- Ethical and Legal Considerations: Graduates should have an understanding of the ethical and legal implications of data science, including privacy, security, and bias issues.
- Lifelong Learning: Graduates should have the ability and motivation to continue learning new data science techniques and tools throughout their careers.

SEMESTER I

Course Code	Title of the Course
13011B	**PART- I : COMMUNICATION SKILLS I**

Learning objectives:

1. To make students to understand the basic skills of Communication.
2. To acquaint students with the important features of Communication skills.

BLOCK I: COMMUNICATION: AN INTRODUCTION

Unit - I Communication – Meaning – Types- Importance

Unit – II Barriers to Effective Communication – Principles – Principles ofEffective Communication

BLOCK II: ORAL COMMUNICATION

Unit – III Oral Communication – Meaning – Importance-Forms of OralCommunication

Unit – IV Intonation –Meaning – Function- TypesPreparation of Speech- Steps Involved

Unit – V Principles of Effective Oral Communication

BLOCK III: WRITTEN COMMUNICATION

Unit – VI Written Communication – Meaning –Steps – Importance-Advantages Useof words and Phrases

Unit – VII Sentence – Meaning –Sentence formation-Characteristics of anEffective Sentence

Unit–VIII Paragraph Writing –Essay Writing –Steps Involved –Outline-Layout – Contents-Drafting-Correction- Final Draft

BLOCK IV: OFFICIAL COMMUNICATION

Unit – IX Application for Employment and Curriculum Vitae –Steps involved

Unit – X Non –Verbal Communication – Meaning –Types –Body Language –Postures-Gestures –Facial Expressions –Eye Contact

Unit – XI Report Writing –Report –Types of Reports –Format of a Report

Unit – XII Essentials of a Good Report –Preparation of Report-Procedure Involved

Unit – XIII *Meetings-Purpose of the Meeting – Procedure*

Unit–XIV Group Discussion–Quality of Content-Participation –Logical Presentation –Behavioura

References:

1. Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
2. Geetha Nagaraj, Write to Communicate, 2004.
3. Wren & Martin, English Grammar and Composition, 2002.
4. Dale Carnegie, How to Win Friends and Influence People, 1981.
5. Dale R Jordan, Language Skills and Use.
6. Gartside L. Bahld, Nagammiah and McComas, Satterwhite, Modern Business Correspondence.
7. Rajendra Pal and Kortahalli J S, Essentials of Business Communication.
8. Wallace, Michael J, Study Skills in English.
9. Editors of Readers Digest, Super Word Power.

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Course Code	Title of the Course
13012	Part- II: English Paper I

Learning objective:

To make the students master the different topics prescribed in the Prose, Grammar and Composition.

BLOCK I: PROSE I

Unit – I	Water-the Elixir of life	- C.V. Raman
Unit – II	Mrs. Packletide's Tiger	- SAKI
Unit – III	A Deed of Bravery	- Jim Carbett
Unit – IV	The Cat	- Catharine M.Willson
Unit – V	On Letter Writing	- Alpha of the Plough
8		
Unit – VI	Our Ancestors	- Carl Sagan
Unit – VII	Our Civilization	- C.E.Foad
Unit – VIII	A Hero on Probation	- B.R. Nanda
Unit – IX	Dangers of Drug Abuse	- Hardin B. Fones
Unit – X	Food	- J.B.S. Haldane

BLOCK III: DEVELOPING GRAMMATICAL SKILLS

Unit – XI - Articles-Gerunds-Participles-Infinitives-Modals-Proposition- Tenses

Unit – XII - Direct and Indirect Speech-Transformation of sentences- Active andpassive voice.

BLOCK IV: DEVELOPING WRITING SKILLS

Unit – XIII - Letter writing - Precis writing - Developing hints.

Unit – XIV - Dialogue writing - Paragraph writing.

References:

1. Sebastian D K, Prose for the Young Reader, Macmillan.
2. Active English Grammar, Ed. by the Board of Editors, Macmillan.
3. Modern English – A Book of Grammar Usage and Composition by N.Krishnaswamy, Macmillan

Course Code	Title of the Course
13013	Programming in C

Course Objectives:

- To provide an overview of working principles of C language.
- To understand and apply the functions, arrays, pointers.
- To implement the features of C language in real world applications

Course Outcome:

- Able to understand the C programming techniques

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	**Introduction and Features**: History of C, Importance of C, Basic Structure of C program, character set, Tokens, keywords and identifiers
2	**Constants and variables and data types:** declaration of variables, defining symbolic constants, declaring a variable as a constant
3	**Operators and expressions:** arithmetic, relational, logical, assignment operators, arithmetic expression, Evaluation of expressions, precedence of arithmetic operators
	BLOCK 2 : I/O OPERATIONS AND DECISION MAKING
4	**Managing I/O operations:** reading and writing a character, formatted input, output
5	**Decision making and branching:** IF statement, If..else statement, nesting if else statement, else if ladder, switch statement, goto statement, while statement, do statement, for statement
6	**arrays:** one-dimensional arrays, declaration, initialization, two dimensional arrays, multi dimensional arrays, dynamic arrays
7	**Strings :** Declaration, Initialization of string variables, reading and writing strings, string handling functions
	BLOCK 3 : USER DEFINED FUNCTIONS
8	**Functions basics:** Elements of user defined functions, definitions, return values and their types, function calls, declaration, nesting of functions, recursion
9	**Structures and Unions:** Defining a structure, declaring a structure variable, accessing structure members, array of structures, array within structures, structures within structures, structures and functions
	BLOCK 4 : POINTERS
10	**pointers:** Basics, declaring, initialization of pointer variables, address of variable, accessing a variable through its pointer
11	**Pointer as Functions:** Chain of pointers, pointer increments and scale factors
12	**Strings with Pointer:** pointers and character strings, pointers and structures
	BLOCK 5 : FILES

13	**Introduction:** Introduction, Defining, opening and closing files, I/O operations on files
14	**Error Handling methods:** Error Handling during I/O operations, command line arguments

TEXT BOOK:

1. Programming with C, Schaum outline series, Gottfried, TataMcHill,2006
2. Programming with ANSI and Turbo C, Ashok N Kamthane, Pearson Education, 2006

REFERENCE BOOK:

1. C: The complete reference,H Schildt, TMH Edition, 2000
2. Kanetkar, Let Us C, BPB publications, 1999.

Course Code	Title of the Course
13014	Lab : Programming in C

Course Objectives

- To be able to solve real world problems using C language
- To learn and implement C language programming techniques

Course Outcome

- Students can develop programming knowledge
- Students can solve any kind of problems using C language

Unit No.	Contents
	BLOCK 1: C PROGRAM FUNDAMENTALS
1	Simple C programs
2	Using IF and switch constructs programs
3	Looping related problems
	BLOCK 2 : FUNCTIONS, ARRAYS, STRINGS
4	Programs using functions
5	IF statement, If..else statement, nesting if else statement, else if ladder, switch statement, goto statement, while statement, do statement, for statement
6	One-dimensional arrays, two dimensional arrays, multi dimensional arrays
7	Initialization of string variables, reading and writing strings, string handling functions
	BLOCK 3 : STRUCTURE AND UNIONS
8	Programs using structures
9	Programs using unions
	BLOCK 4 : POINTERS
10	Initialization of pointer variables, address of variable, accessing a variable through its pointer
11	Pointer as Functions
12	Strings with Pointer: pointers and character strings, pointers and structures
	BLOCK 5 : FILES
13	Programs based on file handling
14	Error Handling methods: Error Handling during I/O operations, command line arguments

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Course Code	Title of the Course

13021 B	PART-I : COMMUNICATION SKILLS - II

Learning objectives:

1. To make students understand the basic skills of Communication.
2. To acquaint students with the important features of Communication skills.

BLOCK I: INTRODUCTION TO COMMUNICATION SKILLS

Unit – I Code and Content of Communication Skills

Unit– II Stimulus and Response of Communication Skills

BLOCK II: SPEAKING SKILLS

Unit – III Effective Speaking Guidelines

Unit – IV Pronunciation Etiquette of Communication Skills

Unit – V Phonetics in Communication Skills

BLOCK III: LANGUAGE SKILLS

Unit – VI A self Assessment of Communicating Soft Skills

Unit – VII Language Skills –Ability –Skill Selected Need- Learner Centre activities

Unit – VIII Listening Skills –Importance –Types of Listening- Interview Skills

Unit – IX Conversation Skills –Modes

Unit – X Presentation Skills - Preparing –Planning-Presentation

BLOCK IV: WRITING SKILLS

Unit – XI Written Communication –Structure of Effective Sentences –Paragraph

Unit – XII Technical Writing-Creative Writing- Editing and Publishing

Unit – XIII Corporate Communication Skills-Internal –Effective business writing –Letters, Proposals, Resume

Unit – XIV Corporal Communication Skills-External - Press release - Newsletters-Interviewing skills

References:

1. Dutt. Kiranmai & Geeta Rajjevan. Basic Communication Skills. Rev.ed. Foundation Books Pvt.Ltd.Cambridge House, New Delhi 2006.
2. Bill R. Swetmon. Communication Skills for the 21st Century. Chennai: Eswar Press. First South AsianEdition 2006.
3. Glass. Lillian. Talk to Win. New York: Perigee Books,1987.

4. Pease. Alan. Signals: How to Use Body Language for Power, Success and Love, New York: BantamBooks, 1981.
5. Walters. Lilly. Secrets of Successful Speakers. New York: McGraw-Hill, Inc., 1993.
6. Mandal. S.K. How to Succeed in Group Discussions & Personal Interviews. Mumbai: JAICO PublishingHouse.
7. Rogoff. Leonard and Ballenger. Grady. Office Guide to Business Letters, Memos & Reports. New York:Macmillan, 1994.
8. Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
9. Geetha Nagaraj, Write to Communicate, 2004.
10. Wren & Martin, English Grammar and Composition, 2002.
11. Rajendra Pal and Kortahalli J S, Essentials of Business Communication.

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Course Code	Title of the Course
13022	Part II: English Paper- II

Learning objective:

1. To make the students master the different topics prescribed in the Poetry and Language use Sections.

BLOCK I: POETRY - I

Unit – I Sonnet - William Shakespeare

Unit – II Lines Composed upon Westminster Bridge -William Wordsworth

Unit – III Grecian Urn - John Keats (1795-1827)

Unit – IV Andrea Del Sarto - Robert Browning (1812-1889)

BLOCK II: POETRY - II

Unit – V The Road Not Taken - Robert

Frost (1874-1963) **Unit – VI** Strange Meeting

- Wilfred Owen (1813-1918)**Unit**

– VII Gitanjali - Rabindranath

Tagore (1861-1946) **Unit – VIII** The

Coromandel Fishers - Sarojini Naidu

Unit – IX The Express - Stephen Spender

BLOCK III: DRAMA

Unit – X **Shakespeare :** The Merchant of Venice

BLOCK IV: DEVELOPING LANGUAGE SKILLS

Unit – XI Essay writing **Unit – XII** Note Making **Unit – XIII** Report writing **Unit – XIV**

References:

1. The Golden Quill, P.K. Seshadri, Macmillan.
2. The Merchant of Venice, Shakespeare. (Any overseas edition).
3. Active English Grammar, Ed. by the Board of Editors, Macmillan.
4. Modern English – A Book of Grammar Usage and Composition byN.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
13023	OBJECT ORIENTED PROGRAMMING and C++

Course Objectives:

- To provide an overview of working principles of object oriented paradigm
- To understand and apply the OOPs fundamentals
- To implement the features of OOP in real world applications

Course Outcome:

- Able to understand the object oriented programming techniques
- Able to write real world problems with C++

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	**Introduction and Features**: Evolution of Object Oriented Language, Object oriented Paradigm, Basic concept of object-oriented programming- objects, classes, encapsulation and data abstraction, inheritance, polymorphism, dynamic binding, message passing
2	**Popular OOP languages.** Moving from C to C++ Introduction – Predefined console streams, hierarchy of console stream classes,
3	**I/O operations;** Unformatted I/O operations, formatted console I/O operations, manipulators, custom/user-defined manipulators.
	BLOCK 2 : CLASSES AND OBJECTS
4	**Classes and Objects:** Introduction, class specification, class objects, accessing class members, defining member functions, accessing member functions within a class, outside member functions as inline, private member function,
5	**Memory allocation for objects:** array of objects, function prototype, call by reference, return by reference, objects as function arguments, inline function, friend function, constant parameter and member function.
6	**Object Initialization:** Introduction - constructors, default constructor, parameterized constructors, multiple constructors in a class, dynamic initialization through constructors, copy constructor, dynamic constructor, destructor. Dynamic Objects: Introduction, pointers to objects, array of pointers to objects, this pointer.
	BLOCK 3 : INHERITANCE, POLYMORPHISM AND DATA CONVERSION

7	**Inheritance:** Introduction, derived class declaration, forms of inheritance, inheritance and member accessibility, multilevel inheritance, multiple inheritance, hierarchical inheritance, hybrid inheritance.
8	**Polymorphism:** Introduction, Function overloading, Operator overloading introduction, unary operator overloading, binary operator overloading, assignment operator overloading, overloading with friend functions.
9	**Data conversion:** conversion between basic data types, conversion between objects and basic types, conversion between objects of different classes. Virtual function: Introduction, need for virtual functions, pure virtual functions, abstract classes.
	BLOCK 4 : TEMPLATES AND FILES
10	**Generic Programming with Templates:** Introduction - class templates – class template with multiple arguments
11	**Function template:** function template with multiple arguments. Inheritance of class template.
12	**Streams with Files:** Introduction, hierarchy of file stream classes, opening and closing of files, file pointers and their manipulators, sequential access to a file, file input/output with stream class, random access to a file.

	BLOCK 5 : EXCEPTION HANDLING
13	**Exception Handling:** Introduction – Basics of exception handling, exception handling mechanism, throwing mechanism, catching mechanism. Exceptions in constructors and destructors
14	**Other Exception Handling methods:** Handling uncaught exceptions, exceptions in operator overloaded functions, exception in inheritance tree, exceptions in class templates, memory allocation failure exception.

TEXT BOOK:

1. E.Balagurusamy, Object oriented programming in C++, Third Edition, Tata McGraw Hill Publications,2007.
2. Mastering C++, K.R Venugopal and Rajkumar, T.Ravishankar, Tata McGraw Hill Publishing CompanyLtd., 2006.

REFERENCE BOOK:

1. Object Oriented Programming in C++, Fourth Edition, Robert Lafore, Galgotia Publications Pvt. Ltd.,New Delhi. 2010.

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Course Code	Title of the Course
13024	LAB: OBJECT ORIENTED PROGRAMMING and C++

Course Objectives:

- To understand and apply the OOPs fundamentals
- To implement the features of OOP in real world applications

Course Outcome:

- Able to write real world problems with C++

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	Writing simple C++ programs
2	Using if and switch constructs Programs
3	**Looping , Arrays ,Structure statements**: for, while, do-while, Strings and Matrices Programs Problems
	BLOCK 2 : OOPs CONCEPT
4	**Functions:** static function, friend function ,constructor , destructor and operator overloading and Recursive programs
5	**Inheritance :** Inheritance types
6	**Polymorphism :** polymorphism types, Virtual function
	BLOCK 3 : FILE AND POINTERS
7	**File:** File Handling C++ Programs, opening and closing a data file - creating a data file, processing a data file.
8	**Pointers :** Pointers and Pointers with Arrays Programs
9	**Virtual functions:** Pure virtual functions
	BLOCK 4 : TEMPLATES AND FILES
10	**Generic Programming with Templates:** Demonstrating class templates, class template with multiple arguments
11	**Function template:** Demonstrating function template with multiple arguments. Inheritance of class template.
12	**Streams with Files:** opening and closing of files, file pointers and their manipulators, sequential access to a file, file input/output with stream class,random access to a file.
	BLOCK 5 : EXCEPTION HANDLING
13	**Exception Handling:** programs using exception handling, Exceptions in constructors and destructors
14	**Other Exception Handling methods:** Handling uncaught exceptions, exceptions in operator overloaded functions, exception in inheritance tree, exceptions in class templates, memory allocation failure exception.

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III SEMESTER

Course Code	Title of the Course
13031B	**PART-I : HUMAN SKILLS DEVELOPMENT - I**

Learning objective:

1. To Make the Students develop human skills.

BLOCK I: HUMAN SKILLS AND HABITS

Unit – I Human Skills –Developing skills-Types

Unit – II Mind-Levels of functions

Habits-Meaning-Types-Merits of good habits - Interpersonal Relationship-Features-InterpersonalBehaviour

BLOCK II: PERSONALITY AND SELF CONCEPT

Unit – III Thinking ahead- Significance of thinking ahead

Unit – IV Developing Personality-Meaning -Need-Factors influencingpersonality, Ways of developing personality -Building positive personality

Unit – V Self-concept-Self-esteem-Meaning-Importance - Self-efficacy-Self-acceptance-Meaning-Importance - Etiquette-Meaning-Etiquettes in using mobile, telephones- Dais Etiquette

BLOCK III: TYPES OF SKILLS

Unit – VI Goal-setting Skills-Meaning-Types-Importance-

Unit – VII Decision-making skills-Meaning-Types-Steps in decision-making

Unit–VIII Negotiating Skills-Styles-Structure-Creating negotiation-Competitive Negotiation

BLOCK IV: HUMAN RELATIONS

Unit – IX Attitudes-Meaning-Types-Importance-Developing positive attitudes

Unit – X **C**oping with Change-Meaning-Characteristics-Importance of changeResistance to change-Dealing with change

Unit – XI Leadership-Meaning-Importance-Characteristics-Styles-

Unit – XII Human Relations Skill-Need-Canons of good human relations

Unit – XIII **C**ounselling-Meaning-Importance-Forms- Conflicts-Meaning-Types-Causes-Effects-Managements of conflicts

Unit – XIV Stress-Meaning-Types-Causes-Effects-Managing the stress - Anger-Meaning-Causes-Consequences-Anger Management

References:

1. Les Giblin, Skill with People, 1995.
2. Shiv Khera, You Can Win, 2002.
3. Christian H Godefroy, Mind Power.
4. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.
5. Natalie H Rogers, How to Speak without Fear, 1982.
6. Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

Course Code	Title of the Course
13032	**Part II: English Paper- III**

Learning objective:

1. To make the students master the different topics prescribed in the Short Stories, One Act Plays,Grammar and Composition.

BLOCK I:SHORT STORIES

Unit – I	A Hero	- R.K. Narayanan
Unit – II	The Diamond Necklace	- Guy de Maupassant
Unit – III	The Verger	- Somerset Maugham

Unit – IV	The Postmaster	- Rabindranath Tagore

BLOCK II: ONE ACT PLAYS - I

Unit – V	The Proposal	- Anton Chekhou
Unit – VI	The Boy Comes Home	- A.A. Milne
Unit – VII	The Silver Idol	- James R. Waugh
Unit – VIII	Progress	- St. John Ervine

BLOCK III: ONE ACT PLAYS - II

Unit – IX	The Pie and the Tart	- Huge Chesterman
Unit – X	Reunion	- W.st. Joh Tayleur
Unit – XI	A kind of Justice	- Margaret Wood
Unit – XII	The Refugee	- Asif Currimbhoy

BLOCK IV: GRAMMAR AND COMPOSITION

Unit – XIII Parts of speech-Noun- Pronoun- Adjective Degrees of Comparison- Verb-Adverb

Unit – XIV Agenda- Minutes- Notice- Descriptive Writing

References:

1. Aroma, Ed. by the Board of Editors, Publishers- New Century Book House, Chennai.
2. Six Short Stories, Ed. by the Board of Editors, Harrows Publications, Chennai.
3. One Act Plays, Ed. by the Board of Editors, Harrows Publications, Chennai.
4. Modern English – A Book of Grammar Usage and Composition by N.Krishnaswamy, Macmillan Publishers.
5. English for Communication, Ed. by the Board of Editors, Harrows Publications,Chennai.

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Course Code	Title of the Course
13033	DATA STRUCTURES AND ALGORITHMS

Course Objectives:

- The learner should be well versed with the fundamentals of Algorithms, learn various data structures, should be able to use them appropriately as per need during development of programs.
- Also, the learner should know different sorting and searching techniques so that correct techniques can be used in different programs so that the complexity of the program does not increase due the sorting/ search technique employed.

Course Outcome

After the completion of this course, the student will able to

- To write programs using structures, strings, arrays, pointers and strings for solving complex computational problem.
- Using the data structures real time applications
- Able to analyze the efficiency of Data Structures

Unit No	Contents
	BLOCK 1 : INTRODUCTION
1	**Introduction to Data Structure :** Types of Data Structure , Primitive data types
	Algorithms: –Time and space Complexity of algorithms
2	**Arrays:** Array initialization, Definition of Array, Characteristic of Array ,One- dimensional Array, Two-dimensional array and Multi dimensional array
	BLOCK 2 : LINEAR DATA STRUCTURE
3	**Stack :** Stack related terms, Operations on a stack,
4	**Representation of Stack:** Implementation of a stack – application of Stack. Expression Evaluation Polish notation.
5	**Queues:** Operations on queue Circular Queue, Representation of Queues, Application of Queues
6	**List:** Merging lists, Linked list, Single linked list, Double Linked List, Header Linked list
7	**Operation on Linked List :** Insertion and Deletion of linked list
8	**Traversal:** Traversing a linked list , Representation of linked list.
	BLOCK : 3 NON-LINEAR DATA STRUCTURE
9	**Trees:** Binary Trees, Types of Binary trees, Binary Tree Representation
10	**Binary Tree operations / Applications :** Traversing Binary Trees, Binary Search tree,
11	**Operations on Binary Tree:** Insertion and Deletion operations, Hashing Techniques.
	BLOCK 4 : SEARCHING TECHNIQUES
12	**Searching :** Introduction, Searching, Linear Search, Binary Search
	BLOCK 5 : SORTING TECHNIQUES
13	**Sorting:** Bubble sort, Insertion sort, Radix sort
14	**Other sorting Techniques:** Selection sort, Quick sort, Tree sort.

Text Books:

1. Fundamentals of Data structures , Second edition, Ellis Horowitz and SartajSahini, Universities press, 2007.
2. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.

Reference Books:

1. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

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Course Code	Title of the Course
13034	Lab : Data Structures and Algorithms

Course Objectives

- To be able to solve data structure problems using C++ language
- To learn and implement C++ language programming techniques
- To introduce the efficiency of the algorithm

Course Outcome

- Students can develop programming knowledge/
- Students can solve any kind of problems using C++ language
- Data Structure based problems can be solved

Experiments based on c++ programming and Data Structures

Uni tNo.	Contents
	BLOCK 1 : SIMPLE C++ PROGRAMS
1	**Introduction** Simple C++ Programs
2	**Control Structures:** Using if and switch constructs Programs
3	**Looping , Arrays ,Structure statements**: for, while, do-while, Strings and Matrices Programs Problems
	BLOCK 2 : OOPs CONCEPTS
4	**Functions:** static function, friend function ,constructor , destructor and operator overloading and Recursive programs
5	**Inheritance and polymorphism:** Inheritance types and polymorphism types, Virtual function
6	**File:** File Handling C++ Programs, opening and closing a data file - creating a data file, processing a data file.
7	**Pointers :** Pointers and Pointers with Arrays Programs
	BLOCK 3: LINEAR DATA STRUCUTURE
8	**Stacks :** Stack Implementation, expression evaluation, Polish notation
9	**Queues:** Queue Implementation, Applications of Queue
10	**Linked List programs:** List, Merging lists, Linked list, Single linked list, DoubleLinked List, Header Linked list, Insertion and Deletion of linked list, Traversing a linked list.
	BLOCK 4 : NON LINEAR DATA STRUCTURE
11	***Tree Programs :*** *Trees, Binary Trees, Types of Binary trees, Binary Tree Representation, Traversing Binary Trees, Binary Search tree, Insertion and Deletion operations,*
12	**Graphs:** *Shortest Path Algorithms* *o Dijkstra's Algorithm* *o Graphs with Negative Edge costs* *o Acyclic Graphs* *o All Pairs Shortest Paths Algorithm* ***Minimum cost Spanning Trees*** *o Kruskal's Algorithm* *o Prims's Algorithm* *o Applications* *Breadth First Search*
	BLOCK 5 : SEARCHING AND SORTING

	ALGORITHMS
13	**Searching Techniques:** Linear and Binary search Programs
14	**Sorting techniques**: Bubble sort, Quick sort, Insertion sort, Merge sort

Reference Books:

1. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.
2. Fundamentals of Data structures in C, Second edition, Ellis Horowitz and SartajSahini, Universities press, 2007.
3. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

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SEMESTER IV

Course Code	Title of the Course
13041 B	**PART-I : HUMAN SKILLS DEVELOPMENT - II**

Learning objective*:*

1. To Make the Students develop human skills.

***B*LOCK I: GUIDENCE AND COUNSELLING**

Unit – I Guidance & Counselling – Role of Counsellor - Importance and Techniques of counselling

Unit – II Managerial skill- Need – Importance

Unit – III Human relational skills-Communication-Attention

BLOCK II: TECHNICAL SKILLS

Unit – IV Conceptual skills-Meaning-Importance

Unit – V Technical skills-Techniques-Practices-Tools-Procedures

Unit – VI Presentation skills-Planning-Preparation-Delivery

Unit – VII Organization skills-Meaning-Nature-Importance-Types

Unit – VIII Multi-Tasking skills Responsibilities-Causes

Unit – IX Leader- Qualities of a good leader

BLOCK III: UNDERSTANDING SKILLS

Unit – X Understanding Skills -Human systems: Individual, Group, organization, and their major interactions

Unit – XI Understanding Skills -Human systems: Community and Society, and their major interactions

BLOCK IV: SOCIETY BASED SKILLS

Unit – XII Problem solving skills – Handling –Facing - Importance

Unit – XIII Cooperative Learning Skills

Unit – XIV Making Social Responsibilities-Causes

References:

1. Les Giblin, Skill with People, 1995.
2. Shiv Khera, You Can Win, 2002.
3. Christian H Godefroy, Mind Power.
4. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.
5. Natalie H Rogers, How to Speak without Fear, 1982.
6. Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

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Course Code	Title of the Course
13042	Part II: English Paper - IV

Learning objective:

1. To make the students master the different topics prescribed in the Short Stories, Drama, Fiction, Tales from Shakespeare, Biographies, Grammar and Composition.

BLOCK I: SHORT STORIES

Unit – I	Lalajee	- Jim Corbelt
Unit – II	A Day's Wait	- Hemmingway
Unit – III	Two old Men	- Leo Tolstoy
Unit –IV	Little Girls wiser than	- Men Tolstoy
Unit – V	Boy who wanted more Cheese	- William Elliot Griffir

BLOCK II: DRAMA AND FICTION

Unit – VI Pygmalion - G.B. Shaw

Unit – VII Swami and Friends - R.K. Narayanan

BLOCK III: SHAKESPEARE

Unit – VIII - The Merchant of Venice

Unit – IX - Romeo and Juliet

Unit – X - The Winter's Tale

BLOCK IV: BIOGRAPHIES, GRAMMAR AND COMPOSITION

Unit – XI - Martin-Luther king - R.N. Roy

Unit – XII - Nehru - A.J. Toynbee

Unit – XIII - Concord- Phrases and Clauses-Question Tag

Unit – XIV - Expansion of Proverbs

Group Discussion

Conversation (Apologizing, Requesting, Thanking)

References:

1. Sizzlers, by the Board of Editors, Publishers-:Manimekala Publishing House, Madurai.
2. Pygmalion – G.B. Shaw
3. Swami and Friends – R.K. Narayan
4. Tales from Shakespeare Ed. by the Board of Editors, Harrows Publications, Chennai.
5. Modern English – A Book of Grammar Usage and Composition by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
13043	JAVA PROGRAMMING

Course objective

- To understand the basics of Java programming
- To understand Java packages, multithreaded programming

Course outcome

- Able to learn, write Java programs
- Able to develop applets graphics programs

Unit No	*Contents*
	BLOCK 1 INTRODUCTION

1	**Java Evolution:** Java history, features, java and Internet, WWW, web browsers
2	***Overview :****simple java program, program structure, tokens, statements*
3	**Writing Java programs:** JVM, constants, variables, data types, type casting
	BLOCK 2 : OPERATORS AND EXPRESSIONS
4	**Operators** : arithmetic, relational, logical, assignment, increment and decrement, conditional, bitwise, special operators
5	**Expressions :** arithmetic, Evaluation of expression, operator precedence and associatively
6	**Decision making and branching:** If, If..Else, nesting of If..Else, else..if, switch, ? Operators, while..do, for jump in loops
	BLOCK 3 : CLASSES,OBJECTS
7	**Defining a class:** adding variables, methods, creating objects, accessing members, constructors, method overloading, nesting of methods, inheritance, overriding methods, final classes
8	**Arrays, strings and vectors:** arrays, one dimensional arrays, two dimensional arrays, strings, vectors, wrapper classes
9	**Interfaces :** multiple inheritance, defining interfaces, extending interfaces, implementing interfaces, accessing interface variables
	BLOCK 4 PACKAGES AND MULTITHREADED PROGRAMMING
10	**API packages :** using system packages, naming conventions, creating packages, accessing packages, using a package, adding a class to apackage
11	**Basics :** creating threads, extending the thread class, stopping and blockinga thread, life cycle of a thread, using thread methods, thread exceptions, synchronization, implementing the 'Runnable' interface
12	**Managing Errors :** types of errors, exception handling code, multiple catch statements, using finally statement
	BLOCK 5 APPLET AND GRAPHICS PROGRAMMING
13	**INTRODUCTION:** preparing to write applets, applet life cycle, applet tag, adding applet to a HTML file, running the applet
14	**The Graphics class**: lines and rectangles, circles and ellipses, drawing arcs, drawing polygons, line graphs

***

Course Code	**Title of the Course**
13044	**LAB : JAVA PROGRAMMING**

Course Objectives:

To understand and apply the fundamentals of Java, Packages

Course requirement

Basic knowledge in programming principles

Course outcomes

- Able to create, test and run Java programs
- Able to write applet programs

Unit No	*Contents*
	BLOCK 1 JAVA FUNDAMENTALS
1	**Simple Java programs**
2	**Programs using classes and objects**

3	**Conditional statements using Java**
4	**Looping statements using Java**
	BLOCK 2 : OOP CONCEPTS
5	Operator overloading programs
6	Function overloading programs
7	Inheritance, packages
8	Polymorphism and message passing programs
	BLOCK 3 : VIRTUAL FUNCTION & THREADS
9	Threads
10	Virtual functions
	BLOCK 4 : I/O AND EXCEPTION HANDLING
11	Exception handling programs
12	I/O manipulation programs
	BLOCK 5 : APPLET AND NETWORK PROGRAMMING
13	Simple applet programs
14	Simple network programs using Java

***

SEMESTER V

Course Code	Title of the Course
13051	**OPERATING SYSTEMS**

Course objective

- To understand the operating system basics
- To understand the real and virtual memory management

Course outcome

- Able to know the memory organization, memory management
- Able to file and disk management

Unit No	*Contents*
	BLOCK 1 INTRODUCTION
1	Introduction, components and goals, operating system architecture
2	Process concepts: Introduction, process states, process management
3	Interrupts, Interprocess communication
	BLOCK 2 : ASYNCHRONOUS CONCURRENT EXECUTION
4	Introduction, mutual exclusion, implementing mutual exclusion primitives
5	Software solution to the mutual exclusion problem, hardware solution to mutual exclusion problem, semaphores
6	Concurrent Programming, introduction, monitors
	BLOCK 3 : DEADLOCK AND INFINITE POSTPONEMENT
7	Introduction : Examples of deadlock, Related problem indefinitepostponement, resource concepts
8	**Conditions for Deadlock:** Deadlock solution, prevention, avoidance with Dijkstra's banker algorithm, Deadlock detection, Recovery
9	Processor scheduling: Introduction, scheduling levels, preemptive vs nonpreemptive scheduling priorities, scheduling criteria, scheduling algorithms
	BLOCK 4 REAL MEMORY AND VIRTUAL MEMORY MANAGEMENT

10	Introduction, memory organization, memory management, hierarchy, management strategies
11	Contiguous vs non-contiguous memory allocation, fixed partitionmultiprogramming, variable partition multiprogramming
12	Virtual memory management Introduction, page replacement, strategies,page fault frequency, page replacement, page release, page size
	BLOCK 5 DISK PERFORMANCE & FILE, DATABASE SYSTEMS
13	Introduction, disk scheduling strategies, rotational optimization
14	File and database system introduction, data hierarchy, files, file systems, file optimization, file allocation, free space management, file access control

Text Book:

1. Operating Systems, Deital&Deital, Pearson Education,Third Edition, 2008

Reference Books

1. An Introduction to operating system concepts and practice, Pramod Chandra, PHI,2008
2. Operating system concepts, Abraham silberschatz peter Galvin, Wiley India, 2007.

Course Code	Title of the Course
13052	**RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS)**

Course Objectives:

- To understand the fundamentals of data models
- To make a study of SQL and relational database design.
- To know about data storage techniques and query processing.
- To impart knowledge in transaction processing, concurrency control techniques and External storage

Course Requirements:

- Knowledge about the basic concepts of the database.

Course Outcome:

- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Acquire the knowledge of query evaluation to monitor the performance of the DBMS.
- Develop a simple database applications using normalization.

Unit No	***Contents***
	BLOCK 1 INTRODUCTION
1	**Data base System Applications**, data base System VS file System – Viewof Data – Data Abstraction –Instances and Schemas – data Models – the ER Model
2	***Model :****Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor.*
3	**History of Data base Systems** - Data base design and ER diagrams –Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.
	BLOCK 2 : RELATIONAL MODEL

4	**Introduction**– Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying / altering Tables and Views.
5	**Relational Algebra** – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews –
6	**Relational calculus** – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.
	BLOCK 3 : SQL QUERY
7	**Form of Basic SQL Query** – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints inSQL Triggers and Active Data bases. Schema refinement
8	**Normal forms :**Problems Caused by redundancy – Decompositions – Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF–
9	**Join:** Lossless join Decomposition – Dependency preserving Decomposition – Schema refinement in Data base Design – Multi valued Dependencies –
	FORTH Normal Form.
	BLOCK 4 TRANSACTION
10	**Introduction :**Transaction Concept- Transaction State- Implementation of Atomicity and Durability – Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability
11	**Protocols :** Lock Based Protocols – Timestamp Based Protocols- Validation-Based Protocols – Multiple Granularity.
12	**Recovery and Atomicity** – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage-Advance Recovery systems- Remote Backup systems
	BLOCK 5 STORAGE
13	**Data on External Storage** – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing – Comparison of File Organizations – Indexes and
14	**Performance Tuning-** Intuitions for tree Indexes – Indexed Sequential Access Methods (ISAM) – B+ Trees: A Dynamic Index Structure.

Text Books:

1. Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, 3rd Edition, TATA McGrawHill.2003.
2. Silberschatz, Korth, Data base System Concepts, 6th Edition, Tata McGraw Hill, 2011.

Reference Books:

1. Relational Database Principles 2nd Edition, Colin Ritchie, 2004
2. Sharad Maheswari and Ruchin Jain, Database management systems Complete Practical Approach,Firewall media, 2006
3. Peter Rob & Carlos Coronel, Data base Systems design, Implementation, and Management, 7th Edition.
4. Elmasri Navrate , Fundamentals of Database Systems, Pearson Education.

Course Code	Title of the Course

13053	COMPUTER ARCHITECTURE

Course objective:

- To understand the computer design
- To understand the addressing modes

Course outcome:

- Able to know the storage devices
- Able to know the memory, I/O cache performance

Unit No	*Contents*
	BLOCK 1 INTRODUCTION
1	Fundamentals: Measuring and reporting performance, quantitative principles of computer design, classifying instruction set architecture
2	Memory addressing, addressing modes, types and size of operands, operations in the instruction set, operands and operations for media and signal processing
3	Instructions for control flow, Encoding an instruction set, Example architecture, MIPS and TM32
	BLOCK 2 : INSTRUCTION LEVEL PARALLELISM
4	Instruction Level Parallelism: Pipelining and Hazards - Concepts of ILP - Dynamic scheduling
5	Dynamic Hardware prediction - Multiple issues - Hardware based speculation
6	Limitations of ILP - Case studies: lP6 Micro architecture
	BLOCK 3 : ILP WITH SOFTWARE APPROACH
7	Instruction Level Parallelism With Software Approaches: Compiler techniques for exposing ILP - Static branch prediction
8	Static multiple issue : VLIW - Advanced compiler support - Hardware supportfor exposing parallelism
9	Hardware Vs software speculation. Mechanism - IA 64 and Itanium Processor.
	BLOCK 4 MEMORY AND I/O
10	Memory And I/O: Cache performance - Reducing cache miss penalty and miss rate - Reducing hit time - Main memory and performance - Memory technology
11	Types of storage devices - Buses - RAID - Reliability, availability and dependability
12	I/O performance measures - Designing I/O system.
	BLOCK 5 MULTIPROCESSOR AND THREAD LEVEL PARALLELISM
13	Multiprocessors And Thread Level Parallelism: Symmetric and distributed shared memory architectures - Performance issues - Synchronization
14	Models of memory consistency - Multithreading.

TEXT BOOKS

1. John L. Hennessey and David A. Patterson," Computer Architecture: A Quantitative Approach", Third Edition, Morgan Kaufmann, 2003.
2. D. Sima, T. Fountain and P. Kacsuk, " Advanced Computer Architectures: A DesignSpace Approach", Addison Wesley, 2000.

REFERENCE BOOKS

1. Kai Hwang "Advanced computer architecture Parallelism Scalability Programmability"Tata Mcgraw Hill Edition 2001.
2. Vincent P.Heuring, Harry F.Jordan, “Computer System Design and Architecture”,Addison Wesley, 2nd Edition 2004.

Course Code	Title of the Course

13054	RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS) LAB

Course objective:

- To understand the SQL commands
- To understand the cursor, triggers, packages

Course outcome:

- Able to write from simple SQL queries to PL/SQL statements
- Able to write database applications using SQL

Unit No.	*Contents*
	BLOCK 1 : TABLE MANIPULATION
1	**Table** creation, Renaming a Table, Copying another table, Dropping a Table
2	**Table Description:** Describing Table Definitions, Modifying Tables, Joining tables, Number and Date functions.
	BLOCK 2 : SQL QUERIES AND SUB QUERIES
3	**SQL Queries:** Queries, Sub Queries, and aggregate functions
4	**DDL:** Experiments using database DDL SQL statements
5	**DML:** Experiment using database DML SQL statements
6	**DCL:** Experiment using database DCL SQL statements
	BLOCK 3 : INDEX AND VIEW
7	**Index :** Experiment using database index creation, Renaming a index, Copying another index, Dropping a index
8	***Views:*** *Create Views, Partition and locks*
	BLOCK 4 : EXCEPTION HANDLING AND PL/SQL
9	**Exception Handling:** PL/SQL Procedure for application using exception handling
10	**Cursor:** PL/SQL Procedure for application using cursors
11	**Trigger:** PL/SQL Procedure for application using triggers
12	**Package:** PL/SQL Procedure for application using package
13	**Reports:** DBMS programs to prepare report using functions
	BLOCK 5 : APPLICATION DEVELOPMENT
14	**Design and Develop Application:** Library information system, Students mark sheet processing, Telephone directory maintenance, Gas booking and delivering, Electricity bill processing, Bank Transaction, Pay roll processing. Personal information system, Question database and conducting Quiz and Personal diary

Reference Books:

1. Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, 3rd Edition, TATA McGrawHill.2003.
2. Silberschatz, Korth, Data base System Concepts, 6th Edition, Tata McGraw Hill, 2011.
3. Relational Database Principles 2nd Edition, Colin Ritchie, 2004
4. Sharad Maheswari and Ruchin Jain, Database management systems Complete Practical Approach,Firewall media, 2006
5. Peter Rob & Carlos Coronel, Data base Systems design, Implementation, and Management, 7th Edition.
6. Elmasri Navrate , Fundamentals of Database Systems, Pearson Education.

SEMESTER VI

Course Code	Title of the Course
13061	COMPUTER NETWORKS

Course Objectives:

- To understand applications of computer networks
- To provide in-depth knowledge of OSI layer, multiple access protocols

Course Outcome:

- Enhance the perspective of routing algorithms, remote procedure call
- Able to gain the knowledge in network security, symmetric/asymmetric keycryptography.

Unit No.	*Contents*
	BLOCK 1 : INTRODUCTION
1	**Introduction** : computer networks applications, line configuration, topology, transmission modes
2	**Categories of Networks:** LAN, WAN,MAN, OSI layers
3	**Physical Layer:** analog and digital signals performance, transmission media
	BLOCK 2 : DATA LINK LAYER
4	**Introduction:** Error detection and correction, block coding, cyclic redundancy check, framing, flow and error control
5	**Data link layer protocols:** stop and wait protocol, sliding window protocol, ARQ, go-back-n ARQ, selective-repeat ARQ
6	**Multiple access protocols:** ALOHA, CSMA, CSMA/CD, CSMA/CA
	BLOCK 3 : NETWORK LAYER
7	**Introduction:** Circuit switching, Packet switching, Message switching, virtual circuit and datagram subnets
8	**Routing Algorithms:** state routing, shortest path routing, dynamic routing, distance vector routing
9	**Multicast Routing: algorithms, congestion, control algorithms**
	BLOCK 4 : TRANSPORT LAYER
10	**introduction:** process to process delivery, UDP, TCP, connection oriented vs connection less services
11	**Application and Services:** Domain Name system, Remote login, Mail exchange, File transfer, RPC, Remote file access, WWW and HTTP, SNMP
	BLOCK 5 : NETWORK SECURITY
12	Introduction: cryptography, Encryption models, Transposition and substitution chipers, Cryptographic principles
13	***Symmetric key cryptography:*** *DES, AES*
14	***Asymmetric key cryptography:*** *RSA, security services*

Text Books:

1. Computer Networks, 3rd Edition, Andrew S Tanenbaum, 2010
2. Data Communication and Networking, 4th edition, Behrouz A. Forouzan, 2008

Reference Books:

1. Data and computer communication , 8th edition, William stallings, prentice Hall
2. An Engineering approach to computer networks, 2nd edition, S.Keshav, Pearson education,2008

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Course Code	Title of the Course
13062	VISUAL BASIC

	PROGRAMMING

Unit No	CONCEPTS
	BLOCK 1: VISUAL BASIC CONCEPTS
1	**Introduction to GUI** - Visual Basic : Starting and Exiting Visual Basic Project Explorer Working with Forms Properties Window
2	**Using the Toolbox** Toolbars Working with Projects Programming Structure of Visual Basic applications Event and Event driven Procedures
3	**Program Design** - Form and Controls - Writing the Code - Saving, Running and Testing - Making EXE File - Printouts
	BLOCK 2 : VISUAL BASIC CODE,EVENTS AND CONTROLS
4	**Adding code and using events**: Using literals data types - declaring and using variables using the operator subroutines and functions
5	**Looping and decision control structures:** if then else, structure select structure, for next, do.. loop and while.. wend.
6	**Using intrinsic Visual basic Controls with methods and Properties:** Label ,Text box, Command button, Frame, Checkbox, option button, List box, Combo box, Drive List box, directory List box and file list box Formatting controls control arrays, Tab order
	BLOCK 3 : VISUAL BASIC PROCEDURES, FUNCTIONS AND ARRAYS
7	**Creating Procedures, functions** - String functions, date and Time function , numeric functions- Recursive Functions
8	**Multiple Forms** - Startup Forms - SubMain Procedure
9	**Arrays** - Control Arrays - Indexing and Event Handling - Graphics
	BLOCK 4 : MENUS AND MDI FORMS
10	**Menus:** creating menus, adding code to menus
11	**Using MDI forms** - MDI form basic building MDI form creating MDI Child Forms
	BLOCK 5: DATABASE OBJECT (DAO) AND PROPERTIES
12	Database object (DAO) and properties -accessing Recordset objects- Move first, MoveLast, MovePrevious and MoveNext methods Begin, Commit andRollback transaction accessing Microsoft Access files.
13	Active Data Objects (ADO) ADO and OLE DB and ADO Primer What are OLE DB and ADO? ADO object Model Converting DAO Code to Use ADO.
14	Connecting to the database Retrieving a recordset Creating a query dynamically Using a parameterized query using action queries - Adding records Editing records closing the database connection**.**

Text Books

1. Gary Cornwell Visual basic 6 , Tata McGraw Hill

Reference Books:

1. Scott warner Teach yourself Visual basic 6 , Tata McGraw-Hill

2. Noel Jerke The Complete Reference , Tata McGraw-Hill
3. Eric A. Smith, Valar Whisler, and Hank Marquis Visual Basic 6 programming

Course Code	Title of the Course
13063	SOFTWARE ENGINEERING

Course Objective:

- To know of how to do project planning for the software process.
- To learn the cost estimation techniques during the analysis of the project.
- To understand the quality concepts for ensuring the functionality of the software

Course Requirement:

- Fundamental concepts of Software Engineering

Course Outcome:

- Understand the activities during the project scheduling of any software application.
- Learn the risk management activities and the resource allocation for the projects.
- Able to create reliable, replicable cost estimation that links to the requirements of project planning and managing.

Unit No.	*Contents*
	BLOCK 1 : INTRODUCTION
1	**Software:** Role of software, Software myths. Generic view of process: A layered technology, a process framework, The Capability Maturity Model Integration (CMMI)
2	***Process patterns**, Process assessment, Personal and Team processmodels.*
3	***Process model:** The waterfall model, Incremental process models, Evolutionary process models, The Unified process.*
	BLOCK 2 : REQUIREMENT ENGINEERING:
4	Design and Construction, Requirement Engineering Tasks, Requirements Engineering Process, Validating Requirements.
5	**Building the Analysis Model:** Requirement analysis, Data Modeling concepts, Object-Oriented Analysis
6	**Modeling:** Scenario-Based Modeling, Flow-Oriented Modeling Class-Based Modeling, Creating a Behavioral Model.
	BLOCK 3 : SYSTEM DESIGN
7	**Design Engineering:** Design process and quality, Design concepts, the design model.
8	***Architectural Design:** Software architecture, Data design, Architectural styles and patterns, Architectural Design.*
9	**User interface design:** The Golden rules, User interface analysis and design, Interface analysis, Interface design steps, Design evaluation.
	BLOCK 4 : SYSTEM TESTING
10	**Testing Strategies:** Approach to Software Testing, Unit Testing, Integration Testing, Test strategies for Object-Oriented Software, Validation Testing, System Testing, the art of Debugging, Black-Box and White-Box testing.
11	**Product Metrics:** Software Quality, Product Metrics, Metrics for Analysis Model, Design Model, Source code and Metrics for testing, Metrics for maintenance. Metrics for Process and Projects Domains: Software Measurement, Metrics for Software Quality and Software Process.
	BLOCK 5 : RISK and QUALITY MANAGEMENT
12	Risk Strategies: Reactive vs. Proactive Risk strategies, software risks, Risk identification
13	**Risk Protection and refinement:** Risk projection, Risk refinement, Risk Mitigation, Monitoring and Management, RMMM Plan.

14	**Quality Management:** Quality concepts, Software quality assurance, Software Reviews, Formal Technical reviews, Statistical Software quality Assurance, Software reliability, The ISO 9000 quality standards.

TEXT BOOK:

1. Roger S. Pressman Software Engineering - A practitioner's Approach McGraw-Hill 6th Edition (2010)

REFERENCE BOOKS:

1. Richard Fairlay Software Engineering Concepts McGraw Hill Book Company (2005)
2. Pankaj Jalote An Integrated Approach to Software Engineering Narosa Publishing House 3rd Edition (2005)
3. Software Engineering, Somzerville, 8th Edition, Pearson Education 2007.
4. Software Engineering K.K. Agarwal & Yogesh Singh, 3rd Edition New AgeInternational Publishers 2007.
5. Software Engineering an Engineering Approach James F. Peters, Witold Pedrycz - John Wiley & Sons 2000.
6. Software Engineering Principles and Practice Waman S Jawadekar, , Tata McGraw-Hill 2004.

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Course Code	Title of the Course
13064	**LAB : VISUAL BASIC PROGRAMMING**

Course objectives

- To be able to understand the fundamentals of windows GUI
- To be able to run variable applications on windows
- To be able to understand visual Basic Programming concepts

Course outcome

- Students can develop GUI based applications using VB

Unit No.	Contents
1	Building simple applications
2	Working with intrinsic controls ,Control Arrays
3	Application with multiple forms
4	Application with dialogs
5	Application with Menus
6	Application using data controls
7	Application using Common Dialogs
8	Drag and Drop Events
9	Database Management
10	Creating ActiveX Controls
11	Database object (DAO) and properties
12	Active Data Objects (ADO) ADO and OLE DB

13	Connecting to the database ,Retrieving a record set Creating a query dynamically Using a parameterized query using action queries - Adding records Editing records closing the database connection
14	**Simple Application development:** 1. Library information system 2. Students mark sheet processing 3. Telephone directory maintenance 4. Gas booking and delivering 5. Electricity bill processing 6. Bank Transaction 7. Pay roll processing 8. Personal information system 9. Question database and conducting Quiz 10. Personal diary

Text Books

1. Gary Cornwell Visual basic 6 , Tata McGraw Hill

Reference Books:

1. Scott warner Teach yourself Visual basic 6 , Tata McGraw-Hill
2. Noel Jerke The Complete Reference, Tata McGraw-Hill
3. Eric A. Smith, Valar Whisler, and Hank Marquis Visual Basic 6 programming

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

B.Sc (Cyber Security)

(from Calendar Year 2023)

Submitted to

UGC, DISTANCE EDUCATION BUREAU (DEB)

New Delhi

For seeking approval to introduce new programme through ODL

Contents

B.Sc (Cyber Security)

Choice Based Credit System (CBCS)

(With effective from June 2023-24 onwards)

a) Programme mission and objectives

Mission:

It provides a strong foundation in the theoretical concepts of Cyber Security as well as a firm grounding in Programming Languages. It is designed to enable one to undertake software applications for business and industry. Successful candidates could also opt for a teaching career in secondary schools.

Objectives:

The objective of a Bachelor of Science in Cyber Security program is to provide students with a comprehensive understanding of the various aspects of cyber security, including threats, vulnerabilities, and protective measures. The program aims to develop the skills and knowledge necessary for students to identify, analyze, and address cyber security issues in a wide range of contexts. Some specific objectives of a B.Sc. in Cyber Security program include:

- Understanding Cyber Security Concepts: To provide students with a comprehensive understanding of the concepts, theories, and practices of cyber security.
- Knowledge of Security Technologies: To introduce students to various security technologies such as firewalls, intrusion detection and prevention systems, and encryption technologies.
- Understanding Threats and Vulnerabilities: To teach students about various threats and vulnerabilities in cyberspace, such as viruses, malware, phishing attacks, and social engineering.
- Analyzing Cyber Security Risks: To help students identify and analyze potential cyber security risks in various settings, such as corporate networks, financial systems, and critical infrastructure.
- Developing Security Strategies: To help students develop strategies to protect against cyber attacks and to respond to security incidents.
- Communication and Collaboration: To develop the communication and collaboration skills necessary to work effectively in interdisciplinary teams to solve complex cyber security problems.
- Ethics and Law: To provide students with an understanding of ethical and legal issues related to cyber security, including privacy, intellectual property, and cybercrime.
- Career Readiness: To prepare students for a range of careers in cyber security, including security analysts, security engineers, security consultants, and security managers.

Outcome:

The outcomes of a Bachelor of Science in Cyber Security program include:

- Cyber Security Expertise: Graduates will have expertise in various areas of cyber

security, including information security, network security, application security, and data protection.

- Security Risk Assessment: Graduates will have the ability to identify, assess and mitigate risks to information systems and networks using appropriate security technologies, tools, and practices.
- Cyber Security Analysis: Graduates will be able to analyze cyber security incidents, identify the root cause of the incident and take appropriate measures to prevent future attacks.
- Security Compliance: Graduates will be able to ensure that security policies and procedures are in compliance with relevant laws and regulations.
- Cyber Security Planning: Graduates will have the ability to develop security plans that align with organizational goals, strategic objectives, and industry best practices.
- Security Awareness: Graduates will have the ability to raise awareness of cyber security risks and educate users about safe online practices.
- Collaboration: Graduates will be able to work collaboratively with stakeholders to identify, prioritize and mitigate cyber security risks.
- Ethical and Legal Responsibility: Graduates will have a strong understanding of ethical and legal responsibilities related to cyber security, including privacy, intellectual property, and cybercrime.
- Career Readiness: Graduates will be prepared for a wide range of careers in cyber security, including security analysts, security engineers, security consultants, and security managers.

b) Relevance of the program with HEI's mission and goals

HEI's mission and goals to be offered through distance mode to reach quality higher education to the rurallearners. The distance mode meets the mission of HEI's like Digital India and paper-less transaction will enrich thehuman resources for the uplift of the nation.

c) Nature of prospective target group of learners

The prospective target group of learners of a Bachelor of Science in Cyber Security program includes:

- High School Graduates: Students who have recently graduated from high school and are interested in pursuing a career in cyber security.
- Career Changers: Professionals who are currently working in a related field, such as IT, but are interested in transitioning to a career in cyber security.
- Military Personnel: Military personnel who are transitioning to civilian life and want to pursue a career in cyber security.
- Information Technology Professionals: Professionals who are working in the information technology field and want to gain specialized skills in cyber security.
- Law Enforcement and Government Personnel: Law enforcement and government personnel who want to gain expertise in cyber security to combat cybercrime and protect critical infrastructure.

- Entrepreneurs and Business Owners: Entrepreneurs and business owners who want to develop cyber security strategies to protect their business and their customers' data.
- International Students: International students who are interested in pursuing a career in cyber security and want to gain specialized knowledge in the field.

Overall, the prospective target group of learners for a Bachelor of Science in Cyber Security program is diverse and includes individuals who are interested in pursuing a career in cyber security, as well as those who want to gain specialized knowledge and skills to protect their personal and business information.

d) Appropriateness of programme to be conducted in open and distance learning mode toacquire specific skills and competence:

A Bachelor of Science in Cyber Security program is well-suited for delivery through open and distance learning mode as it requires a combination of theoretical knowledge and practical skills. The program can be structured to ensure that students have access to the necessary resources and support to acquire specific skills and competencies in cyber security.

Here are some reasons why the B.Sc. Cyber Security program is appropriate for open and distance learning:

- Flexibility: Open and distance learning provides students with the flexibility to learn at their own pace and according to their schedule. This allows students to balance their studies with work, family, and other commitments.
- Technology: Cyber security is an inherently technology-driven field, and distance learning provides an opportunity for students to learn in a technology-rich environment that is relevant to the field.
- Resources: Open and distance learning provides students with access to a wide range of resources, including online textbooks, lecture videos, and discussion forums. These resources can help students to acquire specific skills and competencies in cyber security.
- Collaboration: Distance learning provides opportunities for students to collaborate with peers from different locations and backgrounds. This allows students to gain exposure to different perspectives and experiences, which can be particularly valuable in the field of cyber security.
- Career Advancement: The B.Sc. Cyber Security program prepares students for a variety of careers in the field of cyber security. Distance learning provides an opportunity for working professionals to acquire the necessary skills and competencies to advance their careers without taking a break from work.

Overall, the B.Sc. Cyber Security program is appropriate for open and distance learning, as it allows students to acquire the specific skills and competencies needed to succeed in the field of cyber security, while providing the flexibility and

resources needed for success in a distance learning environment.

e) Instructional Design

e.1 Regulations and curriculum design

1. The University reserves the rights to amend the regulations, schemes of examinations and syllabi from time totime based on recent IT trends
2. Every student should secure 120 credits to complete B.Sc Cyber Security programme.
3. Each theory course carries 4 credits with 75 marks in the university end semester and 25 marks in the internal assessment and each practical (lab) course carries 4 credits with 75 marks in the university end semester examination and 25 marks in the internal assessment.

Programme Code: BSCCS131

COURSE OF STUDY AND SCHEME OF EXAMINATION

PROGRAM STRUCTURE 1ST YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER I							
Theory							
1	CYS-101	Fundamental of Computing – using C Language	3	0	0	3	3
2	CYS(M)-101	Mathematics for Computing Professionals	3	1	0	4	4
3	CYS(HU)-101	English Communication	3	1	0	4	4
4	CYS-102	Programming using Python	3	0	0	3	3
5	CYS-103	Computer Network	3	0	0	3	3
Practical							
1	CYS-191	Fundamental of Computing – using C Language Lab	0	0	2	2	1
2	CYS-192	Programming in Python Lab	0	0	2	2	1
3	CYS-193	Computer Network Lab	0	0	2	2	1
Total			**20**				
SEMESTER II							
Theory							
1	CYS-201	Computer Architecture & Organization	3	1	0	4	4

2	CYS-202	Data Structures and Algorithms	3	0	0	0	3
3	CYS(HU)-201	Environmental Science	3	1	0	0	4
4	CYS-203	Ethical Hacking and Systems Defence	3	0	0	3	3
5	CYS-204	Object Oriented Concepts	3	0	0	3	3
Practical							
1	CYS-291	Data Structures andAlgorithms	0	0	2	2	1
2	CYS-292	Object Oriented Concepts	0	0	2	2	1
3	CYS-293	Ethical Hacking and Systems Defence Lab	0	0	2	2	1
Total			20				

2ND YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER III							
Theory							
1	CYS-301	Database Management Systems & Distributed Databases	3	0	0	3	3
2	CYS-302	Security Architecture and Models	3	1	0	4	4
3	CYS-303	Operating System & system programming	3	0	0	3	3
4	CYS-304	Vulnerability Analysis, Penetration Testing, and Incident Handling	3	0	0	3	3
5	CYS-305	Cyber Threat and Modelling	3	1	0	4	4
Practical							
1	CYS-391	Database Management Systems	0	0	2	2	1
2	CYS-392	Operating System & systemprogramming (LINUX)	0	0	2	2	1
3	CYS-393	VAPT Lab	0	0	2	2	1
Total			20				
SEMESTER IV							
Theory							
1	CYS-401	Cryptography & Information Security	3	1	0	4	4

2	CYS-402	Parallel and Distributed Computing (inc. Cloud computing)	3	0	0	3	3
3	CYS-403	Ethical Hacking and Systems Defence - Certification	3	1	0	3	4
4	CYS-404	Software Engineering & software design with UML	3	0	0	3	3
5	CYS-405	Advanced computer network & Security (TCP/IP, Wireless,mobile)	3	0	0	3	3
Practical							
1	CYS-491	Cryptography & Information Security Lab	0	0	2	2	1
2	CYS-492	Software Engineering & software design with UML	0	0	2	2	1
3	CYS-493	Advanced computer network & Security	0	0	2	2	1
Total			20				

3RD YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER V							
Theory							
1	CYS-501	Cyber Forensics	3	0	0	3	3
2	CYS-502	Cyber Law and Ethics	3	0	0	4	3
3	CYS-503	Malware Analysis and Reverse Engineering	3	1	0	4	4
4	CYS(PE)-504A	Enterprise Security Architecture and Design	3	1	0	4	4
	CYS(PE)-504B	Visualisation and Cloud Security					
	CYS(PE)-504C	Intrusion Detection and Prevention System					
	CYS(PE)-504D	Auditing IT Infrastructures for Compliance					
5	CYS(PE)-505A	Big Data & IoT Security	3	1	0	4	4
	CYS(PE)-505B	Disaster Recovery & business continuity management					
	CYS(PE)-505C	Data Science, Algorithms, and Complexity in the Cyber Context					
	CYS(PE)-505D	Biometric Security					

Practical							
1	**CYS-591**	**Cyber Forensics Lab**	0	0	2	2	1
2	**CYS-592**	**Malware Analysis Lab**	0	0	2	2	1
Total			**20**				
SEMESTER VI							
1	**CYS-601**	**Artificial Intelligence In Cyber security & Industry use cases**	3	0	0	3	3
2	**CYS(PE)-602A**	**Advanced Ethical Hacking**	3	1	0	4	4
	CYS(PE)-602B	**Block Chain & Cryptocurrency**					
	CYS(PE)-602C	**Penetration Testing**					
	CYS(PE)-602D	**Risk Management**					
	CYS(PE)-602E	**Global Certification**					
Practical							
1	**CYS-681**	**Project**	0	0	24	24	12
2	**CYS-692**	**Artificial Intelligence In Cybersecurity & Industry use cases**	**0**	**0**	**2**	**2**	**1**
Total			**20**				

Total credits in the Program: 120 credits

Syllabus: Annexure

e.2 Duration of the Programme:

The B.Sc Cyber Security programme shall consist of a period of Three years (Six Semesters).

e.3 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

S.No	Staff Category	Numbers
1	Computer Science Subject Core Faculty*	3
2	Inter-disciplinary Subject Faculty* (Mathematics, Account & Financial Management and Communication Skills)	2
3	Lab Assistant	1
4	Clerical Assistant	1

* Faculty at least in Assistant Professor level

e.4 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of CD, e-book, e-tutorials, Massive Open Online Courses (MOOC) courses, Open Educational Resources(OER) and virtual lab.

e.5 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, E-tutorial and virtual lab.

e.6 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post-admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal

(f) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the B.Sc (Cyber Security) programme shall be required to have passed the following examinations. Candidates who have passed HSC or 3 year Diploma from recognized institution shall be eligible.

Lateral Entry to II year B.Sc. (CS): 3 year Diploma in Cyber Security Engineering, Information Technology, Electronics and Communication Engineering, Electrical and Electronics Engineering

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**Face to face contact session per semester (in Hours)**
Theory courses (3 Courses with 4 credits each)	48
Practical courses (1 Courses with 4 credits each)	120
Total	**168**

f.3 *Evaluation*

The examinations shall be conducted separately for theory and practical's to assess the knowledge acquired during the study. There shall be two systems of

examinations viz., internal and external examinations. In the case of theory courses, the internal evaluation shall be conducted as Continuous Internal Assessment via. Student assignments preparation and seminar, etc. The internal assessment shall comprise of maximum 25 marks for each course. The end semester examination shall be of three hours duration to each course at the end of each semester. In the case of Practical courses, the internal will be done through continuous assessment of skill in demonstrating the experiments and record or report preparation. The external evaluation consists of an end semester practical examinations which comprise of 75 marks for each course.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook, case studies, review questions, quiz, multiple choice questions etc., for 25 marks.

- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.

- The learners should submit home assignment with worksheet for each course (Theory and Practical's) to **The Director, Directorate of Distance Education (DDE), Madhya Pradesh Bhoj Open University** Only along with response sheet contains name of the programme, name of the student, enrolment number, course name and subject code.

- Learners should submit home assignments of each courses both theory and practicals at least one month before the commencement of end semester examination of every semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment**	**Marks**
Review questions	15	Algorithm Design	15
Workbook, case studies, multiple choice questions	10	Workbook for preparing source code, PL/SQL coding , results	10
TOTAL	25	TOTAL	25

End Semester Examination

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

Learners shall prepare practical record note book according to the following guidelines; aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

f.3.1 Minimum for a pass:

- For internal Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (25) prescribed for UG and PG Courses.
- For External Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (75) prescribed for UG and PG Courses.

- In the aggregate (External + Internal), the passing minimum shall be 40% for UG and 50% for PG courses.

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Answer ALL questions

One question from each unit from the course syllabi

Part – A (10 x 2 Marks: 20 Marks)

Part – B (5 x 5 Marks: 25 Marks) (Internal Choice)

Part – C (3 x 10 Marks: 30 Marks) (Internal Choice)

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the B.Sc (DS) degree only if he/she passes all the (including arrears) courses with in a period of FIVE years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate

Range of Marks	Grade Points	Letter Grade	Description
90-100	9.0 - 10.00	O	Outstanding
80-89	8.0 - 8.9	D+	Excellent
75-79	7.5 - 7.9	D	Distinction
70-74	7.0 - 7.4	A+	Very Good
60-69	6.0 - 6.9	A	Good
50-59	5.0 - 5.9	B	Average
00-49	0.00	U	Reappear
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average [GPA] = $\sum C_iG_i / \sum C_i$

Grade Point Average = Sum of the multiplication of Grade points by the credit of the courses

Sum of the credit of the courses in the semester

= Sum of [Credit earned x Grade Points]

Sum of the credits earned in the semester

For the entire programme

CGPA	Grade	Classification of Final Result
9.5 – 10.00	O+	First class – Exemplary*
9.0 and above but below 9.5	O	
8.5 and above but below 9.0	D++	First class with Distinction*
8.0 and above but below 8.5	D+	
7.5 and above but below 8.0	D	
7.0 and above but below 7.5	A++	First Class
6.5 and above but below 7.0	A+	
6.0 and above but below 6.5	A	
5.5 and above but below 6.0	B+	Second Class
5.0 and above but below 5.5	B	
0.0 and above but below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribedsemester

f.4 Fees Structure

Fee Particulars	Amount in (Rs)		
	First Year	Second Year	Third Year
Admission Processing Fees	100	--	--
Course Fees	8,300	8300	8300
ICT fees	150	150	150
Total Fees	8550	8450	8450

The above mentioned fees structure is exclusive of examination fees.

(g) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well-equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme. Model Practical Questions is available to the learners in the university website.

g.2 Library Resources

The Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Cyber Security programmes. The Central library of University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(h) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development(Single Time Investment)	20,00,000/-
Programme delivery(Per Year)	24,00,000/-
Programme maintenance	5,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(a) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast directionand skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

A Bachelor of Cyber Security program typically aims to provide students with the knowledge and skills necessary to work in the field of Cyber Security. The expected program outcomes may include:

- Knowledge of Cyber Security: Graduates should have a deep understanding of the

concepts, principles, and methods of Cyber Security. This includes knowledge of statistical techniques, machine learning algorithms, and programming languages commonly used in Cyber Security.

- Ability to Collect and Analyze Data: Graduates should be able to collect, clean, and transform data, and apply appropriate statistical and machine learning techniques to extract insights from the data.
- Programming Skills: Graduates should have proficiency in programming languages such as Python, R, SQL, and other relevant tools and technologies used in Cyber Security.
- Data Visualization and Communication Skills: Graduates should be able to communicate insights and findings from data analysis effectively through visualizations, reports, and presentations.
- Domain Expertise: Graduates should have knowledge in a specific domain such as business, healthcare, or finance, and be able to apply Cyber Security techniques to solve real-world problems in that domain.
- Critical Thinking and Problem Solving Skills: Graduates should be able to analyze complex problems, identify relevant data, and use data-driven methods to solve problems.
- Ethical and Legal Considerations: Graduates should have an understanding of the ethical and legal implications of Cyber Security, including privacy, security, and bias issues.
- Lifelong Learning: Graduates should have the ability and motivation to continue learning new Cyber Security techniques and tools throughout their careers.

Appendix – Detailed Syllabi

Course Structure

Category	Course name	Code	Credit	Teaching Scheme		
				L	**T**	**P**
Semester – I						
	Digital Electronics	1203211	6	3	1	4
	Introduction to C-Programming	1203212	6	4	0	4
	Mathematics- I	1191111	4	3	1	0
	Generic Elective	*	4	3	1	0
	Communicative English	1216115	2	2	0	0
	Mentored Seminar – I	1207311	1	1	0	0
	Foreign Language – I (German /Spanish /Japanese)	1278111/ 1278112/ 1278113	2	2	0	0
Total Credit = 25				Teaching Hour = 29		
Semester – II						
	Computer Architecture	1201221	6	3	1	4
	Data Structures with Python	1201222	6	4	0	4
	Mathematics II	1192121	4	3	1	0
	Generic Elective	*	4	3	1	0
	Environmental Science	1154121	2	2	0	0
	Mentored Seminar – II	1205121	1	1	0	0
	Foreign Language – II (German /Spanish /Japanese)	1276121/ 1276122/ 1276123	2	2	0	0
Total Credit = 25				Teaching Hour = 29		
Semester – III						
	Information theory and coding	1203131	4	3	1	0
	Database Management System	1203231	6	4	0	4
	Operating System& System Programming	1203232	6	3	1	4
	Generic Elective	*	4	3	1	0
Total Credit = 20				Teaching Hour = 24		
Semester – IV						
	Blockchain	1203241	6	3	1	4
	Application and System Security	1203142	4	3	1	0
	Cyber Crimes and Legal Framework	1203143	4	3	1	0
	Information Security and Cryptography	1203244	6	3	1	4
Total Credit = 20				Teaching Hour = 20		
Semester –V						
	Computer Networks	1203251	6	3	1	4
	Malware Analysis	1203152	4	3	1	0
					2	

	Security Architecture and Models	1203153	4	3	1	0
	Minor Project	1207451	6	0	0	12
Total Credit = 20				Teaching Hour = 28		
Semester – VI						
	Elective I	1204161	4	3	1	0
	Elective II	1204162	4	3	1	0
	Project Work II/ Dissertation	1207461	6	0	0	12
Total Credit = 14				Teaching Hour = 20		

Elective I

- Cloud Computing
- Mobile & Digital Forensics
- Ethical hacking
- Big Data

Elective II

- Quantum Cryptography
- Mobile Application Security and Penetration Testing
- Online Social Networks and Security
- Deep Learning

Credit Distribution

Name of Department: Cyber Security

Name of the UG program: B.Sc

Duration of program: 6 Semester (3 years)

Head/ In-Charge of the department: Hemanta Dey

Semester	Credit						
	CC	DSE	GE	AECC	SEC	USC	Total/ Sem
1st							25
2nd							25
3rd							20
4th							20
5th							20
6th							14
Total Credit / Course							
Total Credit							**124**

***To be chosen from the List of Electives**

CC: Core Courses; **GE**: General Elective; **AECC:** Ability Enhancement Compulsory Course; **SEC**: Skill Enhancement Courses; **DSE**: Discipline Specific Elective; **USC:** University specified course

CORE COURSES (CC)

PAPER NAME: Digital Electronics

UNIT I: Number Systems & Codes (6L)

TOPICS

Decimal Number, Binary Number, Octal Number, Hexadecimal Number, Conversion – Decimal to Binary, Binary to Decimal, Octal to Binary, Binary to Octal, Hexadecimal to Binary, Binary to Hexadecimal, Octal to Binary to Hexadecimal, Hexadecimal to Binary to Octal; Floating Point Number Representation, Conversion of Floating Point Numbers, Binary Arithmetic, 1's and 2's Complement, 9's and 10's Complement, Complement Arithmetic, BCD, BCD addition, BCD subtraction, Weighted Binary codes, Non-weighted codes, Parity checker and generator, Alphanumeric codes

UNIT II: Logic Gates (2L)

TOPICS

OR, AND, NOT, NAND, NOR, Exclusive – OR, Exclusive – NOR, Mixed logic

UNIT III: Boolean Algebra (4L)

TOPICS

Boolean Logic Operations, Basic Law of Boolean Algebra, Demorgan's Theorem, Principle of

Duality

UNIT IV: Minimization Techniques (5L)

TOPICS

Sum of Products, Product of Sums, Karnaugh Map (up to 4 variables)

UNIT V: Multilevel Gate Network (3L)

TOPICS

Implementation of Multilevel Gate Network, Conversion to NAND-NAND and NOR-NOR Gate Networks

UNIT VI: Arithmetic Circuits (5L)

TOPICS

Half Adder, Full Adder, Half Subtractor, Full Subtractor, Carry Look Ahead Adder, 4-Bit Parallel Adder

UNIT VII: Combinational Circuits (5L)

TOPICS

Basic 2-input and 4-input multiplexer, Demultiplexur, Basic binary decoder, BCD to binary converters, Binary

to Gray code converters, Gray code to binary converters, Encoder

UNIT VIII: Sequential Circuits (5L)

TOPICS

Introduction to sequential circuit, Latch, SR Flip Flop, D Flip Flop, T Flip Flop, JK Flip Flop, Master Slave Flip

Flop

UNIT IX: Basics of Counters (2L)

TOPICS

Asynchronous (Ripple or serial) counter, Synchronous (parallel) counter

UNIT X: Basics of Registers (3L)

TOPICS

SISO, SIPO, PISO, PIPO, Universal Registers

Suggested Books:

1. Digital Circuit & Design, Salivahan,VIKAS
2. Digital Design, M. Morris. Mano & Michael D. Ciletti, PEARSON
3. Fundamentals of Digital Circuits; Anand Kumar; PHI
4. Digital Electronics; Tokheim; TMH
5. Digital Electronics; S. Rangnekar; ISTE/EXCEL

PAPER NAME: Introduction to C-Programming

UNIT I: TOPICS

Overview of C: History of C, Importance of C, Structure of a C Program.

Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant.

Input/output: Unformatted & formatted I/O function in C, Input functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(),putch(), putchar(), puts().

UNIT II: TOPICS

Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity.

Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement

UNIT III: TOPICS

Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement.

Functions: Definition, prototype, passing parameters, recursion. The C Preprocessor.

UNIT IV: TOPICS

Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime.

Arrays: Definition, types, initialization, processing an array, passing arrays to functions, Strings & arrays.

Pointers: Pointers and address, Pointers and function arguments, Pointers and arrays, Address arithmetic, Character pointer arrays, Pointers and functions, Pointer arrays, Pointers to pointers, Multidimensional arrays, initialization of pointer arrays, Pointer vs. Multi-dimensional arrays, Command-line arguments, Pointer to functions.

UNIT V: TOPICS

Structures and I/O: Basic of structures, Structures and functions, Arrays of structures, Pointers to structures, Self- referential structures, Table lookup, Type of, unions and bit-fields. Input and Output: Standard input and output, formatted output-Print, Variable length argument lists, File access, File descriptor, Low level I/O- Read and Write, Open, Create, Close.

Suggested Books:

1. Programming With C, Gottfried, TMH
2. Practical C Programming,Oualline,SPD/O'REILLY
3. Let us C-YashwantKanetkar.
4. Programming in C- Ashok N Kamthane
5. The C programming Lang., Pearson Ecl – Dennis Ritchie.

PAPER NAME: Computer Architecture

UNIT I: TOPICS: 1.Number Systems – decimal, binary, octal, hexadecimal, alphanumeric representation, 2.Complements – 1's complement, 2' complement, 9's complement, 10' complement, (r-1)'s complement, r's complement, 3. Fixed point representation – Integer representation, arithmetic addition, arithmetic subtraction, overflow, decimal fixed point representation, 4. Floating point representation, 5. IEEE 754 floating point representation

UNIT II: TOPICS: Computer arithmetic (5L)

1. Addition algorithm of sign magnitude numbers, 2. Subtraction algorithm of sign magnitude numbers, 3. Addition algorithms of signed 2's complement data, 4. Subtraction algorithms of signed 2's complement data, 5. Multiplication algorithm, Booth's algorithm, 6. Division algorithm

UNIT III: TOPICS Register transfer and micro-operations (5L)

1. Register transfer language, 2. Register transfer, 3. Bus system for registers, 4. Memory transfers– memory read, memory write, 5. Micro operations – register transfer micro operations, arithmeticmicro operations, logic micro operations, shift micro operations, 6. Binary adder, binary adder, subtractor, binary incrementer, arithmetic circuit for arithmetic micro operations, 7. One stage logiccircuit, 8. Selective set, Selective complement, Selective clear, Mask, Insert, Clear

UNIT IV: TOPICS Basic Computer organization and design (4L)

1. Instruction codes, 2. Direct address, Indirect address & Effective address, 3. List of basiccomputer registers, 4. Computer instructions: memory reference, register reference & input – outputinstructions, 5. Block diagram & brief idea of control unit of basic computer, 6. Instruction cycle

UNIT V: TOPICS Micro programmed control (2L)

1. Control memory, 2. Address sequencing, 3. Micro program examples

UNIT VI: TOPICS Central processing unit (5L)

1. General register organization, 2. Stack organization, Register stack, Memory stack, Stackoperations – push & pop, 3. Evaluation of arithmetic expression using stack, 4. Instruction format, 5.Types of CPU organization (single accumulator, general register & stack organization) & example oftheir instructions, 6. Three, two, one & zero address instruction, 7. Definition and example of datatransfer, data manipulation & program control instructions, 8. Basic idea of different typesofinterrupts (external, internal & software interrupts), 9. Difference between RISC & CISC

UNIT VII: TOPICS Pipeline and vector processing (3L)

1. Parallel processing, 2. Flynn's classification, 3. Pipelining, Example of pipeline, space timediagram, speedup, 4. Basic idea of arithmetic pipeline, example of floating point

addition/ subtractionusing pipeline

UNIT VIII: Input – output organization (6L)

TOPICS

1. Peripheral devices, 2. Input – output interface, 3. Isolated I/O, Memory mapped I/O, 4.Asynchronous data transfer: strobe & handshaking, 5. Programmed I/O, 6. Interrupt initiated I/O, 7.Basic idea of DMA & DMAC 8. Input – output processor

UNIT IX: Memory organization (6L)

TOPICS

1. Memory hierarchy, 2. Main memory definition, types of main memory, types of RAM, ROM,difference between SRAM & DRAM, 3. Cache memory, Cache memory mapping – Direct,Associative, Set Associative, 4. CAM, hardware organization of CAM, 5. Virtual memory, mappingusing pages, page fault, mapping using segments, TLB, 6. Auxiliary memory, diagrammaticrepresentation of magnetic disk & hard disk drive, 7. Definitions of seek time, rotational delay,access time, transfer time, latency

Suggested Books:

1. Computer System Architecture, M. Morris Mano, PEARSON
2. Computer Organization & Architecture –Designing For Performance, William Stallings, PEARSON
3. Computer Architecture & Organisation, J.P. Hayes, TATA MCGRAW HILL
4. Computer Organization and Architecture, T. K. Ghosh, TATA MCGRAW-HILL
5. Computer Architecture, BehroozParhami, OXFORD UNIVERSITY PRESS

PAPER NAME: Data Structure with Python

UNIT I: Introduction to Python (12L)

TOPICS

Introduction to Python

Python variables, expressions, statements:
Variables,Keywords,Operators&operands,Expressions , Statements, Orderof operations, String operations, Comments, Keyboard input, Example programs

Functions: Type conversion function, Math functions, Composition of functions, Defining own function, parameters, arguments, Importing functions, Example programs

UNIT II: Conditions & Iterations (8L)

TOPICS

Conditions: Modulus operator, Boolean expression, Logical operators, if, if-else, if-elif-else, Nested conditions, Example programs.

Iteration: while, for, break, continue, Nested loop, Example programs

UNIT III: Recursion, Strings, List, Dictionaries, Tuples

TOPICS

Recursion:Python recursion, Examples of recursive functions, Recursion error, Advantages & disadvantages of recursion

Strings:Accessing values in string, Updating strings, Slicing strings, String methods – upper(), find(), lower(), capitalize(), count(), join(), len(), isalnum(), isalpha(), isdigit(),

islower(),isnumeric(), isspace(), isupper() max(), min(), replace(), split(), 2.5 Example programs

List:Introduction, Traversal, Operations,Slice, Methods, Delete element, Difference between lists and strings.

Dictionaries: Introduction, Brief idea of dictionaries & lists

Tuples: Introduction, Brief idea of lists & tuples, Brief idea of dictionaries & tuples.

UNIT IV: TOPICS — Data Structure using Array (4L)

Stack, queue, circular queue, priority queue, dequeue and their operations and applications.

UNIT V: TOPICS — Searching and Sorting (6L)

Searching: linear search, Binary search, their comparison, Sorting: insertion sort, Selection sort.Quick sort, Bubble sort Heap sort, Comparison of sorting methods , Analysis of algorithm,complexity using big 'O' notation

UNIT VI: TOPICS — Linked List (4L)

Linear link lists, doubly linked lists, stack using linked list, queue using linked list, circular linked listand their operations and applications.

UNIT VII: TOPICS — Trees (5L)

Binary trees, binary search trees, representations and operations, thread representations, sequentialrepresentations, B tree , B+ tree,

UNIT VIII: TOPICS — Graphs (5L)

Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph,

Representation of graphs, Graph Traversal: Depth first search and Breadth first search. SpanningTrees, minimum spanning Tree, Shortest path algorithm

UNIT IX: TOPICS — Hashing (4L)

Definition, Hashing functions, Load factor and collision, open addressing (linear probing) andchaining method to avoid collision

Suggested Books:

1. Data Structures and Algorithms in Python, Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser
2. Data Structures and Algorithmic Thinking with Python, Narasimha Karumanchi
3. Python Data Structures and Algorithms: Benjamin Baka

PAPER NAME: Information theory and coding

Module 1) Entropy, Relative Entropy, and Mutual Information:

Entropy, Joint Entropy and Conditional Entropy, Relative Entropy and Mutual Information, Chain Rules, Data-Processing Inequality, Fano's Inequality

Module 2) Typical Sequences and Asymptotic Equipartition Property:

Asymptotic Equipartition Property Theorem, Consequences of the AEP: Data Compression, High-Probability Sets and the Typical Set

Module 3) Source Coding and Data Compression:

Kraft Inequality, Huffman Codes, Optimality of Huffman Codes

Module 4) Channel Capacity:

Symmetric Channels, Properties of Channel Capacity, Jointly Typical Sequences, Channel Coding Theorem, Fano's Inequality and the Converse to the Coding Theorem

Module 5) Differential Entropy and Gaussian Channel:

Differential Entropy, AEP for Continuous Random Variables, Properties of Differential Entropy, Relative Entropy, and Mutual Information, Coding Theorem for Gaussian Channels

Module 6) Linear Binary Block Codes:

Introduction, Generator and Parity-Check Matrices, Repetition and Single-Parity-Check Codes, Binary Hamming Codes, Error Detection with Linear Block Codes, Weight Distribution and Minimum Hamming Distance of a Linear Block Code, Hard-decision and Soft-decision Decoding of Linear Block Codes, Cyclic Codes, Parameters of BCH and RS Codes, Interleaved and Concatenated Codes

Module 7) Convolutional Codes:

Encoder Realizations and Classifications, Minimal Encoders, Trellis representation, MLSD and the Viterbi Algorithm, Bit-wise MAP Decoding and the BCJR Algorithm

Text Books :

Elements of Information Theory by Thomas Cover, Joy Thomas

Channel Codes: Classical and Modern by William Ryan, Shu Lin

References :

Information Theory and Reliable Communication by Robert Gallager

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PAPER NAME: Database management System

UNIT I: TOPICS — Database System Concepts & Architecture: Data Independence, Schemas, Instances, Database Languages, Database System Environments Data Models, Basic Structure of Oracle System, Storage Organization in

Oracle.

UNIT II: TOPICS — Data Modelling: Use of High –level Conceptual Data Models, ER Diagrams, Subclasses, Superclasses and

Inheritance, Specialization & Generalization, Conceptual Object Modeling using UML ClassDiagrams, Knowledge Representation Concepts, Exercises.

UNIT III: TOPICS — Relational Data Model: Relational constraints, domain constraints, key constraints referential integrity Constraints, relational algebra, fundamental operations of relational algebra & their Implementation, interdependence of operations, example queries.

UNIT IV: TOPICS — ER and EER to Relational Mapping: Mapping EER model concepts to relation, tuple relational calculus, domain relational Calculus queries.

UNIT V: TOPICS — Database Design: Functional dependencies, irreducible sets of dependencies, loss less decomposition, 1st, 2^{nd} & 3^{rd} NF, dependency preservation, Boyce Codd NF, Multivalued Dependency & 4th NF, join Dependency & 5 NF, domain key normal form, restriction –union normal form, Denormalization.

UNIT VI: TOPICS — Query Processing And Optimization: SQL Basic Queries in SQL, Sub queries, Retrieving a Query Plan – Table Space Span & I/O, Index Scan, Equal Unique Index Lookup, Clustered vs. Non Clustered Indexing, Index Only Scan, Methods for Joining Tables –Nested Loop Join Merge Join, Hybrid Join, Multiple table Join, Transforming Nested Queries to Joins, Object Relational SQL, Procedural SQL, Introduction to Embedded SQL.

UNIT VII: TOPICS — Transaction: Schedules, Serializability, Precedence Graph, Concurrency Control Techniques, Implementation of Transaction in Programs, Cursors and Transaction, Dynamic SQL, Locking Levels of Isolation, Recovery, Checkpoints.

Suggested Books:

1. Fundamental of Database Systems- Elmasri Navathe- Pearson Education Asia
2. Database- Principles, Programming and Performance- Parick O' Neil Elizabeth O'Niel, Harcort Asia PTE Limited
3. An Introduction to Database Systems- C.J.Date, Addison Wesley, Pearson EducationPress
4. Database System Concepts- Abraham Silberschat, Henry F. Korth, S.Sudarshan, Tata McGraw Hill.

PAPER NAME: Operating System & System Programming

UNIT I: TOPICS — Introduction : Importance of OS, Basic concepts and terminology, Types of OS, Different views, Journey of a command execution, Design and implementation of OS

UNIT II: TOPICS — Process : Concept and views, OS view of processes, OS services for process management, Scheduling algorithms, Performance evaluation; Inter-process communication and synchronization, Mutual exclusion, Semaphores, Hardware support for mutual exclusion, Queuing implementation of semaphores, Classical problem of concurrent programming, Critical region and conditional critical region, Monitors,

Messages, Deadlocks

UNIT III: TOPICS — Storage Management: Memory Management- Backward, Swapping, Contiguous Memory Allocation, Paging, Segmentation, Segmentation with Paging.

UNIT IV: TOPICS — File-System Interface and Implementation: File Concept, Access Methods, Directory Structure, Protection, File-System Structure, File-System Implementation, Directory Implementation; Allocation Methods, Free-Space Management.

UNIT V: TOPICS — Mass-Storage Structure: Disk Structure; Disk Scheduling; Disk Management; Swap-Space Management

UNIT VI: TOPICS — Assemblers: Elements of Assembly Language Programming, Design of the Assembler, Assembler Design Criteria, Types of Assemblers, Two-Pass Assemblers, One-Pass Assemblers, Single pass Assembler for Intel x86 , Algorithm of Single Pass Assembler, Multi-Pass Assemblers

UNIT VII: TOPICS — Compilers: Causes of Large Semantic Gap, Binding and Binding Times, Data Structure used in Compiling, Scope Rules, Memory Allocation, Compilation of Expression, Compilation of Control Structure, Code Optimization

Suggested Books:

1. Operating Systems, Galvin, John Wiley
2. Operating Systems , Milankovic, TMH
3. An Introduction to Operating System, Bhatt,PHI
4. Modern Operating System, Tannenbaum,PHI
5. Guide to Operating Systems, Palmer, VIKAS
6. Operating Systems, Prasad, Scitech

PAPER NAME: Cyber Crimes and Investigation

Introduction to cybercrime, Data diddling, Data leakage, Eavesdropping, E-mail forgery, E-mail threats, Internet misinformation, Internet terrorism, Password cracking, Round downs, Salami Techniques, Scavenging/Corporate Espionage, Social Engineering, Software Piracy, Spamming, Super zapping, Piggybacking, Trap door, Trojan Horse, Virus, Worm Impersonation, Time bomb, Logic bomb, DOS Attack

Email Hacking& its security ,Social Media Hacking& its Security, Web Hacking& its Security, Mobile Hacking& its Security, Wi-Fi Network Hacking& its Security, Software Hacking, Reverse Engineering Cross site scripting & its Security, Email forgery and E-mail Tracing.

Intrusion Analysis, Intrusion Analysis as a Core Skillset, Methods to Performing Intrusion Analysis, Intrusion Kill Chain, Passively Discovering Activity in Historical Data and Logs, Detecting Future Threat Actions and Capabilities, Denying Access to Threats, Delaying and Degrading Adversary Tactics and Malware, Identifying Intrusion Patterns and Key Indicators

Text Books:

1) Cyber Law Law Of Information Technology And Internet (Lexix Nexis) Anirudh Rastogi
2) Understanding Laws– Cyber Laws And Cyber Crimes (Lexix Nexis)
3) Cyber Crime Manual by Bibhas Chatterjee, Lawman Publication

PAPER NAME: Computer Networks

Module I: (6L)

Definition of computer system, Block Diagram, Components of a computer system, generations of computers, storage devices, Memory Hierarchy, Software, Classification of software, Operating System and its functionalities

Module II: (6L)

Introduction to networking; Data communications: components, data representation (ASCII,ISO etc.), direction of data flow (simplex, half duplex, full duplex); network criteria, physical structure (type of connection, topology), categories of network (LAN, MAN,WAN);

Internet: brief history, Protocols and standards; Reference models: OSI reference model, TCP/IP reference model, their comparative study.

Overview of data(analog & digital), signal(analog & digital), transmission (analog & digital) & transmission media (guided & unguided);

Module III: (8L)

Local Area Networks and data link protocols, point-to-point links and sliding window flow control, CSMA/CD, Ethernet, wireless LAN, cellular networks, and advanced multi-user communication (CDMA, SDMA/MIMO), mobility

Internetworking using TCP/IP: network programming using socket API, network client/server design

Packet/circuit switching and wide-area networks: store-and-forward networks, source routing, virtual/permanent, circuits and call set-up, LAN/WAN addressing, hop-by-hop vs. end-to-end control

Module IV: (10L)

Routing techniques - intra-domain routing (OSPF, RIP), inter-domain policy routing (BGP) and network connectivity

Transport protocols - TCP and UDP, Congestion control, TCP window control, multimedia streaming

High-level network services - DNS, HTTP, SMTP, network management (SNMP), network security

Module V: (10L)

Introduction and history of Internet, WWW, Markup Language: HTML, XML and tags, Scripting Languages, Client-Server Architecture, websites, Internet security and threats, Firewall, Introduction to e-commerce

Text Books:

1. Fundamental of Computers, V.Rajaraman, Prentice Hall India
2. Computer Networks by AS Tanenbaum, Fourth Edition, 2002, Pearson Education
3. Data Communication and Networking by B. Forouzan
4. Data and Communication by W. Stallings
5. Web Technologies: AchyutGodbole, AtulKahate - McGraw Hill

PAPER NAME: Application and System Security

Module I: Introduction.
Protocols and standards, Hypertext Transfer Protocol (HTTP), Markup languages Hypertext Markup Language (HTML), Cascading Style Sheets (CSS).

Module II: Web Application.
Extensible Hypertext Markup Language (XHTML), CGI scripts and clickable maps,
JAVA applets, JAVA servlets, Perl. DHTML, XML, Client-side technologies, JavaScript, Server-side technologies , SQL , PHP.

Module III: Software and System Security.
Control hijacking attacks – buffer overflow, integer overflow, bypassing browser memory protection, Sandboxing and Isolation, Tools and techniques for writing robust application software, Security vulnerability detection tools, and techniques – program analysis, Privilege, access control, and Operating System Security, Exploitation techniques, and Fuzzing.

Module IV: Network Security & Web Security.
Security Issues in TCP/IP – TCP, DNS, Routing (Topics such as basic problems of security in TCP/IP, IPsec, BGP Security, DNS Cache poisoning etc), Network Defense tools – Firewalls, Intrusion Detection, Filtering, DNSSec, NSec3, Distributed Firewalls, Security architecture of World Wide Web, Security Architecture of Web Servers, and Web Clients, Web Application Security – Cross Site Scripting Attacks, Cross Site Request Forgery, Https, Threat Modeling, Attack Surfaces.

Module V: Security in Mobile Platforms.
Android security model, threat models, information tracking, rootkits, Threats in mobile applications, analyzer for mobile apps to discover security vulnerabilities, Viruses, spywares, and keyloggers and malware detection

Module VI: Introduction to Hardware Security, Supply Chain Security.
Threats of Hardware Trojans and Supply Chain Security, Side Channel Analysis based Threats, and attacks.

Text Books:

1. Principles of Computer Security: W.A.Coklin, G.White, Fourth Edition, McGrawHill

2. Cryptography and Network Security Principles and Practices*, William Stallings, Seventh Edition, Pearson*

3. Web Technologies: TCP/IP, Web/Java Programming, and Cloud Computing
Achyut S. Godbole, Tata McGraw-Hill Education, 2013

PAPER NAME: Information Security & Cryptography

Information Security: Introduction, History of Information security, What is Security, CNSS Security Model, Components of Information System, Balancing Information Security and Access, Approaches to Information Security Implementation, The Security Systems Development Life Cycle.

Cryptography: Concepts and Techniques, symmetric and asymmetric key cryptography, steganography, Symmetric key Ciphers: DES structure, DES Analysis, Security of DES, variants of DES, Block cipher modes of operation , AES structure, Analysis of AES , Key distribution Asymmetric key Ciphers: Principles of public key cryptosystems, RSA algorithm, Analysis of RSA, Diffie-Hellman Key exchange

Message Authentication and Hash Functions: Authentication requirements and functions, MAC and Hash Funtions, MAC Algorithms: Secure Hash Algorithm, Whirlpool, HMAC, Digital signatures, X.509, Kerberos UNIT – IV Security at layers(Network, Transport, Application): IPSec, Secure Socket Layer(SSL), Transport Layer Security(TLS), Secure Electronic Transaction(SET), Pretty Good Privacy(PGP), S/MIME

Inruders, Virus and Firewalls: Intruders, Intrusion detection, password management, Virus and related threats, Countermeasures, Firewall design principles, Types of firewalls

Introduction to Cryptoanalysis: Linear Cryptanalysis, Differential Cryptanalysis, Cryptanalysis of DLP

Cryptography Lab:

1) Perform Basic Encryption/Decryption (Text only)..
2) Diffie-Hellman key exchange and symmetric key cryptography.
3) Public key cryptography using RSA.
4) Implementing Private Key cryptography.
5) Perform Basic Encryption/Decryption
6) Perform Basic Hash Functions (Like MD4, MD5 etc.).
7) Perform Basic Fractal functions (Like Julia set etc.)
8) Generate Asymmetric Key Pair.
9) Generate Web Certificate from Key Pair.
10) Run Secure Web Server Using Web Certificate.
11) An Application on Watermarking Technique.

Text Books:

1. Principles of Information Security : Michael E. Whitman, Herbert J. Mattord, CENGAGE Learning, 4th Edition.
2. Cryptography and Network Security : William Stallings,
Pearson Education,4th Edition
3. Cryptography and Network Security : Forouzan Mukhopadhyay, Mc Graw Hill, 2nd Edition

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PAPER NAME: Malware Analysis

Introduction: Computer Infection Program- Life cycle of malware- Virus nomenclature- Worm nomenclature- Tools used in computer virology.
Implementation of Covert Channel Non self-reproducing Malware- Working principle of Trojan Horse- Implementation of Remote access and file transfer- Working principle of Logical Bomb- Case Study: Conflicker C worm.

Virus Design And Its Implications :Virus components- Function of replicator, concealer and dispatcher- Trigger Mechanisms- Testing virus codes- Case Study: Brute force logical bomb.
Malware Design Using Open Source :Computer Virus in Interpreted programming language- Designing Shell bash virus under Linux- Fighting over infection- Anti –antiviral fighting – Polymorphism- Case study: Companion virus.
Virus And Worm Analysys Klez Virus- Clone Virus- Doom Virus- Black wolf worm- Sassar worm- Happy worm 99.

TEXT BOOKS:

1. ErciFiliol, "Computer Viruses: from theory to applications", Springer, 1st edition, 2005
2. Mark.A .Ludwig, "The Giant black book of computer viruses,CreateSpace Independent Publishing Platform, 2 nd edition, 2009,ISBN 10: 144140712X

PAPER NAME: Security Architecture and Models

Module I: Security Architecture And Information.
Introduction, History, Information Security, Critical Characteristics of Information, Components of an Information System, Securing the Components, Balancing Security and Access, Need for security, Business needs, Threats, Attacks, Legal, Ethical and Professional Issues.

Module II: Logical design and physical design.
Blueprint for security, Information Security policy, NIST Models, VISA International security model, Design of Security Architecture, Planning for continuity, Security Technology, IDS, Crytography, Access Control Devices, Physical Security, Security and Personnel.

Module III: Low-level architecture.
Security Assessments, Security Architecture Basics, Architecture Patterns in Security, Cryptography, Trusted Code, Secure Communications.

Module IV: Mid-level architecture.
Middleware Security, Web Security, Application and OS Security, Database Security.

Module V: High-level architecture.
Security Components, Security and Other Architectural Goals, Enterprise Security Architecture.

Module VI: Business cases and security.
Business Cases for Security.

PAPER NAME: Cloud Computing

Introduction: Cloud computing definition, reference model, Characteristics, Benefits,
Challenges, Distributed Systems, Virtualization, Service-oriented computing, Utility-oriented computing, Overview on computing platforms & technologies – AWS,Google AppEngine, MS Azure, Hadoop, Saleforce.com, Manjrasoft Aneka
Parallel & Distributed Computing: Parallel vs. Distributed computing, Elements of parallel computing, Parallel processing - hardware architecture & approaches, Concept & Component of Distributed Computing, RPC, Service-oriented computing Virtualization: Cloud reference model

– IaaS, PaaS, SaaS, Types of clouds – Public,Private, Hybrid, Community, Cloud interoperability & standards, scalability & fault tolerance, Security, trust & privacy
Concurrent Computing, High-throughput Computing and Data-Intensive Computing:Programming applications with Threads, Thread API, Parallel computation with Threads,Task computing, Frameworks for Task computing, Task-based application model,
Data-intensive computing, characteristics, technology Cloud Platforms and Applications: Overview on Amazon Web Services, Google AppEngine and Microsoft Azure, Cloud applications in scientific, business and consumer Domain

Text Books:

1. Buyya, Vecciola and Selvi, Mastering Cloud Computing: Foundations and Applications Programming, Tata McGraw Hill
2. Rittinghouse and Ransome, Cloud Computing: Implementation, Management, and Security, CRC Press
3. Aravind Doss, Cloud Computing, Tata McGraw Hill
4. Kris Jamsa, Cloud Computing: SaaS, PaaS, IaaS, Virtualization, Business Models, Mobile, Security and More, Jones & Bartlett Learning

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PAPER NAME: Mobile & Digital Forensics

Overview of wireless technologies and security: Personal Area Networks, Wireless Local Area Networks, Metropolitan Area Networks, Wide Area Networks. Wireless threats, vulnerabilities and security: Wireless LANs, War Driving, War Chalking, War Flying, Common Wi-fi security recommendations, PDA Security, Cell Phones and Security, Wireless DoS attacks, GPS Jamming, Identity theft.
CIA triad in mobile phones-Voice, SMS and Identification data interception in GSM: Introduction, practical setup and tools, implementation- Software and Hardware Mobile phone tricks: Netmonitor, GSM network service codes, mobile phone codes, catalog tricks and AT command set- SMS security issues
Mobile phone forensics: crime and mobile phones, evidences, forensic procedures, files present in SIM card, device data, external memory dump, evidences in memory card, operators systems-Android forensics: Procedures for handling an android device, imaging android USB mass storage devices, logical and physical techniques
Digital forensics: Introduction – Evidential potential of digital devices: closed vs. open systems, evaluating digital evidence potential- Device handling: seizure issues, device identification, networked devices and contaminationUnit V (8 hours) Digital forensics examination principles: Previewing, imaging, continuity, hashing and evidence locationsSeven element security model-developmental model of digital systems- audit and logs- Evidence interpretation: Data content and context

Text Books:

1. Gregory Kipper, “Wireless Crime and Forensic Investigation”, Auerbach Publications, 2007
2. Iosif I. Androulidakis, “ Mobile phone security and forensics: A practical approach”, Springer publications, 2012

3. Andrew Hoog, " Android Forensics: Investigation, Analysis and Mobile Security for Google Android", Elsevier publications, 2011
4. Angus M.Marshall, " Digital forensics: Digital evidence in criminal investigation", John – Wiley and Sons, 2008

PAPER NAME: Penetration Testing & Vulnerability Assessment

Introduction Ethical Hacking terminology- Five stages of hacking- Vulnerability Research- Legal implication of hackingImpact of hacking.
Foot printing & Social engineering Information gathering methodologies- Competitive Intelligence- DNS Enumerations- Social Engineering attacks.
Scanning & Enumeration Port Scanning-Network Scanning- Vulnerability Scanning- NMAP scanning tool- OS FingerprintingEnumeration.
System Hacking Password cracking techniques- Key loggers- Escalating privileges- Hiding Files- Steganography technologies- Countermeasures.
Sniffers & SQL Injection Active and passive sniffing- ARP Poisoning- Session Hijacking- DNS Spoofing- Conduct SQL Injection attack - Countermeasures.

TEXT BOOKS:

1. Kimberly Graves, "CEH: Official Certified Ethical Hacker Review Guide", Wiley Publishing Inc., 2007. ISBN: 978-0-7821-4437-6.
2. Shakeel Ali &TediHeriyanto, "Backtrack -4: Assuring security by penetration testing", PACKT Publishing., 2011. ISBN: 978-1-849513-94-4.

PAPER NAME: Risk Management

Module I: Introduction to Information Risk Management. [9L]
Introduction to Risk Management, The Business Risk Model, Information and Technology Risk Management, Identifying IT Risks and Controls, Risk Information Processes, Assessing and Mitigating Risk at the Process Level, Managing Project Risk.

Module II: Introduction to Risk Assessments and Risk Semantics. [7L]
Assessing Information Risks and Controls, A Framework for Assessing IT Risks, The Role of IT Audit and Risk Assessments, IT Governance, Non-Technical Security Risks, The Risks Caused by People – Social Engineering & Behavioral Security.

Module III: Risk Issues in IT and Telecommunication. [9L]
The Risks of Connectivity, Risks Surrounding IT and Telecommunication Networks, Organizational Network and Application Security, Internet & Host Security, Firewalls & VPNs, IT Fraud in Organizations, Cyber Crime and Terrorism, Digital and Computer Forensics.

Module IV: Security Management. [6L]
Information Security Management, Corporate Security Policy, The Ongoing Management of Information Security, Measuring Security, Incident Response.

Module V: Incident Analysis. [4L]

Introduction, Log analysis, Event criticality, General log configuration and maintenance, Live Incident Response, Timelines, Other forensics topics

Text Books:

1. Manish Agrawal, Alex Campoe and Eric Pierce, "Information Security and IT Risk Management", Wiley.
2. Michael E. Whitman, "Principles of Information Security", Cengage Learning.

PAPER NAME: Hardware Security

Overview of Different Issues of Hardware Security
Preliminaries: Algebra of Finite Fields, Basics of the Mathematical Theory of Public Key Cryptography, Basics of Digital Design on Field-programmable Gate Array (FPGA), Classification using Support Vector Machines (SVMs)
Useful Hardware Security Primitives: Cryptographic Hardware and their Implementation, Optimization of Cryptographic Hardware on FPGA, Physically Unclonable Functions (PUFs), PUF Implementations, PUF Quality Evaluation, Design Techniques to Increase PUF Response Quality
Side-channel Attacks on Cryptographic Hardware: Basic Idea, Current-measurement based Side-channel Attacks (Case Study: Kocher's Attack on DES), Design Techniques to Prevent Side-channel Attacks, Improved Side-channel Attack Algorithms (Template Attack, etc.), Cache Attacks
Testability and Verification of Cryptographic Hardware: Fault-tolerance of Cryptographic Hardware, Fault Attacks, Verification of Finite-field Arithmetic Circuits
Modern IC Design and Manufacturing Practices and Their Implications: Hardware Intellectual Property (IP) Piracy and IC Piracy, Design Techniques to Prevent IP and IC Piracy, Using PUFs to prevent Hardware Piracy, Model Building Attacks on PUFs (Case Study: SVM Modeling of Arbiter PUFs, Genetic Programming based Modeling of Ring Oscillator PUF)
Hardware Trojans: Hardware Trojan Nomenclature and Operating Modes, Countermeasures Such as Design and Manufacturing Techniques to Prevent/Detect Hardware Trojans, Logic Testing and Side-channel Analysis based Techniques for Trojan Detection, Techniques to Increase Testing Sensitivity Infrastructure Security: Impact of Hardware Security Compromise on Public Infrastructure, Defense Techniques (Case Study: Smart-Grid Security)

Text Books:

1. Debdeep Mukhopadhyay and Rajat Subhra Chakraborty, "Hardware Security: Design, Threats, and Safeguards", CRC Press

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PAPER NAME: BIOMETRIC SECURITY

Introduction to Biometrics, Fingerprint Recognition, Face Recognition, Iris Recognition, Hand Geometry Recognition

Gait Recognition, The Ear as a Biometric, Voice Biometrics, A Palm print Authentication System, and OnLine Signature Verification
3D Face Recognition, Automatic Forensic Dental Identification, Hand Vascular Pattern Technology, Introduction to Multi biometrics, Multispectral Face Recognition
Multi biometrics Using Face and Ear, Incorporating Ancillary Information in Multi biometric Systems, The Law and the Use of Biometrics, Biometric System Security, Spoof Detection Schemes
Linkages between Biometrics and Forensic Science, Biometrics in the Government Sector, Biometrics in the Commercial Sector, Biometrics Standards, Biometrics databases

Text Books:

1. Jain, Anil K.; Flynn, Patrick; Ross, Arun A. (Eds.), Handbook of Biometrics, Springer, 2008.
3. Benjamin Muller, Security, Risk and the Biometric State: Governing Borders and Bodies, 1st Edition, Routledge, 2010.

PAPER NAME: Project – I

PAPER NAME: Project Work II/ Dissertation

To carry out a computer application based project individually or in groups

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

M.Sc (Cyber Security)

(from Calendar Year 2023)

Submitted to

UGC, DISTANCE EDUCATION BUREAU (DEB)

New Delhi

For seeking approval to introduce new programme through ODL

Contents

M.Sc (Cyber Security)
Choice Based Credit System (CBCS)
(With effective from June 2023-24 onwards)

a) Programme mission and objectives

Mission:

It provides a strong foundation in the theoretical concepts of Cyber Security as well as a firm grounding in Programming Languages. It is designed to enable one to undertake software applications for business and industry. Successful candidates could also opt for a teaching career in secondary schools.

Objectives:

The objective of a Master of Science in Cyber Security program is to provide students with a comprehensive understanding of the various aspects of cyber security, including threats, vulnerabilities, and protective measures. The program aims to develop the skills and knowledge necessary for students to identify, analyze, and address cyber security issues in a wide range of contexts. Some specific objectives of a M.Sc. in Cyber Security program include:

- Understanding Cyber Security Concepts: To provide students with a comprehensive understanding of the concepts, theories, and practices of cyber security.
- Knowledge of Security Technologies: To introduce students to various security technologies such as firewalls, intrusion detection and prevention systems, and encryption technologies.
- Understanding Threats and Vulnerabilities: To teach students about various threats and vulnerabilities in cyberspace, such as viruses, malware, phishing attacks, and social engineering.
- Analyzing Cyber Security Risks: To help students identify and analyze potential cyber security risks in various settings, such as corporate networks, financial systems, and critical infrastructure.
- Developing Security Strategies: To help students develop strategies to protect against cyber attacks and to respond to security incidents.
- Communication and Collaboration: To develop the communication and collaboration skills necessary to work effectively in interdisciplinary teams to solve complex cyber security problems.
- Ethics and Law: To provide students with an understanding of ethical and legal issues related to cyber security, including privacy, intellectual property, and cybercrime.
- Career Readiness: To prepare students for a range of careers in cyber security, including security analysts, security engineers, security consultants, and security managers.

Outcome:

An M.Sc. in Cyber Security is a highly specialized degree that provides graduates with the skills and knowledge necessary to secure computer systems and networks from cyber

threats. Graduates of this program are in high demand, as businesses and organizations increasingly rely on technology to manage their operations, and cyber threats become more sophisticated.

With an M.Sc. in Cyber Security, graduates can pursue a variety of careers, such as:

- Information Security Analyst: Information security analysts are responsible for protecting an organization's computer networks and systems from cyber attacks.
- Cybersecurity Consultant: Cybersecurity consultants work with organizations to develop and implement security solutions that protect against cyber attacks.
- Security Architect: Security architects design and implement security systems for organizations, including firewalls, intrusion detection systems, and encryption protocols.
- Penetration Tester: Penetration testers are ethical hackers who test an organization's security systems to identify vulnerabilities that could be exploited by cybercriminals.
- Security Operations Center (SOC) Analyst: SOC analysts monitor an organization's computer networks and systems for security threats and respond to incidents when they occur.

In addition to these career paths, an M.Sc. in Cyber Security can also lead to opportunities in research and academia, as well as roles in government and law enforcement agencies.

Overall, an M.Sc. in Cyber Security can provide graduates with a rewarding and challenging career in a field that is critical to the safety and security of organizations around the world.

b) Relevance of the program with HEI's mission and goals

HEI's mission and goals to be offered through distance mode to reach quality higher education to the rurallearners. The distance mode meets the mission of HEI's like Digital India and paper-less transaction will enrich thehuman resources for the uplift of the nation.

c) Nature of prospective target group of learners

The target group of learners for a Master of Science in Cyber Security program delivered through Open and Distance Learning (ODL) may include:

- Working professionals: Individuals who are already working in the field of cyber security, IT or related industries may be interested in pursuing an M.Sc. in Cyber Security through ODL to enhance their skills and knowledge in the field while continuing to work.
- IT professionals: Individuals who have completed an undergraduate degree in IT or computer science and are interested in specializing in cyber security can opt for an M.Sc. in Cyber Security through ODL to gain specialized knowledge in the field.
- Military or law enforcement professionals: Military or law enforcement personnel who work in cyber security may also be interested in pursuing an M.Sc. in Cyber Security through ODL to enhance their skills and knowledge in this field.
- Recent graduates: Recent graduates with a bachelor's degree in IT or

computer science may also be interested in pursuing an M.Sc. in Cyber Security through ODL to gain specialized knowledge and skills in cyber security and increase their employability in the field.

- International learners: Individuals from around the world who are interested in pursuing an M.Sc. in Cyber Security from a reputable institution may find ODL programs a good option, as they allow learners to study from their home countries while earning a globally recognized degree.

Overall, the target group of learners for an M.Sc. in Cyber Security program delivered through ODL would include individuals who are interested in gaining specialized knowledge and skills in cyber security while balancing their professional and personal commitments.

d) Appropriateness of programme to be conducted in open and distance learning mode toacquire specific skills and competence:

An M.Sc. in Cyber Security program is highly appropriate for delivery through open and distance learning (ODL) mode, as it is a field that is highly dependent on technology and digital communication. Here are some reasons why:

1. Flexibility: ODL mode offers flexibility in terms of time, location, and pace of learning, which is highly beneficial for working professionals who may have other commitments, or learners who are unable to relocate to a physical campus.
2. Learning resources: Cyber security is a field that requires access to up-to-date learning resources, including online journals, forums, and tools for hands-on practice. ODL programs can provide learners with access to such resources, allowing them to develop practical skills and knowledge in the field.
3. Collaborative learning: Cyber security is an area where collaboration is essential, as threats and vulnerabilities are constantly evolving. ODL programs can facilitate collaborative learning through virtual classrooms, group projects, and online forums.
4. Security considerations: Cyber security is a highly sensitive area, and ODL programs need to take appropriate measures to ensure the security of the learning platform and the information being shared. With appropriate security measures, ODL programs can provide a secure and safe learning environment.
5. Global reach: Cyber security is a global concern, and an ODL program can attract learners from around the world, allowing for a diverse and international cohort of students. This can provide learners with exposure to

different perspectives and experiences in the field of cyber security.

Overall, an M.Sc. in Cyber Security program delivered through ODL can be highly effective in helping learners acquire specific skills and competence in the field. The key is to design the program to ensure that learners have access to the resources, tools, and support they need to develop practical skills and knowledge in a secure and collaborative learning environment.

e) Instructional Design

e.1 Regulations and curriculum design

1. The University reserves the rights to amend the regulations, schemes of examinations and syllabi from time totime based on recent IT trends
2. Every student should secure 120 credits to complete M.Sc Cyber Security programme.
3. Each theory course carries 4 credits with 75 marks in the university end semester and 25 marks in the internal assessment and each practical (lab) course carries 4 credits with 75 marks in the university end semester examination and 25 marks in the internal assessment.

Programme Code: 132

COURSE OF STUDY AND SCHEME OF EXAMINATION

Sub Code	Subject Name	Credit	
		Theory	Practical
Semester – I			
MSCCS-101	Principles of Cyber Security	4	
MSCCS-102	Fundamental of Computer Networking	4	
MSCCS-103	Cyber Security Techniques	4	
MSCCS-104	Computational Number Theory and Cryptography	4	
MSCCS-105	Software Lab for MSCCS-103, MSCCS-104		2
		16	
Semester – II			
MSCCS-201	Web Development Tools	4	
MSCCS-202	Cloud Infrastructure and Services	4	
MSCCS-203	Application and Network Security	4	
MSCCS-204	Cyber Attacks and Counter Measures: User Perspective	4	
MSCCS-205	Software Lab for MSCCS-201, MSCCS-203		2
		16	
Semester – III			
MSCCS-301	Mobile Operating System and Security	4	
MSCCS-302	Information Security Assurance: Framework, Standards and Industry best practices	4	
MSCCS-303	Digital / Computer Forensics	4	

MSCCS-304	Security Analysis and Reporting	4	
MSCCS-305	Software Lab for MSCCS-303, MSCCS-304		2
		16	
Semester – IV			
MSCCS-401	Hacking Techniques	4	
MSCCS-402	Cyberspace and Its Governance	4	
MSCCS-403	Software Lab for MSCCS-401		2
MSCCS-404	Cyber Security - Case Study/Dissertation		8
		08	10

Syllabus: Annexure

e.2 Duration of the Programme:

The M.Sc Cyber Security programme shall consist of a period of Two years (four Semesters).

e.3 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

S.No	Staff Category	Numbers
1	Computer Science Subject Core Faculty*	3
2	Inter-disciplinary Subject Faculty* (Mathematics, Account & Financial Management and Communication Skills)	2
3	Lab Assistant	1
4	Clerical Assistant	1

* Faculty at least in Assistant Professor level

e.4 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of CD, e-book, e-tutorials, Massive Open Online Courses (MOOC) courses, Open Educational Resources(OER) and virtual lab.

e.5 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, E-tutorial and virtual lab.

e.6 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation

methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post-admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the Directorate or Learning centres. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal

(f) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the M.Sc (Cyber Security) programme shall be required to have passed the following examinations. Candidates who have passed B.Sc.(CS)/B.Sc.(IT) or equaling from recognized institution shall be eligible.

Lateral Entry to II year M.Sc. (CS): 3 year Diploma in Cyber Security Engineering, Information Technology, Electronics and Communication Engineering, Electrical and Electronics Engineering

f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.
- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	**Face to face contact session per semester (in Hours)**
Theory courses (3 Courses with 4 credits each)	48
Practical courses (1 Courses with 4 credits each)	120
Total	**168**

f.3 *Evaluation*

The examinations shall be conducted separately for theory and practical's to assess the knowledge acquired during the study. There shall be two systems of examinations viz., internal and external examinations. In the case of theory courses, the internal evaluation shall be conducted as Continuous Internal Assessment via. Student assignments preparation and seminar, etc. The internal assessment shall comprise of maximum 25 marks for each course. The end semester examination shall be of three hours duration to each course at the end of each semester. In the case of Practical courses, the internal will be done through continuous assessment of skill in demonstrating the experiments and record or report preparation. The external evaluation consists of an end semester practical examinations which comprise of 75 marks for each course.

Internal assessment

- Internal assessment of theory courses is through home assignment with workbook,

case studies, review questions, quiz, multiple choice questions etc., for 25 marks.

- The internal assessment for the practical courses shall be through home assignment which includes workbook designing algorithm, preparing source code, PL/SQL coding etc., for 25 marks.

- The learners should submit home assignment with worksheet for each course (Theory and Practical's) to **The Director, Directorate of Distance Education (DDE), Madhya Pradesh Bhoj Open University** Only along with response sheet contains name of the programme, name of the student, enrolment number, course name and subject code.

- Learners should submit home assignments of each courses both theory and practicals at least one month before the commencement of end semester examination of every semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment**	**Marks**
Review questions	15	Algorithm Design	15
Workbook, case studies, multiple choice questions	10	Workbook for preparing source code, PL/SQL coding , results	10
TOTAL	25	TOTAL	25

End Semester Examination

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

Learners shall prepare practical record note book according to the following guidelines; aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

f.3.1 Minimum for a pass:

- For internal Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (25) prescribed for UG and PG Courses.
- For External Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks (75) prescribed for UG and PG Courses.
- In the aggregate (External + Internal), the passing minimum shall be 40% for UG and 50% for PG courses.

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Answer ALL questions

One question from each unit from the course syllabi

Part – A (10 x 2 Marks: 20 Marks)

Part – B (5 x 5 Marks: 25 Marks) (Internal Choice)

Part – C (3 x 10 Marks: 30 Marks) (Internal Choice)

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the B.Sc (DS) degree only if he/she passes all the (including arrears) courses with in a period of FIVE years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate

Range of Marks	Grade Points	Letter Grade	Description
90-100	9.0 - 10.00	O	Outstanding
80-89	8.0 - 8.9	D+	Excellent
75-79	7.5 - 7.9	D	Distinction
70-74	7.0 - 7.4	A+	Very Good
60-69	6.0 - 6.9	A	Good
50-59	5.0 - 5.9	B	Average
00-49	0.00	U	Reappear
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average [GPA] = $\sum C_i G_i / \sum C_i$

Grade Point Average = Sum of the multiplication of Grade points by the credit of the courses

Sum of the credit of the courses in the semester

= Sum of [Credit earned x Grade Points]

Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n \sum_i C_{ni} G_{ni} / \sum_n \sum_i C_{ni}$

= sum of the multiplication of grade points by the credits of the entire programme

CGPA	Grade	Classification of Final Result
9.5 – 10.00	O+	First class – Exemplary*
9.0 and above but below 9.5	O	
8.5 and above but below 9.0	D++	First class with Distinction*
8.0 and above but below 8.5	D+	
7.5 and above but below 8.0	D	
7.0 and above but below 7.5	A++	First Class
6.5 and above but below 7.0	A+	
6.0 and above but below 6.5	A	
5.5 and above but below 6.0	B+	Second Class
5.0 and above but below 5.5	B	
0.0 and above but below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Amount in (Rs)		
	First Year	Second Year	Third Year
Admission Processing Fees	300	300	300
Course Fees	9000	9000	9000
Total Fees	9300	9300	9300

The above mentioned fees structure is exclusive of examination fees.

(g) Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well-equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme. Model Practical Questions is available to the learners in the university website.

g.2 Library Resources

The Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Cyber Security programmes. The Central library of University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

(h) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development(Single Time Investment)	20,00,000/-
Programme delivery(Per Year)	24,00,000/-

Programme maintenance	5,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(a) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university maydetermine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delightthrough Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast directionand skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

A Bachelor of Cyber Security program typically aims to provide students with the knowledge and skills necessary to work in the field of Cyber Security. The expected program outcomes may include:

- Knowledge of Cyber Security: Graduates should have a deep understanding of the concepts, principles, and methods of Cyber Security. This includes knowledge of statistical techniques, machine learning algorithms, and programming languages commonly used in Cyber Security.
- Ability to Collect and Analyze Data: Graduates should be able to collect, clean, and transform data, and apply appropriate statistical and machine learning techniques to extract insights from the data.
- Programming Skills: Graduates should have proficiency in programming

languages such as Python, R, SQL, and other relevant tools and technologies used in Cyber Security.

- Data Visualization and Communication Skills: Graduates should be able to communicate insights and findings from data analysis effectively through visualizations, reports, and presentations.
- Domain Expertise: Graduates should have knowledge in a specific domain such as business, healthcare, or finance, and be able to apply Cyber Security techniques to solve real-world problems in that domain.
- Critical Thinking and Problem Solving Skills: Graduates should be able to analyze complex problems, identify relevant data, and use data-driven methods to solve problems.
- Ethical and Legal Considerations: Graduates should have an understanding of the ethical and legal implications of Cyber Security, including privacy, security, and bias issues.
- Lifelong Learning: Graduates should have the ability and motivation to continue learning new Cyber Security techniques and tools throughout their careers.

Annexure

Course Wise detailed Curriculum / Syllabus

Course Name: Principals of Cyber Security
Course Code: MSCCS-101

Block	Detail syllabus
Block-1	**Introduction to Cyber Security**
	• Introduction, Computer Security, Threats, Harm, Vulnerabilities, Controls, Authentication, Access Control and Cryptography. • Web attack: Browser Attacks, Web Attacks Targeting Users, Obtaining User or Website Data, Email Attacks. • Network Vulnerabilities: Overview of vulnerability scanning, Open Port / Service Identification, Banner /Version Check, Traffic Probe, Vulnerability Probe, Vulnerability Examples, OpenVAS, Metasploit. • Networks Vulnerability Scanning (Netcat, Socat), Network Sniffers and Injection tools.
Block-2	**Network Defense tools**
	• Firewalls and Packet Filters: Firewall Basics, Packet Filter Vs Firewall, How a Firewall Protects a Network, Packet Characteristic to Filter, Stateless Vs Stateful Firewalls, Network Address Translation (NAT) and Port Forwarding. • VPN: the basic of Virtual Private Networks. • Firewall: Introduction, Linux Firewall, Windows Firewall. • Snort: Introduction Detection System.
Block-3	**Web Application Tools**
	• Scanning for web vulnerabilities tools: Nikto, W3af, • HTTP utilities - Curl, OpenSSL and Stunnel. • Application Inspection tools – Zed Attack Proxy, Sqlmap, DVWA, Webgoat. • Password Cracking and Brute-Force Tools: John the Ripper, L0htcrack, Pwdump, HTC-Hydra.
Block-4	**Introduction to Cyber Crime, law and Investigation**

	• Cyber Crimes, Types of Cybercrime, Hacking, Attack vectors, Cyberspace and Criminal Behavior, Clarification of Terms, Traditional Problems Associated with Computer Crime, Introduction to Incident Response, Digital Forensics, Computer Language, Network Language, Realms of the Cyber world. • Internet crime and Act: A Brief History of the Internet, Recognizing and Defining Computer Crime, Contemporary Crimes, Computers as Targets, Contaminants and Destruction of Data, Indian IT ACT
	2000. • Firewalls and Packet Filters, password Cracking, Keyloggers and Spyware, Virus and Warms, Trojan and backdoors, Steganography, DOS and DDOS attack, SQL injection, Buffer Overflow, Attack on wireless Networks.

Course Name: Fundamental of Computer Networking
Course Code: MSCCS-102

Block	Detail syllabus
Block-1	**Introduction of Computer Network**
	• Introduction to Networking, Components of Networking, Different Computing Models of Network, Centralized, Distributed, Collaborative, Networking Configuration Client/Server Based, Peer To Peer Networking, Local and Wide Area Network. • Intranets and Internets Network Services, FileServices, File Transfer Services, Printing Services, Application Services. • Fundamentals of communication theory, Analog and Digital Signal, Periodic aperiodic signal, Peak Amplitude, bit rate, frequency, Decibel, bit Interval, Transmission Impairment, Attenuation, Distortion, Noise, thermal, Induced, cross talk, Impulse Noise • Throughput, Propagation Speed, waveforms, bandwidth.
Block-2	**Networking Standards**
	• Introduction to Standards, Standard Organization and the OSI rules and the Communication Process. • The OSI reference Model, How Peer OSI Layer Communicates, Protocol Stacks. • Conceptualizing the layers of the OSI Model, OSI physical layer, OSI Data Link Layer, Concepts of OSI Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer. • IEEE802 family standard.
Block-3	**Transmission Media & TCP/IP**

	• Introduction to Transmission Media, Characteristics, Cost, Installation, Requirements, Bandwidth Band Usage, Attenuation and Electromagnetic Interference. • Cable Media Coaxial Cable, Twisted-Pair Cable, Fiber Optic Cable, Summary of Cable. • Wireless Media, Reason for wireless Network, Wireless Communication with LANs, Comparison of Different Wireless Media, Time Division Multiplexing (TDM), Time Division Multiple Access (TDMA). • TCP/IP: TCP/IP and internetworking, related protocols, ports and sockets, The IP address structure, IP datagram.
Block-4	**Connectivity Devices, Network Topologies and architectures**
	• Connectivity Devices: Introduction to Modems, Asynchronous Transmission, Synchronous Transmission, Network Adapter card, Repeaters Hubs Passive, Active, Intelligent, Bridges, Routers, Brouters, Gateways, Routing Algorithms, Distance Vector Routing, Link State Routing. • Network architectures: Introduction to Access Methods, Contention Polling, Token Passing, Comparing Contention and Token Passing, Demand Priority. • Topologies: Network Topologies, Bus Topologies, Ring Topologies and Star Topologies, Mesh Topology. • Switching & Routing In Networks: Message Switching, Packet switching when and when not to use packet switching, packet routing, and packet switching support to circuit switching.

Course Name: Cyber Security Techniques
Course Code: MSCCS-103

Block	Detail syllabus
Block-1	• Introduction to cyber security • Cybercrime and different modes of attacks • Intrusion detection system
Block-2	• It assets and wireless security • Cyber security assurance framework • Desktop security and malware
Block-3	• E-commerce and web-application security • Social engineering • Cyber security risk management
Block-4	• Computer forensics fundamentals and collection of digital evidence • Cyber security initiatives in India • Cyber security strategies and policies

Course Name: Computational Number Theory and Cryptography
Course Code: MSCCS-104

Block	Detail syllabus
Block-1	• Computational Complexity • GCD Computation • Finite Groups
Block-2	• Modular Arithmetic • Key Exchange • Public Key Cryptosystem
Block-3	• Factorization • Primarily Testing • Elliptic Curve Cryptosystem
Block-4	• Hash Function Digital Signatures • Stream Ciphers

Course Name: Web Development Tools
Course Code: MSCCS-201

Unit	Detail syllabus
Unit-1	**.NET architecture and Programming**
	• Components of the .NET Architecture MS .NET Runtime, Managed / Unmanaged Code, Intermediate Language, Common Type System, MS .NET Base Class Library (BCL), Assemblies, • Metadata, and Modules, Just In Time Compilation, Garbage Collection. • Introduction to C# .Net language, C# Program Console Application Development, Compiling and Executing, Defining a Class, Declaring the Main () Method, Organizing Libraries with Namespaces, Using the using Keyword, Adding Comments. • C# Data Types, Value Types-Primitive Data Types, Reference Types.
Unit-2	**C# Controls structure , Properties, Delegates & Exception Handling**
	• C# Control Structures -Using the if Statement, Using the if- else Statement, Using the switch case Statement, C# looping controls and jumping statements: Using the for Statement, Using the while Statement, Using the do while Statement, Using the break Statement, Using the continue Statement, Using the return Statement, Using the goto Statement. • C# Properties – Using Properties- Get Accessor, Set Accessor. • Delegates in C# - Single Cast, Multicast Delegates. • Exception Handling in C# -Using the try Block, Using the catch Block, Using the finally Block, Using the throw Statement.
Unit-3	**Inheritance, interface and generics**

	• Inheritance, in C#. • Interfaces in C#. • Structures in C# • Operator Overloading in C#, Using Generics in C#.
Unit-4	**Threading , file handling, C# controls**
	• Multithreading -Getting started with threads, managing thread lifetimes, destroying threads, scheduling threads, communicating data to a thread. • File I/O with streams - Stream classes file stream, streamreader and streamwriter, string readers and writers file system classes directory and directoryinfo, file and fileinfo, parsing paths. • C# Windows form and Controls -General Controls with important properties, events and Methods (Label, text box, button, listbox, combo box, check box, radio button picture box, date time pickerprogress bar, timer. Status strip, user defined controls). • Containers (Groupbox, panel, split container, tab control, tab layout
	panel, flow layout panel),Menu and Tools Bars, Menu strip, context menu strip, status strip, tool strip, Dialogs (Color dialog, folderbrowser dialog, font dialog, open file dialog, save file dialog).
Reference Books	
(1) Beginning C#, Wrox Publication. (2) Professional C#, Wrox Publication.	

Course Name: Cloud Infrastructure and Services
Course Code: MSCCS-202

Block	Detail syllabus
Block-1	**Introduction to cloud computing**
	• Introduction, Cloud and other similar configuration. • Cloud v/s Other Architecture: cloud computing versus peer to peer architecture, cloud computing versus client server architecture, cloud computing versus grid computing, server virtualization versus cloud computing. • Cloud computing in a nutshell, system models for distributed and cloud computing, roots of cloud computing, layers and types of clouds, desired features of a cloud, basic principles of cloud computing, challenges and risks, service models. • Cloud types and models – private cloud, components of private cloud, implementation phase of a private cloud, pro and cons of private cloud, public cloud and hybrid cloud.
Block-2	**Cloud computing services**

	• Infrastructure as a Service (IaaS), Platform as a Service (PaaS) • Software as a Service (SaaS), Database as a Service (DaaS). • Security as a Service. • Specialized cloud services.
Block-3	**Application architecture for cloud and Cloud deployment techniques**
	• Introductions, Cloud application requirement, architecture for traditional versus cloud application, assumption for traditional and cloud applications. • Recommendations & fundamental requirement for cloud application architecture, SOA for cloud applications, parallelization within cloud applications. • Factors for a successful cloud implementation, cloud network topologies, automation for cloud deployment, self-service feature in a cloud deployment, federated cloud deployment, cloud performance- monitoring and tuning, impact of memory on cloud performance. • Improving cloud database performance and cloud services brokerage.
Block-4	**Risks ,Security in cloud, consequences and costs of cloud computing** • Risk in cloud computing, risk assessment and management, risk of vendor lock-in, loss of control, risk of resource scarcity / poor provisioning, risk in multi-tenant+ environment, risk of
	failure risk of malware and internet attacks, risk of managementof cloud resource risk of network outages, risk of physical infrastructure legal risk, risk with software and application licensing. • Data security in the cloud - data redundancy, data recovery, data backup data replication, data residency or location, data reliability, data fragmentation, data integration, data transformation, data migration, data confidentiality & encryption, key protection, data availability, data integrity, cloud data management interface, cloud storage gateways and its advantages, cloud firewall, virtual firewall. • Application security in the cloud – Cloud application software lifecycle, application security in an IaaS, PaaS and SaaS environment and its protection. • TCO for cloud computing, direct and indirect cloud cost, cost allocations in a cloud, chargeback models for allocation of direct and indirect cost, chargeback methodology, billable items, maintaining strategic flexibility in a cloud.

Course Name: Application and Network SecurityCourse Code: MSCCS-203

Block	Detail syllabus
Block-1	• Desktop Security • Programming Bugs and Malicious Codes • Database Security • Operating System Security
Block-2	• Disaster Recovery • Digital Signature • Ethical Hacking, Penetration Testing • Computer Forensics
Block-3	• ISO 27001, cyber law and it act-2000 • international standards for cyber sec • security audit and investigation • cyber security solutions
Block-4	• E-mail secirity • web application security • web browser security • e-commerce security
Block-5	• Wireless network security • security issues in wireless networks • securing a wireless network • mobile device security

Course Name: Cyber Attacks and Counter Measures: User Perspective Course Code: MSCCS-204

Block	Detail syllabus
Block-1	• Cyber attacks, types of attacks motivation • Asset, threat and risk management • Oraganization security & frameworks • Information security governance
Block-2	• Security controls • Security control design • Software development life cycle (sdlc)
Block-3	• Authentication and password security • Wireless security • Investigation and digital forensic • Introduction to cryptography

Course Name: Mobile Operating System and Security
Course Code: MSCCS-301

Block	Detail syllabus
Block-1	• Generalize Operating System • Functionality Of Generalize Operating System • Operating System Structures • Mobile Computing
Block-2	• Mobile Devices • Function Of Mobile Operating System • Mobile Operating System • Generalized Mobile Operating System Architecture and Comparison
Block-3	• Basics of Android Operating System • Internal Mechanism of Android OS • ios Operating System
Block-4	• Windows Phone • Blackberry • Symbain

Course Name: Information Security Assurance: Framework, Standards and Industry best practices
Course Code: MSCCS-302

Block	Detail syllabus
Block-1	• Information security standards • Information security regulations • Industry best practices • Industry best practices
Block-2	• Managing information security • Information security management system - iso standards • ISO/IEC 27001 and 27002 for information security management system (isms) • Information security management system (isms) auditing
Block-3	• Security audit • Information security • Disaster recovery • Business continuity planning and management

Course Name: Digital / Computer Forensics
Course Code: MSCCS-303

Block	Detail syllabus
Block-1	• Introduction to digital forensic • Computer forensics investigation process • Digital evidence and first responder procedure • Understanding storage media and file system
Block-2	• Windows forensics • Logs & event analysis and password cracking • Network forensics • Wireless attacks
Block-3	• Investigating web attacks • Investigating email attacks • Mobile device forensics • Investigative reports, expert witness and cyber regulations

Course Name: Security Analysis and ReportingCourse Code: MSCCS-304

Block	Detail syllabus
Block-1	• Packet Analysis & Risk Management • Wireless Network Analysis • Intrusion Detection & Prevention System • Cyber Crime. IT Assets and Wireless Security
Block-2	• Malware Analysis • Email Security Analysis • Vulnerability Assessment and Penetration Testing (VPAT) • Social Engineering
Block-3	• Cyber Security Incident Management • Handling an Incident • Coordination and Information Sharing • Containment, Eradication and Recovery

Course Name: Hacking TechniquesCourse Code: MSCCS-401

Block	Detail syllabus
Block-1	• Overview of Hacking • Footprinting & Reconnaissance • System Hacking • Sniffers
Block-2	• Trojans, Backdoors, Viruses and Worms • Session Hijacking • Social Engineering • Denial of Service

Block-3	• Web Application Hacking • SQL Injection • Hacking Wireless Networks • IDS, Firewalls and Honeypots

Course Name: Cyberspace and Its Governance

Course Code: MSCCS-402

Block	Detail syllabus
Block-1	• Cyberspace – An Overview of the Concept • Inherent Characteristics of Cyberspace • Forms of Cyberspace Regulations • Cyberspace Regulatory Theory of Lawrence Lessig
Block-2	• Outline of Legislative Framework for Cyber Law • History and Emergence of Cyber Law • Outreach and Impact of Cyber Law • Major Amendments in Various Statutes
Block-3	• Establishment of Personal Jurisdiction in Cyberspace • Overview of Tests and Interactivity • Jurisdictional Approaches of Online Contract • Basis of Jurisdiction and Indian Approach
Block-4	• Indian Constitution and Freedom of Expression • Examination of Rights Under Indian Laws • The Legislative Responses in Cyberspace • National Sovereignty And Freedom Of Expression

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

MASTER OF LIBRARY & INFORMATION SCIENCE

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: Master of Library and Information Science

Introduction :

The Master of Library and Information Science (MLIS) is a professional degree program that prepares students for careers in library and information science. The program focuses on the theory and practice of managing and organizing information resources, including books, electronic databases, and digital content.

The MLIS program covers a wide range of topics, including information organization, cataloging, reference services, collection development, and information technology. Students in the program learn how to manage and use information resources effectively and efficiently, and how to provide access to information to a variety of users, including researchers, students, and the general public.

The MLIS program is designed to prepare students for a wide range of careers in library and information science, including positions in academic libraries, public libraries, special libraries, and information centers. Graduates of the program are well-equipped to work in a range of roles, including librarians, information specialists, archivists, and digital content managers.

The MLIS program can be completed through a variety of formats, including traditional on-campus programs, hybrid programs, and fully online programs. The program typically takes 1-2 years to complete, depending on the format and course load.

(i) (a) Programme's Mission: The mission of the Master of Library and Information Science (MLIS) program is to prepare students for professional careers in library and information science. The program is designed to provide students with the knowledge, skills, and values needed to manage and organize information resources effectively and efficiently, and to provide access to information to a variety of users.

The MLIS program is committed to promoting the principles of intellectual freedom, equitable access to information, and lifelong learning. The program strives to prepare students to be leaders in the field of library and information science and to make a positive impact on the communities they serve.

The program's mission also includes a focus on promoting diversity and inclusion in the field of library and information science. The program aims to prepare students to work with diverse populations and to develop strategies to promote equitable access to information for all.

Overall, the MLIS program's mission is to prepare students for a rewarding career in library and information science and to make a positive impact on the communities they serve through the provision of high-quality information services.

(b) Objectives:

The objectives of the Master of Library and Information Science (MLIS) program are as follows:

- Develop a deep understanding of the principles and practices of library and information science: The MLIS program aims to provide students with a comprehensive understanding of the core principles and practices of library and information science, including information organization, reference services, collection development, and information technology.
- Acquire advanced skills in information management: The program aims to develop students' skills in managing and organizing information resources, including books, electronic databases, and digital content. Students will learn to use a range of tools and technologies to manage and provide access to information resources.
- Develop critical thinking and problem-solving skills: The MLIS program aims to develop students' critical thinking and problem-solving skills, particularly in relation to complex issues in the field of library and information science. Students will learn to analyze and evaluate information resources and to develop strategies to meet the information needs of a variety of users.
- Promote diversity and inclusion in library and information services: The program aims to prepare students to work with diverse populations and to develop strategies to promote equitable access to information for all. Students will learn to develop services and programs that meet the needs of diverse communities.

Foster a commitment to lifelong learning and professional development: The MLIS program aims to develop students' commitment to lifelong learning and professional development. Students will learn to stay up-to-date with developments in the field of library and information science and to participate in professional development activities throughout their careers.

Overall, the objectives of the MLIS program are to prepare students for a wide range of careers in library and information science and to develop their skills, knowledge, and values to make a positive impact on the communities they serve.

(ii) Relevance of the Programme with HEI's Mission and Goals: The Master of Library and Information Science (MLIS) program is highly relevant to the mission and goals of higher education institutions (HEIs) that offer it. Here are some reasons why:

- Support for lifelong learning: Many HEIs have a mission to support lifelong learning, and the MLIS program aligns with this goal by providing students with the knowledge and skills needed to work in a wide range of library and information science settings. Graduates of the program are well-equipped to continue their professional development throughout their careers.
- Promotion of diversity and inclusion: HEIs often have a commitment to promoting diversity and inclusion in their communities, and the MLIS program can help achieve this goal by preparing students to work with diverse populations and to develop services and programs that meet the needs of all users.
- Focus on research and scholarship: Many HEIs have a strong focus on research and scholarship, and the MLIS program prepares students to engage in scholarly research in the field of library and information science. Graduates of the program are well-prepared to contribute to the research and scholarship in the field.
- Service to the community: HEIs often have a mission to serve their communities, and the MLIS program aligns with this goal by preparing students to work in a wide range of library and information science settings, including public libraries, academic libraries, and special libraries. Graduates of the program are well-equipped to make a positive impact on the communities they serve.

Overall, the MLIS program is highly relevant to the mission and goals of HEIs, and it can help these institutions achieve their goals of supporting lifelong learning, promoting diversity and inclusion, focusing on research and scholarship, and serving their communities.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for the Master of Library and Information Science (MLIS) program typically includes individuals who are interested in pursuing careers in library and information science. This may include individuals who have completed undergraduate degrees in a

variety of fields, such as English, history, education, or computer science, and who are interested in working in libraries, archives, museums, or other information-related organizations.

The MLIS program is also suitable for current library and information professionals who are seeking to advance their knowledge and skills and to stay up-to-date with the latest developments in the field. In addition, the program may be of interest to individuals who are interested in pursuing academic careers in library and information science, such as teaching or research.

Overall, the MLIS program is designed for individuals who are passionate about information and its organization, management, and dissemination, and who are committed to providing equitable access to information for all. The program welcomes learners from a diverse range of backgrounds and experiences, and it encourages students to bring their unique perspectives and interests to the field of library and information science.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The Master of Library and Information Science (MLIS) program is highly appropriate for delivery in the Open and Distance Learning (ODL) mode, as it is designed to help students acquire specific skills and competencies that are essential for success in library and information science careers.

Here are some reasons why the MLIS program is appropriate for delivery in the ODL mode:

Flexibility: The ODL mode provides students with the flexibility to learn at their own pace, on their own schedule. This is particularly important for individuals who are working full-time or who have other commitments that make it difficult to attend classes on a traditional campus.

Access to resources: The MLIS program can be delivered in the ODL mode with the help of online resources such as digital libraries, databases, and other web-based resources. This ensures that students have access to the same resources as those attending classes on a traditional campus.

Interactivity: The ODL mode can be designed to encourage interactivity among students and between students and instructors. Discussion forums, online chat sessions, and other web-based tools can be used to facilitate interaction and collaboration, ensuring that students receive the same level of support and engagement as they would in a traditional classroom setting.

Real-world experience: The MLIS program can be designed to incorporate real-world experience, such as internships or fieldwork, which can be completed remotely. This ensures that students gain the practical skills and experience necessary to succeed in library and information science careers.

Overall, the MLIS program is highly appropriate for delivery in the ODL mode, as it can provide students with the flexibility, access to resources, interactivity, and real-world experience needed to acquire specific skills and competencies in the field of library and information science.

(v) Instructional Design: The M.LIS. programme is a One-year degree programme of 45 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 1 year duration with annual examinations. The maximum period allowed is 2 years (double the duration). The Programme structure is as below.

1	Information Systems and Programmes	4	100
2	Advanced Knowledge Organisation: Classification	3	100
3	Advanced Knowledge Organisation: Cataloguing	3	100
4	Information and Communication Technology Applications in LIS (Theory)	4	100
5	Research Methodology	4	100
6	Marketing of Library and Information Products and Services	4	100
Total		**22**	

Second Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Information and Communication Technology Applications in LIS (Practical)	3	100
2	Information Storage and Retrieval System	4	100
3	Information Literacy Applications in LIS	4	100
4	Public Library and Information System	4	100
5	Academic Library and Information System	4	100
6	Agricultural Sciences Library and Information System	4	100
Total		**23**	

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the MLIS. programme is a 45-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree from a recognised university.

Fee Structure: MLIS:

Rs. 9000/-

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment “CIA”: This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination “ESE”: This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks

90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach

course registered in that semester

- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All

students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The MLIS. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MLIS	5,00000/-	2,00000/-	7,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms are crucial to ensure the MLIS program's high quality and to ensure that it meets the expected program outcomes. Here are some possible quality assurance mechanisms that can be implemented in an MLIS program delivered in the Open and Distance Learning (ODL) mode:

- Accreditation: The MLIS program can be accredited by recognized accrediting bodies, such as the American Library Association (ALA) or the Canadian Library Association (CLA), to ensure that it meets high standards of quality and rigor.

- Program assessment: Regular program assessments can be conducted to ensure that the MLIS program is meeting its stated objectives and that it is providing students with the necessary skills and competencies.
- Faculty qualifications: The MLIS program can ensure that its faculty members have the necessary qualifications, expertise, and experience to teach courses in library and information science.
- Student feedback: The MLIS program can gather regular feedback from students to ensure that they are satisfied with the quality of instruction and the program's overall effectiveness in meeting their needs.
- External review: External reviewers can be invited to assess the program periodically to ensure that it is meeting high standards and that it is keeping up with the latest developments in the field of library and information science.

Expected program outcomes for an MLIS program may include:

- Acquisition of knowledge and skills related to library and information science, including information organization and management, reference and research services, digital libraries, and other related areas.
- Development of critical thinking and problem-solving skills, as well as an ability to adapt to changing technologies and user needs.
- Understanding of ethical issues related to library and information science, including privacy, intellectual property, and access to information.
- Development of communication and collaboration skills, including an ability to work effectively with diverse populations and to communicate clearly and persuasively.
- Preparation for a variety of careers in library and information science, including positions in academic, public, school, and special libraries, archives, museums, and other information-related organizations.

By implementing quality assurance mechanisms and ensuring that the MLIS program meets its expected program outcomes, graduates of the program can be confident in their abilities to succeed in library and information science careers and to make meaningful contributions to the field.

First Semester

First Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Information Systems and Programmes	4	100
2	Advanced Knowledge Organisation: Classification	3	100
3	Advanced Knowledge Organisation: Cataloguing	3	100
4	Information and Communication Technology Applications in LIS (Theory)	4	100
5	Research Methodology	4	100
6	Marketing of Library and Information Products and Services	4	100
Total		**22**	

Subject Name: INFORMATION SYSTEMS AND PROGRAMMES

UNIT – I: Information Systems and Organisations

Information Organisation as a System: Basic Concepts, Types and Characteristics of an InformationSystem.

Kinds of Information System: Libraries, Documentation Centres and Information Centres, Data Centres, Information Analysis Centres, Referral Centres and Clearing Houses, Archives and Translation Pools: Functions and Services.

UNIT – II: National Information System and Policy

Planning and Design of National Information System, National Information Policy.

National Information Systems: NISCAIR, DESIDOC, NASSDOC, SENDOC, NDCMC, ENVIS, etc.

UNIT – III: Global Information Systems

Programmes and Activities of UNESCO, UNISIST and

IFLA, etc.INIS, AGRIS, INSPEC and MEDLARS, etc.

UNIT – IV: Resource Sharing, Library Networks and Library Consortia

Programmes and Activities of INFLIBNET and DELNET.

CSIR E-Journals Consortium, UGC-INFONET Digital Library Consortium.

UNIT – V: Information Services and Information Products

Information Services, Literature Search, Documentation Services, Translation Services, CAS, SDI, Document Delivery Service, Alert Services and INTERNET Services, Information Products: Newsletter, In-house Journal, State of the Art Report, Trend Report, etc.

Recommended Books

1. **ATHERTON (Pauline)**. Handbook for information system and services. 1997. UNESCO, Paris.
2. **BAMAN (P)**. Studies on information systems, services and programs in India and abroad. 1993.Ajanta, Delhi.
3. **BARUA (B P)**. National policy on library and information systems and services for India:perspectives and projections. 1992. Popular Prakashan, New Delhi.
4. **BURCH (J G)** and **GRUDNITSKI (G)**. Information systems: theory and practice.1986.

Wiley,Singapore.

5. **KENT (A)**. Resource sharing in libraries: why, how, when next action step. 1974.MarshalDekker, New York.
6. **KOCHTANEK (T R)** and **MATTHEWS (J R)**. Library information systems: from library automationto distributed information access solutions. 2002. Libraries Unlimited, West Westport.
7. **NEELAMEGHAN (A)** and **PRASAD (K N), Eds**. Information systems, networks and services inIndia. 2 vols. 1998. Ranganathan Centre for Information Studies, Chennai.
8. **ROWLEY (J)**. The basics of information system. Ed 2. 1996. Library Association, London.
9. **VICKERY (B C)**. Information systems. 1973. Butterworths, Washington.

Subject Name: ADVANCED KNOWLEDGE ORGANISATION: CLASSIFICATION

UNIT- I: Fundamentals of UDC

Introduction to *Universal Decimal Classification* (Latest Edition): Structure, Principles and Organisation, Classification of Simple and Compound Subject Documents.

UNIT- II: Advance Applications of UDC

Introduction to Common Auxiliaries and Special Auxiliaries, Application of Common Auxiliaries, Special Auxiliaries, Devices, etc.

Classification of Complex Subject Documents.

Recommended Books

1. **FOSKET (A C)**. Universal Decimal Classification. 1973. Clive Bingley, London.
2. **McLLWAINE (I C)**. The Universal Decimal Classification: a guide to its use. 2007. UDC Consortium, The Hague, Netherlands.
3. **UNIVERSAL DECIMAL CLASSIFICATION**. (Latest Edition). British standards institution, London.

Subject Name: ADVANCED KNOWLEDGE ORGANISATION: CATALOGUING

Cataloguing of Non Book Material and Electronic Resources According to AACR (Latest Edition)

UNIT – I: Non-Book Materials

Complexities of Periodicals, Manuscripts, Cartographic Materials, Microforms, Graphic Materials.

UNIT – II: Electronic Resources

Sound Recordings, Motion Pictures, Video Recordings, Computer Files, Web Resources.

Recommended Books

1. **AMERICAN LIBRARY ASSOCIATION**. Anglo-American Cataloguing Rules. (Latest Edition).Library Association, London.
2. **LIBRARY OF CONGRESS SUBJECT HEADINGS** (Latest Edition). Library of Congress, Washington.
3. **WILKIE (Chris**). Managing film and video collections. 1999. ASLIB, London.

Subject Name: INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATIONS IN LIS
(Theory)

UNIT – I: Web Technologies in Libraries

Implication of WWW on Library Websites, Web OPACs, Web 2.0 and Web 3.0: Features and Functions, Web Directories, Subject Gateways, Library Portals, etc.

Weblogs (blogs), Podcasts, RSS Feeds, Instant Messaging, Wikis, Flickr, etc.

UNIT - II: Integrated Library Automation and Networking Software

Open Source Library Software and Applications, Web based Library Management Software, Library Software Securities Parameters, Virtual Library.

UNIT – III: Multimedia and Institutional Repositories

Multimedia Applications in Libraries, Image Creation using Photoshop and CorelDraw,

etc. Institutional Repositories: Greenstone Digital Library, Dspace, and E-prints, etc.

UNIT – IV: Introduction of Networks

Types of Networks: Network Components, Categories, LAN Standards and Inter-Network, Wireless Networking and Emerging Networking Technologies, Data Networks: Integrated Services Digital Network (ISDN), Digital Subscribers Line(DSL), Asynchronous Transfer Mode (ATM), etc.

Network Software: Network Operating Systems, Domain Name System and Network ManagementSystems, etc.
OSI Network Model and TCP/IP Reference Model.

UNIT – V: Emerging Technologies in Libraries

RSS Feeds Technology and Libraries, Library Security Technology: RFID, Barcode, Smart Card and CCTV, etc.
Video Conferencing and Audio Conferencing, Functional Requirements for Bibliographic Records (FRBR), Digital Content Management System, Federated Search and Multimedia Databases Search, Protocols: Z39.50 Standard for Retrieval and OAI-PMH, Artificial Intelligence and Libraries,Expert Systems in Libraries.

Recommended Books

1. **BRADLEY (Phil)**. How to use web 2.0 in your library. 2007. Facet Publishing, London.
2. **CLYDE (Laurel)**. Weblogs and libraries. 2004. Chandos Publishing, Oxford.
3. **EVANS (Woody)**. Building library 3.0: issues in creating a culture of participation. 2009. ChandosPublishing, Oxford.
4. **GRIFFITHS (Peter)**. Managing your internet and intranet services: the information professional's guide to strategy. Ed.2. 2004. Facet Publishing, London.
5. **JANCZEWSKI (Lech)**. Internet and intranet security management: risks and solutions**.** 2000.Idea, Hershey**.**
6. **KROSKI (Ellyssa)**. Web 2.0 for librarians and information professionals. 2008.Neal SchumanPublishers, New York.
7. **LIU (Jia)**. Metadata and its applications in the digital library: approaches and practices. 2007.Libraries Unlimited, Westport.

8. **PRIMARY RESEARCH GROUP STAFF**. Academic library websites benchmarks. 2008. PrimaryResearch Group, New York.
9. **VINCE (J)**. Introduction to virtual reality. 2004. Springer, London.
10. **WISE (Richard)**. Multimedia: a critical introduction. 2000. Routledge, London.

Subject Name: RESEARCH METHODOLOGY

UNIT – I: Introduction to Research

Research: Concept, Need and Purpose, Research Problem and Research Design, Literature Review, Hypothesis: Definition, Types, Sources and Functions.

UNIT –II: Types of Research Methods

Historical, Survey and Experimental, Case Study, Scientific Research and Statistical Research, etc.

UNIT – III: Research Techniques

Research Techniques and Tools: Questionnaire, Interview, Observation, Schedule andCheck-list, etc.

Library Records and Reports.

UNIT – IV: Statistics and its Applications

Descriptive Statistics – Measures of Central Tendency: & Dispersion, Correlations and linear regression, Chi-Square test, t-test, z-test, f-test. Presentation of Data: Tabular, Graphic, Bar Diagram and Pie Chart, etc.

Report Writing, Statistical Packages – MS Excel, SPSS, and Web-based Statistical Analysis Tools, etc.

UNIT – V: Metric Studies and Style Manuals

Scientometrics, Infometrics and Webometrics, Manual Structure, Style, Contents- ISI, MLA, APA, CHICAGO, etc.

Recommended Books

1. **ALVESSON (M)** and **SKOLDBERG (K)**. Reflexive methodology: new vistasin qualitative research.Ed. 2 Rev. 2009. Sage Publication, London.
2. **BUSHA (C H)**. Research methods in librarianship. 1990. Academic Press, New York.
3. **GOODE (W J)** and **HATT (P K)**. Methods in social research. 1982.McGraw-Hill, New York.
4. **GREENFIELD (T)**. Research methods: guidance for postgraduates. 1996.Hodder Arnold, London.
5. **KRISHAN KUMAR**. Research methods in library and information science. Rev. Ed. 1999. Har-Anand Publications, New Delhi.
6. **LANCASTER (F W)** and **POWELL (R R**). Basic research methods for librarians. 1985. Ablexpublishing, New Jersey.
7. **POWELL (R R)** and **SILIPIGNI (C L)**. Basic research methods for librarians. Ed. 4. 2004. LibrariesUnlimited, Westport.
8. **SINGH (S P)**. Research methods in social sciences: a manual for designing questionnaires. 2002. Kanishka, New Delhi.
9. **SLATER (M), Ed**. Research methods in library and information studies.1990. Library AssociationPublishing, London.

10. **YOUNG (P V)**. Scientific social survey and research. Rev. Ed. 4. 1984.Prentice Hall, New Delhi.

Subject Name: MARKETING OF LIBRARY AND INFORMATION PRODUCTSAND SERVICES

UNIT – I: Fundamental Concepts

Needs, Objectives and Philosophy, Marketing Environment: Producer, Consumer – Buyer Behaviour, Marketing Information System, Market Segmentation, Marketing Mix.

UNIT – II: Strategies and Techniques

Strategic Planning, Marketing Research, Marketing Process.

UNIT – III: Promotion of LIS Products and Services

LIS Products and Services as a Marketable Commodity. Pricing, Distribution Channels and Communication Strategies, Advertising, Sales Promotion, Public Relations, E-Marketing.

UNIT –IV: Management Consultancy

Evolution, Need and Objectives, Voluntary versus Authenticated Consultancy, Impact of Management Consultancy on Librarianship, Role of Library Associations and LIS Schools.

UNIT – V: Information Analysis, Consolidation and Re-Packaging

Information Analysis and Consolidation: Concept, Need and Purpose, Packaging and Re-Packaging: Concept, Need, Purpose and Criteria, Information Consolidation Products: Concept, Types, Design and Development.

Recommended Books

1. **BAKEWELL (K G)**. Managing user-centred libraries and information services. Ed. 2. 1997. Maxwell, London.
2. **BUTCHER (Helen).**Meeting manager's information needs.1998. ASLIB, London.
3. **CARPENTER (J)** and **DAVIES (R).** Quantification of the overseas consulting market for professional consultancy services in librarianship and information science and information management. 1992. Research and Development, British Library, London.
4. **COOTE (Helen)** and **BATCHELOR (Bridget)**. How to market your library services effectively. Ed. 2. 1997. Aslib, London.
5. **GUPTA (D K), et al**. marketing library and information services: international perspectives. 2006.
   K.G. Saur, Munich.
6. **HELINSKY (Z)**. A short-cut to marketing the library. 2008. Chandos Publishing, Oxford.
7. **JAIN (Abhinandan K), et al**. Marketing information products and services: a primer for librariesand information professionals. 1999. Tata McGraw-Hill, New Delhi.
8. **KOTLER (Philip)**. Marketing management. Ed.12. 2002. Prentice Hall, Delhi.
9. **KOTLER (Philip)** and **ARMSTRONG (Gary)**. Principle of marketing. Ed. 7. 1996.Prentice- Hall ofIndia, New Delhi.
10. **ROWLEY (Jenifer)**. Information marketing. 2001. Ashgate, London.

Second Semester

Second Semester

S. No.	Name of Subject	Credits	Total Marks
1	Information and Communication Technology Applications in LIS (Practical)	3	100
2	Information Storage and Retrieval System	4	100
3	Information Literacy Applications in LIS	4	100
4	Public Library and Information System	4	100
5	Academic Library and Information System	4	100
6	Agricultural Sciences Library and Information System	4	100
Total		**23**	

Subject Name: INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATIONS in LIS
(Practical)

UNIT – I: Website Designing and Navigational Tools

Designing Static and Dynamic Library Websites, Designing Mobile Websites, Developing Web Directories, Subject Gateway and Library Portals, Designing and Developing Library Blogs, RSS Feeds, Wikis and Flickr, etc

Image Creation using Photoshop, CorelDraw, etc.

UNIT – II: Integrated Library Management Systems and Institutional Repositories

Installation and Configuration, Hands on Functional Modules of an Integrated Library Management System (Open Source), Web based Library Management Software, Installation and Configuration, Hands on Collection Building using GLI in Local and Web Library Modes and Metadata Creation, Customization of Greenstone Digital Library Software

UNIT – III: Audio and Video Conferencing

Audio Conferencing

Video Conferencing

UNIT – IV: Advanced Searching and Metadata Creation

Downloading MARC 21 Records using Z39.50 Protocol, Federated Search, Creation of Metadata

Recommended Books

1. **BATES (Chris)**. XML in theory and practice. 2003. John Wiley, Chichester.
2. **BRADLEY (Phil)**. How to use web 2.0 in your library. 2007. Facet Publishing, London.
3. **LOWERY (Joseph W)**. Dreamweaver MX bible. 2002. Wiley Publishing, Indianapolis.
4. **LYNCH (P J) and HORTON (S)**. Web style guide: basic design principles for creating web sites.Ed.3. 2009. Yale University Press, London.
5. **McCLELLAND (Deke)** . Photoshop 7 bible. 2003. Wiley Publishing, New York.
6. **SIMMONS (Curt)**. Microsoft office front page 2003 bible with CDROM. 2003.Wiley Publishing,Indianapolis.
7. **ULLMAN (Larry)**. Building a web site with ajax: visual quickpro guide. 2007.Peachpit Press,Berkeley.
8. **WITTEN (Ian H), BODDIE (Stefan)** and **THOMPSON (John)**. Greenstone digital library user's

guide. 2006. New Zealand Digital Library Project, New Zealand.

Subject Name: INFORMATION STORAGE AND RETRIEVAL SYSTEM

UNIT – I: Fundamental Concepts

Concept, Characteristics, Objectives, Types, Operations and Design, Compatibility of ISAR System, Information Retrieval Process and Search Strategy, Evaluation of ISAR System, Vocabulary Control Tools: Classification Schedules, Subject Heading Lists and Thesaurus, Need, Structure and Construction of Thesaurus, Principles and Evolution of Bibliographic Description

UNIT – II: Knowledge Management

Introduction to Indexing Systems, Introduction to Indexing in Corporate System, Introduction to Indexing in Research System

UNIT – III: Bibliographic Description

Rules for Bibliographic Description, Standards for Bibliographic Record Formats, Metadata Concept, Metadata Standards: Dublin Core, MARC 21, etc.

UNIT – IV: Search Techniques and Information Retrieval

Man and Machine Retrieval System, Search Strategies: Boolean Operations, Proximity Search, Heuristic Search, Navigational Search, etc.

Internet Searching and Meta Search Engines, Data Mining, Data Harvesting and Semantic Web, Knowledge Management Retrieval

Recommended Books

1. **CHOWDHURY (G G)**. Introduction to modern information retrieval. 1999. Library Association, London.
2. **CLEVELAND (Donald B)** and **CLEVELAND (Ana D)**. Introduction to indexing and abstracting.2001. Libraries Unlimited, Colorado.
3. **FOSKETT (A C)**. Subject approach to information. Ed.5. 1996. Library Association, London.
4. **GOSH (S N)** and **SATPATHI (J N)**. Subject indexing system: concepts, methodsand techniques.1998. IASLIC, Calcutta.
5. **KORFHAGE (R R)**. Information storage and retrieval. 1997. John Wiley, New York, USA.
6. **LANCASTER (F Wilfred**). Vocabulary control for information retrieval. Ed. 2.1985. InformationResource Press, Arlington.
7. **LANCASTER (F Wilfred)**. Indexing and abstracting in theory and practice. Ed.3. 2003. Universityof Illinois, Urbana.
8. **ROWLEY (J)**. The basics of information system. Ed. 2. 1996. Library Association, London.
9. **SOERGEL (D)**. Indexing languages and thesauri: construction and maintenance.1974. JohnWiley and Sons., New York.
10. **WALKER (G)** and **JANES (J)**. Online retrieval: a dialogue of theory and practice1993. LibrariesUnlimited, Englewood, London.

Subject Name: INFORMATION LITERACY APPLICATIONS IN LIS

UNIT – I: FUNDAMENTAL OF INFORMATION LITERACY

Concept, Need and Objectives, Areas of Information Literacy, Standards in Information Literacy,Role of Institution in Information Literacy

UNIT - II: INFORMATION LITERACY PROGRAMMES

Scope of Information Literacy Programme, National Programmes in Information Literacy, International Programmes in Information Literacy

UNIT – III: METHODOLOGY OF INFORMATION LITERACY

Information Literacy Products: Library Brochure, Database Brochure, Web-based Access Instructions, Information Bulletin, Designing of Information Literacy Programme, Implementationof Information Literacy Programmes.

UNIT- IV: APPLICATION OF INFORMATION LITERACY IN LIBRARY ANDINFORMATION CENTRES

Information Literacy for Users, Information Literacy for Professionals, Information Literacy for Research and Development.

UNIT - V: TRENDS IN INFORMATION LITERACY

Web based Information Literacy System, OPAC Information Literacy System, Life Long Learning System.

Recommended Books

1. **AMERICAN ASSOCIATION OF SCHOOL LIBRARIANS AND ASSOCIATIONSFOR EDUCATIONAL COMMUNICATIONS AND TECHNOLOGY**. Information Standards for Student Learning. (1998) American Library Association, Chicago.
2. **AMERICAN LIBRARY ASSOCIATION**. Information Literacy: a position paper on information problem solving (2000). Available at:www.ala.org/assl.positions/PS_infolit.html (accessed 21July 2003)
3. **BALDWIN (V A)**. Information Literacy in Science & Technology Disciplines. Library Conference Presentation and Speech. (2005). University of Nebraska, Lincoln. http://digitalcommons.unl.edu/library_talks/11
4. **DELCOURT (M)** and **HIGGINS (C A)**. Computer technologies in teacher education: the measurement of attitudes and self-efficacy. *Journal of Research and Development in Education.* (1993). 27; 31-7.
5. **EISENBERG (M B) et al.** Information Literacy: Essential Skills for the Information Age. 2nd ed.(2004), Libraries Unlimited, Westport.
6. **GRASSIAN (E S)**. Learning to lead and manage information literacy instruction. (2005) Neil Schuman Publishers, New York.
7. **GRASSIN (E S)** and **KAPLOWITZ (J R)**. Information Literacy Instruction: Theory and Practice.(2001). Neal Schuman, New York.
8. **SMITH (S).** Web-based Instruction. A Guide for Libraries. (2001). American Library Association,Chicago.
9. **TIGHT (M)**. Lifelong Learning: Opportunity or Compulsion? *British Journal of Education Studies*. Vol. 46; 3 September 1998; 251-263.

Subject Name: PUBLIC LIBRARY AND INFORMATION SYSTEM

UNIT – I: Public Libraries and their Development

Objectives and Functions, History and Development of Libraries with Special Reference to India, Role of Public Libraries in Society, Agencies and their Role in Promotion and Development of PublicLibraries in India

UNIT – II: Collection Development and Management

Periodicals, Conference Literature, Grey Literature and Government Publications, Non-Book Materials, Electronic Sources and Online Databases.

UNIT – III: Library Organization and Administration

Organizational Structure, Staff Manual, Library Surveys, Statistics and Standards, etc.

UNIT – IV: Information Services

CAS, SDI, Abstracting and Indexing Services, Library Bulletin, Newspaper Clipping Services, Computerized Services,

Resource Sharing and Networking

UNIT – V: Financial and Human Resource Management

Determination of Finance, Sources of Finance, Types of Budget, Nature, Size, Selection, Recruitment, Qualification and Training, Responsibilities and Duties, Competency Development.

Recommended Books

1. **BARUA (B P)**. National policy on library and information systems and services for India:perspectives and projections. 1992. Popular, Bombay.
2. **BATT (Chris)**. Information technology in public libraries. 1998. London LibraryAssociationPublishing, London.
3. **BHATT (R K)**. Unesco: development of libraries and documentation centres in developingcountries. 2004. K K Publications, New Delhi.
4. **HIGGINS (S E)**. Youth services and public libraries.2007. Chandos Publishing, Oxford.
5. **IFLA**. IFLA guidelines for public libraries (revised). 2000. The Hague, IFLA.
6. **INDIA.** Advising committee for libraries. Ed. 2. 1958. Manager of Publications, Delhi.
7. **JAGANAYAK (S S)**. Role of libraries in socio-economic, cultural, and educational development.1997. Classical Publication, New Delhi.
8. **PATEL (Jashu)** and **KRISHAN KUMAR**. Libraries and librarianship in India.2001. GreenwoodPress, Westport, Connecticut.
9. **THOMAS (V K)**. Public libraries in India: development and finance.1997. Vikas. Publication,New Delhi.
10. **WOODRUM (Pat), Ed**. Managing public libraries in 21st century. 1989. The Hawork Press, NewYork.

Subject Name: ACADEMIC LIBRARY AND INFORMATION SYSTEM

UNIT – I: Academic Libraries and their Development

Objectives and Functions, History and Development of Libraries with Special Reference to India, Role of Libraries in Formal and Non-Formal Education System, UGC and its Role in the Development of College and University Libraries.

UNIT – II: Collection Development and Management

Periodicals, Conference Literature, Grey Literature and Government Publications, Non-Book

Materials, Electronic Resources and Online Databases

UNIT – III: Library Organization and Administration

Organizational Structure, Staff Manual, Library Surveys, Statistics and Standards, etc.

UNIT – IV: Information Services

CAS, SDI, Abstracting and Indexing Services, Library Bulletin, Newspaper Clipping Services, Computerized Services, Resource Sharing and Networking: INFLIBNET, UGC-INFONET Digital Library Consortium, etc.

Information Literacy Programmes.

UNIT – V: Financial and Human Resource Management

Determination of Finance, Sources of Finance, Types of Budget, Nature, Size, Selection, Recruitment, Qualification and Training, Responsibilities and Duties, Competency Development.

Recommended Books

1. **BAKER (David), Ed**. Resource management in academic libraries.1997. Library Associations, London.
2. **BROPHY (Peter)**. The academic library. 2000. Library Association, London.
3. **BUDD (J M)**. The academic library: the context, its purpose and its operation. 1988. LibrariesUnlimited, London.
4. **CHAPMAN (Liz)**. Managing acquisitions in library and information services 2001. Library Association, London.
5. **DOWLER (L) Ed**. Gateways to knowledge: the role of academic libraries in teaching, learningand research.1998. The MIT Press, London.
6. **JORDON (Peter)**. The academic library and its users.1998. Gower Publishing Limited, London.
7. **LINE (Maurice B), Ed**. Academic library management. 1990. Library Association, London.
8. **RANGANATHAN (S R**). School and college libraries. 1942. Madras Library Association, Madras.
9. **WEBB (Sylvia P)**. Personal development in information work. Ed 2. 1991. Aslib, London.
10. **WHITE (Carl M)**. Survey of university of Delhi. 1965. Planning Unit, University of Delhi, Delhi.

Subject Name: AGRICULTURAL SCIENCES LIBRARY AND INFORMATION SYSTEM

UNIT – I: Agricultural Science Libraries and their Development

Objectives and Functions, History and Development of Libraries with Special Reference to India, Role of ICAR, Committees and Other Agencies in the Development of Agricultural Libraries in India.

UNIT – II: Collection Development and Management

Periodicals, Conference Literature, Grey Literature, Patents, Standards, Specifications and Government Publications, etc.

Non-Book Materials, Electronic Resources and Online Databases.

UNIT – III: Library Organization and Administration

Organizational Structure, Staff Manual, Library Surveys, Statistics and Standards, etc.

UNIT – IV: Information Services

CAS, SDI, Abstracting and Indexing Services, Library Bulletin, Newspaper Clipping Services,

Computerized Services, Resource Sharing and Networking: AGRIS, INAGRIS, CABI, etc. Information Literacy Programmes.

UNIT – V: Financial and Human Resource Management

Determination of Finance, Sources of Finance, Types of Budget, Nature, Size, Selection, Recruitment, Qualification and Training, Responsibilities and Duties, Competency Development.

Recommended Books

1. **BHATT (V S)**. Information resources in agricultural research in 40 years of agricultural researchin India. 1989. ICAR, New Delhi.
2. **CHOTEY LAL (C)**. Agricultural libraries and information systems: a handbook for users. 1998. RK Techno Science Agency, New Delhi.
3. **DAYMATH (Y)** and **RUTTAN (V W)**. Agricultural development: an international perspective.1979. John Hopkins, Baltimore.
4. **DESHMUKH (P P)**. Standardization of library and information services with special referenceto scientific and agricultural libraries. 1990. ABC, New Delhi**.**
5. **KUMAR (P S G)**. Agricultural librarianship: MLISc elective paper. 2008. B.R.Publication, NewDelhi.
6. **SHARMA (R D)**. The agricultural information network for India. 1989. Society for InformationScience, New Delhi.
7. **SUBBAIHA (R)**. Agricultural librarianship in India: an overview. 1988.Metropolitan, New Delhi**.**
8. **SWAMINATHAN (M S)**. Report of the working group on agricultural research and educationfor the formulation of the eighth plan. 1989. Planning Commission, ICAR, New Delhi.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

MASTER OF JOURNALISM

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: Master of Journalism

Introduction :

The Master of Journalism (MJ) in Open and Distance Learning (ODL) is a postgraduate program designed for students who want to pursue a career in journalism or related fields. The program is typically offered by universities and other educational institutions and provides students with a solid foundation in journalism principles, ethics, and practices.

The Master of Journalism in ODL program is designed for students who prefer to study online and learn at their own pace. The program typically includes a combination of online lectures, readings, assignments, and discussions, as well as opportunities for students to interact with their peers and instructors through virtual classrooms and online forums.

The program aims to equip students with the skills and knowledge they need to excel in various areas of journalism, such as investigative journalism, digital journalism, photojournalism, broadcast journalism, and more. The curriculum typically covers a range of topics, including media law and ethics, news gathering and reporting, media theory and analysis, media management and entrepreneurship, and multimedia storytelling.

Students who complete the Master of Journalism in ODL program can pursue a variety of careers in journalism and related fields, including newspaper and magazine reporting, broadcast journalism, digital media, public relations, corporate communications, and more. They may also choose to further their education by pursuing a doctoral degree in journalism or a related field.

(i) (a) Programme's Mission: The mission of the Master of Journalism (MJ) program is to prepare students to become competent and ethical journalists who can effectively communicate and analyze news and information in a rapidly changing media landscape. The program aims to provide students with the skills, knowledge, and values they need to excel in a variety of journalistic roles, including reporting, editing, producing, and managing content across different media platforms.

Through a comprehensive and rigorous curriculum, the program seeks to foster critical thinking, ethical decision-making, and a commitment to the public interest among its graduates. The program also aims to instill a deep understanding of the social, political, and cultural contexts in which

journalists operate and to prepare students to navigate the complex ethical, legal, and technological issues that arise in journalism practice.

Ultimately, the mission of the Master of Journalism program is to develop well-rounded, adaptable, and innovative journalists who can produce high-quality journalism that informs, educates, and engages diverse audiences.

(b) Objectives:

The objectives of the Master of Journalism (MJ) program include:

To provide students with a comprehensive understanding of the principles and practices of journalism, including news gathering and reporting, writing, editing, and producing content across different media platforms.

To develop students' critical thinking and analytical skills, enabling them to assess the quality and reliability of information, analyze complex issues, and produce in-depth reporting.

To foster ethical decision-making and a commitment to the public interest among students, ensuring that they adhere to the highest ethical standards of journalism.

To prepare students to work in a rapidly changing media landscape, including digital media, multimedia storytelling, and emerging technologies.

To provide students with a deep understanding of the social, political, and cultural contexts in which journalists operate, enabling them to report on diverse communities and issues with sensitivity and accuracy.

To equip students with the skills and knowledge they need to advance their careers in journalism, including entrepreneurship, media management, and leadership.

To develop students' ability to communicate effectively, both orally and in writing, and to work collaboratively in a team-oriented environment.

To prepare students to contribute to the development of the journalism profession and to serve as informed and engaged members of the broader community.

(ii) Relevance of the Programme with HEI's Mission and Goals: The Master of Journalism (MJ) program is highly relevant to the mission and goals of any Higher Education Institution (HEI) that seeks to promote excellence in education, research, and community service.

Firstly, the MJ program aligns with the HEI's mission to provide high-quality, student-centered education that prepares graduates for success in their chosen fields. By providing students with a comprehensive understanding of the principles and practices of journalism, the MJ program equips them with the skills and knowledge they need to excel in a variety of journalistic roles and to contribute to the development of the journalism profession.

Secondly, the MJ program aligns with the HEI's goals to promote research and innovation in the field of journalism. Through the program's rigorous curriculum, students develop critical thinking and analytical skills, enabling them to analyze complex issues and produce in-depth reporting that contributes to the broader body of knowledge in the field.

Finally, the MJ program aligns with the HEI's goal to serve the broader community by preparing students to be informed and engaged members of society. By fostering ethical decision-making and a commitment to the public interest among students, the program prepares graduates to produce high-quality journalism that informs, educates, and engages diverse audiences, thereby contributing to the democratic process.

Overall, the Master of Journalism program is highly relevant to the mission and goals of any HEI that seeks to provide high-quality education, promote research and innovation, and serve the broader community.

(iii) Nature of prospective target group of learners:

The Master of Journalism (MJ) program is designed for individuals who aspire to become professional journalists or who are already working in the field and want to enhance their skills and knowledge. The prospective target group of learners for the MJ program includes:

Recent graduates: The program is ideal for recent graduates who have a bachelor's degree in journalism or a related field and want to pursue a career in journalism.

Working journalists: The program is also suitable for working journalists who want to enhance their skills and knowledge in the field and stay up-to-date with the latest developments in journalism.

Professionals in related fields: The program may also be of interest to professionals in related fields, such as public relations, communications, and marketing, who want to gain a better understanding of journalism and how it can be used to communicate effectively with different audiences.

Individuals seeking a career change: The program may also appeal to individuals who are considering a career change and want to transition into the field of journalism.

Overall, the prospective target group of learners for the MJ program includes individuals who are passionate about journalism and want to develop their skills and knowledge to excel in the field.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The Master of Journalism (MJ) program is highly appropriate to be conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence. Here are some reasons why:

Flexibility: ODL allows students to learn at their own pace and on their own schedule, which is especially beneficial for those who are already working in the field. Students can access course materials and complete assignments at any time and from anywhere, allowing them to balance their work and personal commitments with their studies.

Technology: The field of journalism is constantly evolving, and ODL enables students to stay up-to-date with the latest technological advancements in the field. Through the use of various online tools and resources, students can learn how to produce high-quality journalism using digital technologies and online platforms.

Access to Resources: ODL allows students to access a range of resources that might not be available to them otherwise. Students can access a wealth of information and materials online, including video tutorials, podcasts, and digital libraries, which can help them develop their skills and knowledge in the field.

Interaction with Peers: Online forums and discussion boards provide students with the opportunity to interact with their peers and engage in meaningful discussions about the issues and challenges facing the journalism industry.

Overall, the MJ program is well-suited for the ODL mode of delivery, as it provides students with the flexibility, technology, resources, and opportunities for interaction that they need to acquire specific skills and competence in the field of journalism.

(v) Instructional Design: The M.J. programme is a One-year degree programme of 64 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

First			
Total Marks	**Total Marks**	**Total Marks**	**Total Marks**
1	Basic Theories of Mass Communication	8	100
2	International Communication and Global Media	8	100
3	Advance Reporting And Editing	8	100
4	Media Laws and Ethics	8	100
Total		**32**	

Second			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Advertising and Public Relation	8	100
2	Development Communication	8	100
3	Magazine writing	8	100
4	Communication Research Methods	8	100
Total		**32**	

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the MJ. programme is a 64-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree in Journalism from a recognised university.

Fee Structure: MJ:

Rs. 9000/-

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.

- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	**Letter Grade**	**Grade Points**	**Remarks**
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \ P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.

- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the

student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.
The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown.

This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The MJ. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MJ	5,00000/-	2,00000/-	7,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms are crucial to ensure the MJ program's high quality and to ensure that it meets the expected program outcomes. Here are some possible quality assurance mechanisms that can be implemented in an MJ program delivered in the Open and Distance Learning (ODL) mode:

- Accreditation: The MJ program can be accredited by recognized accrediting bodies, such as the American Library Association (ALA) or the Canadian Library Association (CLA), to ensure that it meets high standards of quality and rigor.
- Program assessment: Regular program assessments can be conducted to ensure that the MJ program is meeting its stated objectives and that it is providing students with the necessary skills and competencies.
- Faculty qualifications: The MJ program can ensure that its faculty members have the necessary qualifications, expertise, and experience to teach courses in library and information science.
- Student feedback: The MJ program can gather regular feedback from students to ensure that they are satisfied with the quality of instruction and the program's overall effectiveness in meeting their needs.

- External review: External reviewers can be invited to assess the program periodically to ensure that it is meeting high standards and that it is keeping up with the latest developments in the field of library and information science.

Expected program outcomes for an MJ program may include:

- Acquisition of knowledge and skills related to library and information science, including information organization and management, reference and research services, digital libraries, and other related areas.
- Development of critical thinking and problem-solving skills, as well as an ability to adapt to changing technologies and user needs.
- Understanding of ethical issues related to library and information science, including privacy, intellectual property, and access to information.
- Development of communication and collaboration skills, including an ability to work effectively with diverse populations and to communicate clearly and persuasively.
- Preparation for a variety of careers in library and information science, including positions in academic, public, school, and special libraries, archives, museums, and other information-related organizations.

By implementing quality assurance mechanisms and ensuring that the MJ program meets its expected program outcomes, graduates of the program can be confident in their abilities to succeed in library and information science careers and to make meaningful contributions to the field.

Madhya Pradesh Bhoj (Open) University Bhopal

Syllabus of Master of Journalism & Mass Communication (MJMC)

Previous Year

Paper I
Basic Theories of Mass Communication

Unit I Models and Theories of Communication,

Models of Mass Communication – Lasswell, Shannon and Weaver, Osgood, Wilber and Scrammed , Gerbner, Westerly and MacLean Model., Cognitive Consistency Theories – Hider, Newcomb and Fasteners theory, Concept of Selective Exposure, Selective Perception and Selective Retention, Media System dependency theory.

Unit II Sociological & Normative Theories,

Sociological Theories – Cultivation Theory, Spiral of Silence, Media Hegemony, Agenda Setting, Uses and Gratification theory, Normative Theories, Marshall Mcluhans Approach, Social Scientific Media Theories.

Unit III Mass Communication and International Communication,

Public Opinion and Propaganda, Concept of Mass and Culture, Philosophy of New world Information and Communication Order, Challenges of Cultural Imperialism and Neo-Colonialism.

Unit IV Mass Media,

Mass Media Institutions and Organizations, Mass Media Contents, Mass Media Audience, Mass Communication Effects.

Unit V Oriental Perspective on Communication ,

Asian Perspective, Indian Perspective, Communication in India, Indian Communication Theories.

REFERNCE BOOKS

1. Mass Communication Theory – Denis Mcquail,Sage publication,New Delhi.
2. Mass Communication in India – keval J,Kumar,Jaico Publication,House, Mumbai.
3. Understanding Mass Communication – Melvin.L.Defluer,Publishers Distributors, Delhi.
4. Communication and Society – Kamlesh Mahajan.
5. Media,Communication ,Culture – James Lull,Columbia University Press, New York.
6. Communication Theories; Origin, Methods and uses in the Mass Media – Werner .J.Severin and James,w.Thankard Jr.
7. संप्रेक्षणः प्रतिरूप एवं सिद्धांत – डॉ. श्रीकांत सिंहएभारती पब्लिशर्स इलाहाबाद
8. संचार माध्यमों का प्रभाव – डॉ. आंम प्रकाश सिंह, क्लासिकल पब्लिशिंग कम्पनीए नई दिल्ली

Paper II

International Communication and Global Media

Unit-1 Defining culture and Identities. Dimension of culture. Understanding face to face and mediated communication. Barriers to Intercultural communication.

Unit-2 Communication and information as tool of equality and exploitation .Human rights and communication. Globalization and Effects on Media system.Global Media Culture. Media Imperialism reformulated.

Unit-3 Global News agencies- Their structure and function. Satellite communication- historical background, status, progress and effects.

Unit-4 New world information and communication order. Recommendation of Mac Bride Commission Report. Media Rights and concern.

Unit-5 The new public sphere: Global, Civil Society, Communication Network and Global Governance. International Telecommunication and Regulatory organization.

Reference Books-

1. An Introduction to Intercultural Communication: Identities in a Global Community: Fred E. Jandt, Sage Publication, 2013.
2. International communication : a reader Edited by Daya Kishan Thussu Routledge, Publication 2012
3. Global Journalism : Logical issues and Media System, Edited by Arnold S. De Beer, PHI, 2009.
4. Global Television : An Introduction, Chris Barker, Blackwell publication 1997.
5. ग्लोबल मीडिया टेलीविजन , कृष्ण कुमार रत्तत, पोइन्टर पब्लीशर्स, 2008
6. ग्लोबल मीडिया टेलीविजन , विजय शर्मा, इशिका पब्लिलिंग हाउस, 2012

Paper III Advance Reporting And Editing

Unit I

Introduction to News because functioning & Editing :-

1. Set- up and working of news Bureaus in the National Capital, Metropolitan Cities and State Capitals.
2. Distribution of work among Correspondents & handling of multi- dimensional stories emanating at different places.
3. Coordination with Central Desk.
4. advance Editing – Meaning, Concept &Signification.
5. Understanding the Publication- It's audience, Ideology, Region etc.
6. Editing Symbols & How the computer has revolutionized editing.

Unit II

Specialised Reporting & Editing

1. Parliamentary/State Assembly Reporting.
2. Reporting of Sports, Defiance and Strategic Affairs, Courts and Crime, IT, Science & Technology, Agriculture, Business, Finance, Arts and Culture, Social Issues/General Issues , Environmental Issues etc.
3. Specific language Inputs-Usage tips, word & phrases, Specific grammatical problems.
4. Editing to Fit available space – cutting or expanding copy to fill space.
5. Writing of various types of Intro's & Leads.

Unit III

Interpretative Reporting and News Analysis

1. Basic of Interpretative Reporting.
2. Tools of Interpretative Reporting.
3. Objective and Subjective Interpretative Reporting.
4. News Analysis-explaining significance of development and analysing facts.

Unit IV

Investigative Reporting and Layout designing

1. Basic of Investigative Reporting,
2. Tools of Investigative Reporting, Perseverance, Legwork, Research and writing skills.
3. Principles of Layout designing of contemporary newspapers, Relationship between writing, editing and designing.
4. Tools and techniques of layout designing , Types, Type faces, use of white space in layout designing.
5. Planning the page- deciding weightage of story, positioning for optimum effectiveness, balance in editorial content, Preserving the format.

Unit V

Contemporary Reporting & Layout designing

1. Modern trends – The new journalism, Activism and Advocacy Journalism.
2. Competition between Print and Electronic media.
3. Sting Operations, Use of bugging devices, Hidden camaras etc.
4. Balancing Visuals, Advertisements and Editorial content.
5. Ethical Considerations when selecting visuals for Crime/Death/Grief stories.

REFERNCE BOOKS

1. News Reporters and News Sources, Herbert Strentz, Prentice Hall of India, New Delhi.
2. Interpretative Reporting, Mac Dougll.
3. News Reporting & Editing, K.M. Shrivastava.
4. Professional Journalism, M.V. Kamath, Vikas Publishing House Pvt. Ltd. New Delhi.
5. New Reporting and Writing S. Brain Brooks, Gearge Kennedy, Dary 1 R.Moen & Don Rankly, St. Martins Press, New Delhi.
6. Reporting for Print Media Fred Fedler Harcourt Brace Jouanovich New Delhi.
7. Basic News Writing Meluin mencher Universal Book Stall, New Delhi.
8. समाचार और संबाददाता, निशांत सिंह, संमार्ग प्रकाशन, नई दिल्ली.
9. जन माध्यम और पत्रकारिता, प्रवीण दीक्षित, म.च.रा.प.सं.वि.वि.
10. Editing : T.J.S. George, IIMC, New Delhi
11. Outline of Editing : M.K. Joseph Anmol Publication.
12. The Magazine Publishing Industry : Charles P. Daly, Patrick Henry Ellen Ryder.
13. New Editing in Theory and Practice, Sourin Banerji, K.P. Bagch & Company Calcutta.
14. Media : Grammar of the Edit, Ray Thempson, Focal Press, Oxford.
15. समाचार संपादन : प्रेमचंद्र चतुर्वेदी, उपहार प्रकाशन, नई दिल्ली।
16. लेखन, सम्पादन और मर्दन, ओम गुप्ता, राखी जैन,राजेश चौधरी, कनिष्क पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स, नई दिल्ली।
17. संपादन एवं मर्दन तकनीक, मनोहर प्रभाकर एवं संजीव भानावर, पुलित्जर अध्ययन एवं शोध संगठन जयपुर।

Paper IV
Media Laws and Ethics

Unit I

Media Law : Concept, Nature, Scopes and need, Freedom of speech and expression: Constitutional provisions, Permissible restrictions under Article 19 (2),their scope and limits : rights with responsibilities, Censorship and Media : The Indian experience, particularly during the Emergency of 1975.

Unit II

Press and Registration of Books Act, 1867, Law of defamation, Contempt of Courts Act,1971, Privileges of Parliament/State Legislatures, Major provisions of IPC (1860),CrPC(1973) Effecting the media.

Unit III

Official Secrets Act, 1923, Right to Information Act,2005, Working Journalists, Other Newspaper Employees (Conditions of Service) and Miscellaneous Provisions Act, 1955, Copyright Act, 1957, Press Council Act, 1978.

Unit IV

Cable Television Networks (Regulation) Act, 1995 and Rules, Prasar Bharti (Broadcasting of India) Act, 1990, Information Technology Act, 2000,
Debate and regulations about convergence.

Unit V

Media ethics : concept, scope, Need and Contemporary status, Norms of journalistic ethics, press council guidelines, Institutions of the ombudsman, Rights to Privacy, Broadcasting code, Cable TV Programme code,Advertising code, Professional ethics and codes for public Relations and Advertising .

REFERNCE BOOKS

1. International law governing communication and information : Edward W. Plowman.
2. Law of the press in India : D.D.Basu
3. Press Law: P M Bakshi.
4. Media Law : Geoffrey Robertson.
5. Human Rights of the world : p k Sinha.
6. Public Interest litigation : Justice Gulab Gupta.
7. Media Ethics & Law, Dr. jan R. Hakemulder.Dr. Jay Ac De Jonge & p.p. Singh,Anmol Publications, New Delhi.
8. Law of the press, Durga Das Basu wadhwa and company, Nagpur.
9. Indian press since 1955, S.C. Bhati Ministry of I & B, Government of India, New Delhi.
10. Freedom the individual & The Law Roberston geogry, penguin Books London.
11. Law relating to press & sedition in India, H.P. Gupta sarkar, Orient Publishing House, New Delhi.
12. प्रेस विधि डॉ. नंदकिशोर त्रिखा,विश्वविद्यालय प्रकाशन,वाराणसी
13. प्रेस कानून और पत्रकारिता, डॉ. संजीव भानावत,राजस्थान हिन्दी ग्रंथ अकादमी जयपुर

Madhya Pradesh Bhoj (Open) University Bhopal

Syllabus of Master of Journalism & Mass Communication (MJMC)

Final Year

Paper I

Advertising and Public Relation

Unit I

Concept of PR. Role and scope of PR. Traditional Vs. Contemporary PR, PR and Media : The Symbiotic Relationship, Types of PR : Brand Promotion, Image Building, Informational Crisis Management, PR & Propaganda – Public/Private Sector based PR, Tools of PR: PRESS Release ,press Conference Information Dockets, Interacting with journalists. Internet Based PR.

Unit II

Organizational Structure of PR department in central and state Government, PR in central govt. press Information Bureau, AIR, Doordarshan, Other PR Wings: Films Division, song and Drama division, Field Publicity etc, State Governments and PR Art of PR Writing : Literature, press release, Information sheet etc.

Unit III

Growth of PR Agencies, PR Agency: Getting clients and servicing them, Planning a PR campaign, Ensuring "positive" coverage for a client, characteristics of Good PR professional, Lobbying and PR, Avoiding of "plants"

Unit IV

concept of corporate communication and culture, Relationship between PR & CC, MNC's and Indian corporate house, Planning for corporate communication, Identity, Personal grooming for PR and CC persons, Indian Agencies Vs. International Agencies.

Unit V

Advertising : Definition, Role & scope, History of Advertising: Early forms of Branding, Progression of advertising, Advertising Agency: Role, Function and media selection idea generation and analysis. Types of Ads: corporate, consumer products, financial, public Awareness, classified, tender, Metrorails, Print, Electronic and web Advertising: Arts of copy writing, and successful . Ad campaigns in India : "Taste of India (AMUL)" " Hero Honda" Hamara Bajaj' "onida".etc.

REFERNCE BOOKS

1. Advertising – New concepts , S.S. Kaptan, sarup & sons, new delhi.
2. Advertisement in print media, sanjay kaptan & Akhilesh Acharya, Book Enclave, jaipur.
3. Advertising and public Relations, B.N. Ahuja & S.S. Chabra,surjeet publications, Delhi.
4. public Relation H.Frazier Moore & Frank B.Kalupa, surjeet publications,Delhi.
5. Effective public Relations in public & private sector,C.G. Banik, jaico publishing house, Mumbai.
6. Handbook of public relations, Health Robert L. sage publications new delhi
7. Advertising Management, B.Narayan, APH Publishing corporation, New Delhi.
8. The Art & science of public relations Michael Bland,Alizon Theaker, Devid wragg,CREST publishing house, New Delhi.
9. Advertising Media planning, Z.Jack, Sarsion and Bumpa Loncoin.
10. Brand Positioning : Strategic for corporate Advantage, subroto sengupta,Tata M.C. Graw Hill,New Delhi.
11. संचार और जनसंचार डॉ शशिकांत शुक्ल / प्रो. जेद्ही. विलानिलम
12. जनसंपर्क सिधान्त और व्यवहार : डॉ शशिकांत शुक्ल

Paper II

Development Communication

Unit I

Development and society : Indian social structure,

Concepts of development : Nature and scope ; political,social and economic; different approaches to development . Basic indicators of development ; development and social change. Development and five year plans of India ; socioeconomic, political and cultural development.

Unit II

Mass Media and National Development

Development communication: Its concepts and processes. Dominant models of development communication ; participatory models of development communication.

Mass Media and Modernization approach , development support approach , Alternative Media for need – based development, critique of development communication.

Unit III

Thrust Areas of Development communication

Science, technology and development from the historical perspective ; science and technology communication; Agriculture development and communication, Mass media and environmental communication, population & health communication.

Unit IV

Communication : Integral part of development

Communication policy for development .Role of media in development, satellite instructional Television Experiment (SITE) Kheda communication project (KCP) Jhabua Development communication project (JCDP)

Communication for sustainable development, social movement.

Unit V

Development communication & media

Role of Radio and Transisitor, Radio and Rural forums, community listening community Radio Television and its impart on rural areas, film and its reach in rural India, news reel, Documentaries print – media barriers and accelerators in effective communication.

Traditional and alternative media for development fair, Exhibitions and demonstrations.

IT Communication for development Kkunwr @ Kkura= e- governance Gyandoot etc.

REFERNCE BOOKS

Wilbur schramm: Mass Media and National Development Stanford UP stan ford 1964

Uma Joshi : Understanding Development communication Dominant pub New Delhi

J.V.Vilanilam : science communication and Development SAGE 1993

j.a. Lent and J.V. Vilanilam : The Use of Development News: Casa studies of India Malaysia Ghana and Thailand (AMIC,Singapore) 1979.

Fernandes walter : Development with people Indian social Institute, New Delhi 1998

Devenmark : Development of Under Development.

Majid Tehranian : Globle Communication and word politics Domination, Development and Discourse, colorando: Lynne Rienner pub.

W.H. Meyer : Transnational Media and the Third world Development Greenwood, N.Y.

Shrinivas Melkote : Communication for development in the third world sage new delhi.

N.Jayveera and Amuna Gama : Rethinking development communication AMIC, Singapore,1998.

Bela Modi : Designing Message for Development communication, SAGE Publication.

K.Mahadevan,Kiran Prasad Youichi & Vijayanik : communication, Modernisation and social Development, (Volume 1 & 2) New Delhi : BRPC

Pillai V.S. Gupta : communication and development, concept, New Delhi 2000.

Prasad Khan : communication and Empowerment of women, The women press, Delhi 2004.

Dr. Kiran Prasad : ICT Recashing Development

Subhash Bhatnagar : ICT Development

Robert schware

Subhash Bhatnagar : E - governance

Paper III

Magazine writing

Unit – I

Brief history of magazine journalism in (i) India (ii) UK (iii) USA,Magazines.Journals and Daily Newspaper,TypesofMagazines;GeneralInterest,Business,Sport's,Children's,women's LeisureEntertainment,Science,Health,Education,SpecialisedMagazines,IT,Health,Auto,Career,Interiors & Design, Crime, Photography,House Journals and Magazine Sections of Daily Newspaper's.

Unit – II

Launching a Magazine Target, Market,Focus,Style,Dividing a magazineintosection's,Importance of a cover story,Regular section's in magazine, Letters, columns, Advice, Editional, Time out,Education Administration,copyright,Libel,censorship&Invasion

Unit – III

Planning a manazine Issue: Education Meeting & Co-orination with bureaus,Reporters,Contributors,writers etc.Planning focus,coverstory,Research & Reporting by

correspondence,Role of Re- writer specialists & copy Desk, Co- ordinator and editor,Layout in a magazine; Role of Graphics & Photosection, Closing an issue & sending it for Printing.

Unit – IV

Role of circulation Department in a magazine,Role of Marketing/Advertising Departments, Planning & Executing special issues and Supplements, Content studies (Analysis),Audience Research,Role & Importance of Promotions & Special Subscription offers.

Unit – V

Writing skills for magazines, Freelancing for magazines new trends in magazine journalism, Important Magazines: News Week,Time,Readers Digest, India Today,Outlook,The Week, Stardust, Competition, Success, Review, Femina,

Sarita,Manorama,EPW, Seminar,Hans,Gandhi Marg,Heraid (Pakistan) The Economist,CD-ROM & On- line Magazines,Future of magazine journalism.

REFERNCE BOOKS

Understanding Magazines - Roland E Wolsely

Mass Communication & Journalism – A.K. Shukla

Articles and Features – Ray Paul Nelson

How to write small Magazine articles - Ray Paul Nelson

The Mass Media – Alexandra Akopov

The Magazine Publishing Industry – Charies P Daly,Patrick Henry, Ellen Ryder

Paper – IV

Communication Research Methods

Unit I

Meaning, & scope of social science research, Types of research, Formulation of Research Problem, Variables, Hypothesis, Research Design and its types, Reliability, Validity and Objectivity.

Unit II

Sampling – Meaning, Types and Problems, Sources of Data – Primary and Secondary data, Questionnaire, schedule, Interview and Observation, Case Study, Content Analysis.

Unit III

Nature & Importance of communication research, Communicator/ Source Analysis, Message Analysis, Channel Analysis, Audience Analysis, Process and Impact Analysis.

Unit IV

Uses of communication survey research. Uses of different communication research methods in CSR, Processing a CSR proposal and a report, Scheduling, Activities and Budgetary requirement for CSR proposal, Advertisement & Market research.

Unit V

Levels of Measurement, Tabulation & classification of data, Graphic & Diagrammatic

representation of data, Mean, Mediam, Mode, Standard Deviation, Analysis of Variance,

correlation, Indexing and Bibliography .Writing a research report.

REFERNCE BOOKS

1. Research and Report writing : P. Saravanavel.
2. Research method for communication science : James H.Watt.
3. International media research : John corner, Philip Schlesinger,Roger Silverstone.
4. Research methodology, methods & Techniques : C,R. Kothari.
5. Mass media Research – An Introduction : Roger D Wimmer and Joseph R Dominide wade pub comp. Belmount.
6. Introduction to mass communication Research Ralph O Nayziger & Devid M. Greenwood press, New Yark.
7. Doing Qualitative Research Devid silverman.
8. सामाजिक अनुसंधान डॉ. डी.एस. बघेल
9. सामाजिक सर्वेक्षण अनुसंधान एंव सांख्यिकी हरीशचन्द उपाध्याय एटलांटिक पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स नई दिल्ली
10. अनुसंधान की प्रविधि और प्रक्रिया राजेन्द्र मिश्रा तक्षशिला पब्लिशर्स नई दिल्ली
11. मीडिया शोध, मनोज दयाल, हरियाणा हिन्दी अकादमी, चंडीगढ़.

PPR

For seeking approval to old programme

(Previous approval up to Academic Session 2022-23)

through ODL

[In Compliance of UGC (Open and Distance Learning Programmes and Online Programmes) Regulations 2020]

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

Bachelor of Arts (B.A.)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: B.A.

Introduction :

B.A. in ODL stands for Bachelor of Arts in Open and Distance Learning. This is an undergraduate degree program that provides students with an opportunity to pursue higher education through distance learning. The program is designed to enable students to gain a comprehensive understanding of various subjects and develop critical thinking and analytical skills.

ODL is a mode of education that allows students to pursue their studies without attending regular classes. It involves the use of various technologies such as online learning platforms, video conferencing, and study materials in print format. This mode of learning is becoming increasingly popular due to its flexibility, convenience, and affordability.

The B.A. in ODL program typically takes three to four years to complete and covers a wide range of subjects such as English, history, economics, psychology, sociology, and political science. The program is suitable for students who cannot attend regular classes due to work, family, or other commitments.

Upon completion of the program, graduates can pursue various career opportunities in fields such as education, journalism, public administration, social work, and business. They can also choose to pursue higher education in their respective fields or explore opportunities in research and academia.

(i) (a) Programme's Mission: The mission of the B.A. in ODL program is to provide students with a quality education that enables them to develop a comprehensive understanding of various subjects and acquire the necessary skills to become successful professionals. The program aims to:

- Provide students with a broad-based education that covers various disciplines and promotes interdisciplinary thinking.
- Develop students' critical thinking, analytical, and problem-solving skills through interactive learning experiences.
- Equip students with the necessary knowledge and skills to excel in their chosen careers and contribute to society.
- Foster a culture of lifelong learning and encourage students to pursue further education and professional development.
- Utilize innovative and effective teaching and learning strategies that leverage technology to enhance the learning experience of students.
- Provide students with access to a diverse range of resources and support services that facilitate their academic and personal development.
- Foster a sense of community among students and create opportunities for collaboration, networking, and social engagement.

In summary, the B.A. in ODL program's mission is to provide students with a high-quality, flexible, and accessible education that prepares them for success in their chosen careers and enables them to contribute to society.

(b) Objectives:

The objectives of the B.A. in ODL program are to:

- Develop students' knowledge and understanding of various subjects and disciplines, including humanities, social sciences, and natural sciences.
- Enhance students' critical thinking, analytical, and problem-solving skills through interactive and collaborative learning experiences.
- Promote students' communication and interpersonal skills, including written and verbal communication, teamwork, and leadership.
- Equip students with the necessary skills and knowledge to pursue further education or entry-level positions in their chosen fields.
- Foster a culture of lifelong learning and professional development among students.
- Provide students with access to a wide range of learning resources, including online materials, textbooks, and multimedia resources.
- Encourage students to develop an awareness of global issues and perspectives and promote cultural competence and diversity.
- Provide students with opportunities for personal and professional growth through extracurricular activities, internships, and community engagement.

Overall, the objectives of the B.A. in ODL program aim to provide students with a well-rounded education that prepares them for success in their chosen careers, promotes lifelong learning and personal development, and fosters a sense of global citizenship.

(ii) Relevance of the Programme with HEI's Mission and Goals:

The B.A. in ODL program is highly relevant to the mission and goals of higher education institutions (HEIs). HEIs are committed to providing students with high-quality education that prepares them for success in their chosen careers and contributes to society. The B.A. in ODL program aligns with this mission and supports the goals of HEIs in several ways:

- Accessibility: HEIs are committed to providing access to education to a diverse range of students. The B.A. in ODL program provides an accessible and flexible mode of education that enables students to

pursue their studies without attending regular classes. This mode of education supports HEIs' goal of promoting accessibility and inclusivity.

- Quality Education: HEIs aim to provide students with a high-quality education that prepares them for success in their careers. The B.A. in ODL program is designed to provide students with a broad-based education that covers various disciplines and promotes critical thinking and analytical skills. The program also utilizes innovative and effective teaching and learning strategies that leverage technology to enhance the learning experience of students.
- Lifelong Learning: HEIs are committed to fostering a culture of lifelong learning and professional development among students. The B.A. in ODL program aims to promote lifelong learning by providing students with access to a wide range of learning resources and opportunities for personal and professional growth.
- Global Citizenship: HEIs aim to promote cultural competence, diversity, and global awareness among students. The B.A. in ODL program aims to develop students' awareness of global issues and perspectives and promote cultural competence and diversity through its curriculum and learning experiences.

In summary, the B.A. in ODL program aligns with the mission and goals of HEIs by providing an accessible, high-quality, and flexible mode of education that promotes lifelong learning, cultural competence, and global citizenship among students.

(iii) Nature of prospective target group of learners:

The nature of the prospective target group of learners for the B.A. in ODL program is diverse and includes individuals from a variety of backgrounds and circumstances. The program is designed to cater to the needs of learners who are unable to attend regular classes due to work, family, or other commitments. The prospective target group of learners may include:

- Working professionals: The program is ideal for individuals who are currently employed and want to pursue higher education while continuing to work. The flexibility of the program allows them to balance work and study commitments.
- Stay-at-home parents: The program is suitable for individuals who are unable to attend regular classes due to family responsibilities. The flexibility of the program allows them to pursue their studies at their own pace and convenience.
- Individuals living in remote or rural areas: The program is accessible to individuals who live in remote or rural areas and may not have access to traditional higher education institutions.

- Individuals with disabilities: The program is suitable for individuals with disabilities who may find it difficult to attend regular classes. The flexibility of the program allows them to study at their own pace and convenience.
- Non-traditional students: The program is designed to cater to the needs of non-traditional students who may not have pursued higher education immediately after completing high school.

Overall, the prospective target group of learners for the B.A. in ODL program includes individuals who are seeking a flexible and accessible mode of education that enables them to pursue higher education while balancing other commitments. The program is designed to cater to the needs of a diverse range of learners and promote inclusivity and accessibility in higher education.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The B.A. in ODL program is appropriate to be conducted in the Open and Distance Learning mode to acquire specific skills and competence for several reasons:

- Flexibility: The Open and Distance Learning mode provides flexibility in terms of scheduling, location, and pacing of learning. Students can access course materials and engage in learning activities at a time and place that is convenient for them, allowing them to balance their studies with work and other commitments.
- Accessibility: The Open and Distance Learning mode allows students from diverse backgrounds and geographic locations to access higher education. The B.A. in ODL program can reach a wider audience, including those who cannot attend traditional on-campus classes due to physical, financial, or personal constraints.
- Personalized Learning: The Open and Distance Learning mode allows students to learn at their own pace and provides opportunities for personalized learning experiences. Students can review course materials, pause and repeat video lectures, and engage in online discussions and collaborative activities that cater to their learning needs.
- Technology-Enabled Learning: The Open and Distance Learning mode utilizes technology to support learning and promote digital literacy skills. The B.A. in ODL program provides students with access to a variety of online resources, multimedia materials, and interactive tools that enhance their learning experience.

- Life-Long Learning: The Open and Distance Learning mode promotes life-long learning by providing opportunities for continuing education and professional development. Students can access additional courses and resources to develop new skills and stay up-to-date with the latest trends in their field of study.

Overall, the Open and Distance Learning mode is an appropriate method for delivering the B.A. in ODL program, as it provides flexibility, accessibility, personalized learning, technology-enabled learning, and promotes life-long learning. These factors enable students to acquire specific skills and competence required in their chosen careers and contribute to their personal and professional growth.

(v) Instructional Design: The B.A. programme is a three-year degree programme of 120 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 3 year duration with annual examinations. The maximum period allowed is 5 years (double the duration). The Programme structure is as below.

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is three years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The

content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the B.A. programme is a 120-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the B.A. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: passed 12th standard in any stream.

Fee Structure: B.A. Previous & B.A. Final:

Rs. 2500/-: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.

- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has nodisciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The B.A. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
B.A.	7,00000/-	3,00000/-	10,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanism is essential to ensure that the B.A. in ODL program meets the required standards and achieves the expected program outcomes. The following are some of the quality assurance mechanisms that can be implemented in the program:

- Curriculum design and review: The program's curriculum should be designed to align with the program's objectives and goals. It should be periodically reviewed and updated to ensure its relevance to the changing needs of the industry and the learners.
- Qualified faculty: The program's faculty should have the required academic qualifications, professional experience, and teaching skills to effectively deliver the program's content. The faculty should be evaluated regularly to ensure their competence and adherence to the program's standards.
- Student support services: The program should provide adequate student support services such as academic advising, tutoring, career counseling, and technical support to ensure that the students have a conducive learning environment.
- Assessment and evaluation: The program's assessment and evaluation methods should be designed to measure the students' achievement of the program outcomes. The assessments should be fair, valid, and reliable, and the feedback provided to the students should be timely and constructive.
- Program evaluation: The program should undergo periodic evaluation to assess its effectiveness in achieving the program outcomes. The evaluation should involve stakeholders, including students, faculty, employers, and alumni, to provide feedback on the program's strengths, weaknesses, and areas for improvement.

The expected program outcomes of the B.A. in ODL program may include:

- Knowledge and skills: The program should equip students with the required knowledge and skills in their chosen field of study.
- Critical thinking and problem-solving: The program should develop students' critical thinking and problem-solving skills to enable them to analyze complex issues and develop effective solutions.
- Communication skills: The program should enhance students' communication skills, both written and oral, to effectively communicate their ideas and thoughts.
- Technology proficiency: The program should provide students with the necessary technological skills to use modern technology and tools to enhance their learning and work.

- Ethical and professional behavior: The program should instill ethical and professional behavior in the students to enable them to conduct themselves professionally in their chosen careers.
- In conclusion, implementing quality assurance mechanisms and achieving the expected program outcomes is crucial in ensuring that the B.A. in ODL program provides students with high-quality education that meets the required standards and equips them with the necessary skills and knowledge to succeed in their chosen careers.

Foundation Course: ENVIRONMENTAL EDUCATION

PART A: Introduction				
Program: UG Level Certificate		Class: UG I Year	Year: FIRST Year.	Session: 2021-22 onwards
Subject: Environmental Education				
1.	Course Code	X1-FCAC1T		
2.	Course Title	**Environmental Education**		
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	**Foundation Course**		
4.	Pre-Requisite (if any)	A course intended to create awareness about the life of human beings which is an integral part of environment; and to inculcate the skills required to protect the environment from all sides. To study this course, the student must have a knowledge about the environmental components, pollution, biodiversity, and ecosystem at senior secondary, class 12th level.		
5.	Course Learning Outcomes (CLO)	1. To understand various aspects of life forms, ecological processes, and the impacts on them by the human during Anthropocene era. 2. To build capabilities to identify relevant environmental issues, analyze the various underlying causes, evaluate the practices and policies, and develop framework to make inform decisions. 3. To develop empathy for all life forms, awareness, and responsibility towards environmental protection and nature preservation. 4. To develop the critical thinking for shaping strategies such as; scientific, social, economic, administrative & legal, environmental protection, conservation of biodiversity, environmental equity and sustainable development. 5. To prepare for the competitive exams.		
6.	Credit Value	2 Credit		
7.	Total Marks	Max.Marks : 50	Min. Passing Marks:17	

(डा. अर्चना पंचोली)

PART B: Content of the Course		
Total No. of Lectures-15 Hrs. (01 hours per week):		
Total No. of Lectures: 15		
Unit	Topics	No. of Lectures
I	**Environment and Natural Resources:** • Multidisciplinary nature, Scope and Importance of Environment • Components of Environment: Atmosphere, Hydrosphere, Lithosphere, and Biosphere. • Brief account of Natural Resources and associated problems: Land Resource, Water Resource, Energy Resource • Concept of Sustainability and Sustainable Development ***Keywords: Environment, Forest, Mineral, Food, Land, Water, Energy, Sustainable Development***	5 Hrs.
II	**Biome, Ecosystem and Biodiversity:** • Major Biomes: Tropical, Temperate, Forest, Grassland, Desert, Tundra, Wetland, Estuarine and Marine • Ecosystem: Structure function and types their Preservation & Restoration • Biodiversity and its conservation practices. ***Keywords: Biome, Ecosystem, Biodiversity***	4 Hrs.
III	**Environmental Pollution, Management and Social Issues:** • Pollution: Types, Control measures, Management and associated problems. • Environmental Law and Legislation: Protection and conservation Acts. • International Agreement & Programme. • Environmental Movements, communication and public awareness programme. • National and International organizations related to environment conservation and monitoring. • Role of information technology in environment and human health. ***Keywords: Pollution, Environmental Legislation, Environmental Movement, Environmental programme and organization.***	6 Hrs.

Suggested activities: (at least one)

1. Visit to an area to document environmental assets: rivers / forest / flora / fauna.
2. Visit to a local polluted site Urban / Rural/ Industrial / Agricultural
3. Study of simple ecosystem.

(डा-अर्चना पंचोली)

सैद्धांतिक प्रश्नपत्र के पाठ्यक्रम हेतु प्रारूप

भाग अ - परिचय			
कार्यक्रम: प्रमाण पत्र	कक्षा : बी ए प्रथम वर्ष	वर्ष: 2021	सत्र: 2021-22
विषय: राजनीति विज्ञान			

1	पाठ्यक्रम का कोड	A1-POSC1T
2	पाठ्यक्रम का शीर्षक	राजनीतिक सिद्धांत
3	पाठ्यक्रम का प्रकार :	कोर कोर्स
4	पूर्वापेक्षा (Prerequisite) (यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र-छात्राओं को 12 वीं में उत्तीर्ण होना आवश्यक है। किसी भी विषय का विद्यार्थी इसे चुन सकता है।
5	पाठ्यक्रम अध्ययन की परिलब्धियां (कोर्स लर्निंग आउटकम) (CLO)	1. इस कोर्स को पूरा करने के पश्चात विद्यार्थी राजनीतिक सिद्धांत का अर्थ एवं महत्व , विभिन्न विचारधाराओं और उपागमों को समझने में सक्षम होंगे । 2. राज्य की अवधारणा और उसके परिवर्तित स्वरूप की व्याख्या करने में सक्षम होंगे। 3. शक्ति, सत्ता एवं ये दोनों अवधारणाएँ परस्पर कैसे जुड़ी हुई हैं, को समझ सकेंगे। यह दोनों अवधारणाएँ आगे उनकी राजनीति की समझ में वृद्धि करेंगी। 4. संप्रभुता के विभिन्न आयामों और राज्य के साथ इसके संबंध को समझने में सक्षम होंगे। 5. स्वतंत्रता, समानता, न्याय और अधिकार की व्याख्या करने में सक्षम होंगे। इन आधारभूत राजनीतिक अवधारणाओं की समझ वास्तविक राजनीतिक जगत में विद्यार्थियों के लिए सहायक होगी।

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Govt.P.G. College, Dhanbad (M.

		6. लोकतंत्र के विभिन्न मॉडलों (प्रतिदर्श) एवं प्रतिनिधित्व के सिद्धांतों की व्याख्या करने में सक्षम होंगे।	
6	क्रेडिट मान	6	
7	कुल अंक	अधिकतम अंक: 25+75	न्यूनतम उतीर्ण अंक: 33

भाग ब- पाठ्यक्रम की विषयवस्तु

व्याख्यान की कुल संख्या (प्रति सप्ताह)-: 6 घंटे प्रति सप्ताह

कुल व्याख्यान – 90 घंटे

इकाई	विषय	व्याख्यान की संख्या
1.	**राजनीतिक सिद्धांत का बोध** 1. राजनीतिक सिद्धांत: अर्थ एवं महत्व 2. राजनीति के अध्ययन के दृष्टिकोण 3. राजनीति विज्ञान से जुड़े विभिन्न शब्द- राजनीति विज्ञान, राजनीतिक दर्शन, राजनीतिक सिद्धांत, राजनीतिक विचार एवं राजनीति 4. विचारधाराओं का परिचय	18
2.	**राज्य की अवधारणा** 1. राज्य को परिभाषित करना, राज्य के तत्व 2. राज्य की उत्पत्ति के सिद्धांत 3. राज्य की प्रकृति का बदलता स्वरूप	15
3.	**शक्ति, सत्ता और संप्रभुता**	**15**
4.	मूल राजनीतिक अवधारणाएं 1. स्वतंत्रता 2. समानता 3. न्याय 4. अधिकार	**24**
5.	**लोकतंत्र का विचार**	18

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सार बिंदु (की वर्ड)/टैग:
भाग स- अनुशंसित अध्ययन संसाधन
पाठ्य पुस्तकें, संदर्भ पुस्तकें, अन्य संसाधन

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अनुशंसित डिजिटल प्लेटफॉर्म वेब लिंक

1. **https://www.jstor.org/stable/2125628?seq=1**
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अनुशंसित समकक्ष ऑनलाइन पाठ्यक्रम:

NPTEL- Introduction to Political Theory By Prof. Mithilesh Kumar Jha, IIT Guwahati

https://onlinecourses.nptel.ac.in/noc20_hs35/preview

भाग द - अनुशंसित मूल्यांकन विधियां:

अनुशंसित सतत मूल्यांकन विधियां:

अधिकतम अंक: 100

सतत व्यापक मूल्यांकन (CCE) अंक : 25विश्वविद्यालयीन परीक्षा (UE) अंक: 75

आंतरिक मूल्यांकन: **सतत व्यापक मूल्यांकन** (CCE):	क्लास टेस्ट असाइनमेंट/ प्रस्तुतीकरण (प्रेजेंटेशन)	15 10 **कुल अंक :25**
आकलन : **विश्वविद्यालयीन परीक्षा:** समय- 02.00 घंटे	**अनुभाग (अ): तीन अति लघु प्रश्न (प्रत्येक 50 शब्द)** **अनुभाग (ब): चार लघु प्रश्न (प्रत्येक 200शब्द)** **अनुभाग (स): दो दीर्घ उत्तरीय प्रश्न (प्रत्येक 500 शब्द)**	03 x 03 = 09 04 x 09 = 36 02 x 15 = 30 **कुल अंक 75**

कोई टिप्पणी/सुझाव:

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Govt.P.G. College Jhabua (M.P.)

Format for Syllabus of Theory Paper

Part A Introduction			
Program: Certificate/Diploma Degree/	Class: BA I Year	Year: 2021	Session: 2021-22
Subject: Political Science			

1	Course Code	A1-POSC1T	
2	Course Title	Political Theory	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/.....)	Core Course	
4	Pre-requisite (if any)	To study this course, a student must have passed 12th. Student of any subject can study this course.	
5	Course Learning outcomes (CLO)	1. Student will be able to understand meaning and significance of Political theory, different ideologies and approaches. 2. They will be able to explain concept of state and its changing nature. 3. They will learn what is power and authority and how they are interwoven. These two concepts will further enhance their understanding of politics. 4. They will be able to learn different dimensions of sovereignty and its relation with state. 5. They will be able to explain liberty, equality, justice and rights. Understanding of these key political concepts will facilitate students in real political world. 6. They will be able to explain different models of democracy and theories of representation.	
6	Credit Value	6	
7	Total Marks	Max. Marks: 25+75	Min. Passing Marks:33

Part B- Content of the Course

Total No. of Lectures (in hours per week): 6 Hours per week
Total Lectures- 90 Hours

Unit	Topics	No. of Lectures
1	**Understanding Political Theory** 1. Political Theory: Meaning and Significance 2. Approaches to study of Politics 3. Different terms- Political Science, Political Philosophy, Political Theory, Political Thought and Politics 4. Introducing Ideologies	18
2	**Concept of State** 1. Defining State, Elements of state 2. Theories of Origin of State	15

Dr. J.C. Sinha
Professor Political Science
Govt.P.G. College Jhabua (M.P.)

संशोधित

सैद्धांतिक प्रश्नपत्र के पाठ्यक्रम हेतु प्रारूप

भाग अ - परिचय			
कार्यक्रम : प्रमाण पत्र	कक्षा : बी.ए.	वर्ष : प्रथम वर्ष	सत्र: 2021-22
विषय : समाजशास्त्र			

1	पाठ्यक्रम का कोड	A1-SOCI 1T
2	पाठ्यक्रम का शीर्षक	भारतीय समाज एवं संस्कृति (प्रश्न पत्र प्रथम)
3	पाठ्यक्रम का प्रकार : (कोर कोर्स /इलेक्टिव/जेनेरिक इलेक्टिव / वोकेशनल /.....)	मूल पाठ्यक्रम
4	पूर्वापेक्षां (Prerequisite) (यदि कोई हो)	बी.ए प्रथम वर्ष के समस्त छात्रों के लिए
5	पाठ्यक्रम अध्धयन की परिलब्धियां (कोर्स लर्निंग आउटकम) (CLO)	इस पाठ्यक्रम से छात्रों को भारतीय समाज की अवधारणा, कार्य और दैनिक जीवन से परिचित कराने की आशा है। यह छात्रों के समक्ष भारतीय समाज का एक व्यापक, एकीकृत और अनुभवजन्य चित्र प्रस्तुत करेगा : 1. इस पाठ्यक्रम से विद्यार्थियों को भारतीय समाज की मूल संरचना के बारे में एक धारणा मिलेगी, इसके ऐतिहासिक आधार, समाज और संस्थानों की बुनियादी दार्शनिक नींव सम्बन्धी अंतर्दृष्टि मिलेगी। 2. इस पाठ्यक्रम की सहायता से विद्यार्थियों में भारतीय परम्पराओं की व्यापक समझ विकसित होगी, जो वर्तमान समय में हमारे समाजीकरण से विलुप्त है। 3. इस पाठ्यक्रम के द्वारा विद्यार्थी भारतीय समाज के तीन स्तर: अरण्यक, लोक (ग्राम्य) और नगर के बारे में भी विस्तार से जानकारी प्राप्त करेंगे। 4. यह पाठ्यक्रम विद्यार्थियों के भविष्य में विभिन्न स्थानीय/क्षेत्रीय रोजगार के संसाधनों को चुनने में मदद करेगा।
6	क्रेडिट मान	सैद्धांतिक - 6
7	कुल अंक	अधिकतम अंक: 25+75 / न्यूनतम उत्तीर्ण अंक: 33

भाग ब- पाठ्यक्रम की विषयवस्तु

व्याख्यान की कुल संख्या (प्रति सप्ताह घंटे में) : 6-0-0 कुल व्याख्यान : 90 घंटे

इकाई	विषय	व्याख्यान की संख्या
I	1. भारतीय समाज	18
	1.1 भारतीय समाज के आधार : अरण्यक, लोक (ग्राम्य) एवं नगर	
	1.2 ऐतिहासिक पृष्ठ भूमि : प्राचीन काल, मध्य काल, आधुनिक काल	
	1.3 वर्ण, आश्रम, पुरूषार्थ	
	1.4 ऋण, यज्ञ, संस्कार	
	1.5 कर्म का सिद्धांत	
	1.6 पारस्परिकता : अरण्यक, लोक (ग्राम्य) और नगर बस्तियां	
	2. जनांकिकीय एवं सांस्कृतिक परिदृश्य	

सार बिंदु (की वर्ड)/टैग: सारबिन्दु - भारतीय समाज, वर्ण व्यवस्था, संस्कार, सामाजिक पारस्परिकता, अरण्यक, लोक (ग्राम्य) नगर

II	1. अरण्यक समाज	18
	1.1 जनजाति, ऐतिहासिक रूपरेखा	
	1.2 जनजातीय क्षेत्र एवं वर्गीकरण	
	1.3 सामाजिक संस्थायें : परिवार, विवाह, नातेदारी	
	1.4 जनजातीय धार्मिक विश्वास एवं व्यवहार	
	1.5 सामाजिक मुद्दे	
	1.6 जनजाति : संवैधानिक प्रावधान	
सार बिंदु (की वर्ड)/टैग: सारबिन्दु - भारतीय जनजाति, अनूसूचित जनजाति, संवैधानिक प्रावधान		
III	1. लोक (ग्राम्य) समाज	18
	1.1 लोक (ग्राम्य) समाज : ऐतिहासिक रूपरेखा	
	1.2 ग्रामीण जीवन : लोक संस्कृति, लघु एवं वृहद परम्परायें	
	1.3 जाति व्यवस्था : जाति का इतिहास एवं परिवर्तित प्रतिमान	
	1.4 सामाजिक संस्थायें : परिवार, विवाह, नातेदारी	
	1.5 धर्म: विश्वास एवं व्यवहार	
	1.6 सामाजिक मुद्दे	
	1.7 ग्रामीण विकास : नीतियॉ, कार्यक्रम एवं चुनौतियां	
सार बिंदु (की वर्ड)/टैग: सारबिन्दु - लोक संस्कृति, ग्रामीण विकास, जाति व्यवस्था		
IV	1. नगर समाज	18
	1.1 ऐतिहासिक रूपरेखा, कस्बा, नगर एवं महानगर	
	1.2 भारतीय नगर एवं उनका विकास	
	1.3 नगरीय समाज में परिवर्तन	
	1.4 नगरीय समाज की चुनौतियॉ, वैश्वीकरण	
	1.5 सामाजिक सांस्कृतिक निरंतरता : अरण्यक, लोक एवं नगर	
	1.6 नगर नियोजन एवं प्रबन्धन	
सार बिंदु (की वर्ड)/टैग: सारबिन्दु - कस्बा, नगर, महानगर, नगर नियोजन, नगर प्रबन्धन		
V	1. सामाजिक मुद्दे	18
	1.1 राष्ट्रीय एकीकरण मुद्दे एवं चुनौतियॉ	
	1.2 भारतीय परिवार व्यवस्था : मूल्य प्रतिमान मुद्दे	
	1.3 बालक, युवा एवं बुजुर्गों के मुद्दे	
सार बिंदु (की वर्ड)/टैग: सारबिन्दु - राष्ट्रीय एकीकरण, युवा, वृद्ध, पीढी संघर्ष		

भाग स- अनुशंसित अध्ययन संसाधन

पाठ्य पुस्तकें, संदर्भ पुस्तकें, अन्य संसाधन

अनुशंसित सहायक पुस्तकें /ग्रन्थ/अन्य पाठ्य संसाधन/पाठ्य सामग्री:

Suggested Readings:

1- MacIver, Robert M & Charles Hunt Page (1949) Society: An Introductory Analysis, New York.
2- Horton Paul B. Chester L.Hunt (2004) Sociology, Tata Mc Graw-Hill, New Delhi.
3- Bierstadt, Robert (1974) The Social Order, Mc Graw-Hill, New York.
4- Betelle Andre (1965) Caste Class & Power, California University, Berkcley.
5- Ghurye G.S. (1961) Caste, Class & occupation, Popular Book Depot., Bombay.
6- Béteille, André, (1985) Six Essays in Comparative Sociology, Oxford University Press, New Delhi.
7- Chauhan, B.R. (2018) Indian Village, Rawat Publication, Jaipur.
8- Behera MC (2019) Tribal Language Literature and Folklore, Rawat Publication, Jaipur.
9- Marriott McKim (2017) Village India: Studies in the Little Community, Rawat Publication Jaipur.
10- Indra Deva (2018) Society and Culture in India, Rawat Publication, Jaipur.
11- Muncher, J. (1991). The Caste System Upside Down. In D. Gupta (Ed.), Social Stratification , Oxford University Press, New Delhi.
12- Giddens, A. (2006). Sociology (5th ed.). Oxford University Press. London
13- Radcliffe-Brown, A.R. (1976). Structure and Function in Primitive Society, Cohen and West, London. 14- Goode, William J., (1977). Principles of Sociology. McGraw Hill, America.
15- Mishra Preeti, (2006) Domestic Violence Against Women, Deep & Deep Publication, New Delhi.
16. Sharma, Y.K. (2007) Indian Society: Issues & Problems, Laxmi Narayan Agarawal, Agra.
17. देसाई ए.आर. (2009) भारतीय ग्रामीण समाजशास्त्र, रावत पब्लिकेशन्स, जयपुर।
18. महाजन, धर्मवीर एवं कमलेश (2015) जनजातीय समाज का समाजशास्त्र, विवेक प्रकाशन,नई दिल्ली।
19. उप्रेती, हरिश्चन्द्र (1995) भारतीय जनजातियां , राजस्थान हिन्दी ग्रंथ अकादमी,जयपुर
20. दीक्षित, ध्रुव कुमार (2010) नगरीय समाजशास्त्र, रिसर्च पब्लिकेशन, जयपुर
21. सिंह बी.एन. (2015) नगरीय समाजशास्त्र, रावत पब्लिकेशन, जयपुर
22. बघेल. डी.एस. (2019) नगरीय समाजशास्त्र, कैलास बुक सदन, भोपाल
23. बोस, निर्मल कुमार (2013) भारत का ग्रामीण जीवनः एकता और विविधता, रावत पब्लिकेशन जयपुर

2. अनुशंसित डिजिटल प्लेटफॉर्म वेब लिंक

Indian Tribes:

https://www.google.com/search?q=Indian+Tribes+prospectus&oq=indian+tribes&aqs=chrome.1.69i5912j69i57j014j69i60.9261j07&sourceid=chrome&ie=UTF-8

https://tribal.nic.in/scholarship.aspx

Indian Society:

http://sdeuoc.ac.in/sites/default/files/sde_videos/II%20Sem.%20-%20Socio%20-%20Indian%20Society%202019%20Admn.%281%29.pdf

अनुशंसित समकक्ष ऑनलाइन पाठ्यक्रम:

इग्नू और अन्य केंद्र/राज्य संचालित विश्वविद्यालय

भारत और विदेश में "SWAYAM" जैसे MOOC प्लेटफॉर्म ।

भाग -द - अनुशंसित मूल्यांकन विधियां:

अनुशंसित सतत मूल्यांकन विधियां:

अधिकतम अंक: 100

सतत व्यापक मूल्यांकन (CCE) अंक : 25विश्वविद्यालयीन परीक्षा (UE) अंक: 75

आंतरिक मूल्यांकन: सतत व्यापक मूल्यांकन (CCE):	क्लास टेस्ट असाइनमेंट/ प्रस्तुतीकरण (प्रेजेंटेशन)	15 10 **कुल अंक :25**
आकलन : विश्वविद्यालयीन परीक्षा: समय- 02.00 घंटे	**अनुभाग (अ): तीन अति लघु प्रश्न (प्रत्येक 50 शब्द)** **अनुभाग (ब): चार लघु प्रश्न (प्रत्येक 200शब्द)** **अनुभाग (स): दो दीर्घ उत्तरीय प्रश्न (प्रत्येक 500 शब्द)**	03 x 03 = 09 04 x 09 = 36 02 x 15 = 30 **कुल अंक 75**

कोई टिप्पणी/सुझाव:

BA I Year: English Literature

Part A Introduction				
Program: Certificate Course		Class`: BA	Year: I	Session: 2021-22
Subject: English Literature (Theory)				
1	Course Code	A1-ELIT1T		
2	Course Title	Study of Drama (Paper I, Theory)		
3	Course Type (Core Course/Elective/Generic Elective/Vocational/.....)	Core Course		
4	Pre-requisite (if any)	To study this course, a student must have had the subject English Language/ English Literature in class 12th.		
5	Course Learning outcomes (CLO)	The course will inculcate team work, communicative ability, creativity and aesthetic sense in students, enabling them to understand, in detail, drama and the theatre. Through this course, the students will acquire the knowledge of • Different genres of drama, like comedy, tragedy, epic theatre, and commedia dell'arte • Distinctive features of Sanskrit, Greek, English, American, and Indian plays • Dramatic techniques and elements like plot, theme, character, spectacle and narrative		
6	Credit Value	4 (Theory) + 2 (Practical)		
7	Total Marks	Max. Marks: 25+75	Min. Passing Marks:33	

Part B- Content of the Course

Total No. of (Theory) Lectures (in hours per week): 02
Total (Theory) Lectures: 60

Unit	Topics	No. of Lectures
I	• **Classical Drama** 1.1 Sophocles: Oedipus Rex - Story **Keywords:** *Sanskrit theatre, Rasa theory,Classical tragedy, Greek tragedy, Greek theatre, Trilogy, Plot structure, Oedipus Complex, Electra Complex, Epic theatre*	15
II	• **Renaissance Drama** 2.1 Christopher Marlow: Dr. Faustus	18

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	2.2 William Shakespeare: Tragedy in ***The Merchant of Venice*** **Keywords:** *Renaissance, Characteristics of literary renaissance, Elizabethan drama, Elizabethan comedy, Morality plays, Elizabethan Tragedy, Catharsis*	
III	• **Restoration Drama** 3.1 John Dryden: All for Love **Keywords:** *Restoration drama, Restoration comedy, Comedy of manners, Heroic couplet, Restoration of monarchy, Rejection of Puritanism, Satire, Faith and Politics*	**12**
IV	• **Indian Drama** 4.1 Girish Karnad: Hayavadana **Keywords:** *Indian English Drama, Indian society, Morality, Modern Indian theatre, Regional drama: Gender concern, Mythical and social elements*	**15**

Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

Boulton, Marjorie. *The Anatomy of Drama*. London: Routledge and Kegan Paul Ltd., 1959.

Charlton, H.B. *Shakespearean Comedy*. Routledge Kegan and Paul, 1966.

Karnad, Girish. *Girish Karnad: Three Plays*. New Delhi: OUP, 2002.

Nicoll, Allardyce. *British Drama*. Delhi: Doaba House.

Stanivukovic, Goran, and John Cameron. *Tragedies of the English Renaissance: An Introduction (Renaissance Dramas and Dramatists)*. 1st ed., Edinburgh University Press, 2018.

Straub, Kristina, et al. *The Routledge Anthology of Restoration and Eighteenth-Century Drama*. 1st ed., Routledge, 2017.

Suggested digital platforms weblinks:

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"Restoration Drama in England | Encyclopedia.Com." *Encyclopedia.Com*. 2010, www.encyclopedia.com/humanities/culture-magazines/restoration-drama-england

Wikipedia contributors. "English Drama." *Wikipedia*, 26 Mar. 2021, en.wikipedia.org/wiki/English_drama.

Renaissance Drama
https://www.enotes.com/homework-help/what-main-characteristic-renaissance-drama-

Restoration Drama Characteristics
https://englishsummary.com/restoration-drama/#gsc.tab=0

Shakespeare Sonnets: Summary & Analysis 154 sonnets with translation
https://shakespearequotesandplays.com/shakespeare-sonnets/

Abhijnanashakuntala work by Kalidasa

https://www.britannica.com/topic/Abhijnanashakuntala

Oedipus Rex Greek mythology
https://www.britannica.com/topic/Oedipus-Greek-mythology

Suggested equivalent online courses:

- https://www.classcentral.com/course/modpo-356 Modern Drama – Free online Drama Course

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 25marks University Exam (UE) 75 marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE):25	Class Tests Assignment/Presentation	15 10
External Assessment : University Exam Section:75 Time : 02.00 Hours	**Section(A)** : Three Very Short Questions (50 Words Each) **Section (B) :** Four Short Questions (200 Words Each)	03 x 03 = 09 04 x 09 = 36 02 x 15 = 30 Total 75

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	Section (C) : Two Long Questions (500 Words Each)	

Any remarks/ suggestions:

Part A Introduction				
Program: Certificate Course		**Class`: BA**	**Year: I**	**Session: 2021-22**
Subject: English Literature (Practical)				
1	**Course Code**	**A1-ELIT1P**		
2	**Course Title**	**Applied Drama (Paper 1, Practical)**		
3	**Course Type (Core Course/Elective/Generic Elective/Vocational/.....)**	**Core Course**		
4	**Pre-requisite (if any)**	**To study this course, a student must have had the subject English Language/English Literature in class 12th.**		
5	**Course Learning outcomes (CLO)**	The course will inculcate team work, communicative ability, creativity and aesthetic sense in students, enabling them to understand, in detail, drama and the theatre. Through this course, the students will acquire the knowledge of • Different genres of drama, like comedy, tragedy, epic theatre, and commedia dell'arte • Distinctive features of Sanskrit, Greek, English, American, and Indian plays • Dramatic techniques and elements like plot, theme, character, spectacle and narrative		
6	**Credit Value**	**2**		
7	**Total Marks**	Max. Marks: 25+75	Min. Passing Marks:33	

Part B- Content of the Course		
Total No. of (Practical) Lectures- (in hours per week): 01 Practical **Total (Practical) Lectures: 30**		
Unit	**Topics**	**No. of Practicals /Lectures**
I	**1. American Drama**	**10**

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	1.1 Arthur Miller: All My Sons **Keywords:** *American drama, American tragedy, Native themes, American theatre, Realism in American drama, American dream, Urban plays, Eugene O'Neill, Feminist drama*	
II	**2. Modern Drama** 2.1 JM Synge: Riders to the Sea **Keywords:** *Modern drama, Problem plays, Realism, Symbolism, Celtic literature, Tragedy, Modernism, Protest drama, Drama of the twentieth century.*	**10**
III	**3. Applied Drama : Problems and Prospects** 3.1 Difference between comedy, tragedy and tragicomedy: Theme, plot, diction, charcters, comic, elements, stage and costumes. 3.2 Dialogue, action, conflict and mood of the audience 3.3 Rising and falling action and climax **Keywords:** *Catastrophe, Spectacle, Catharsis, Exposition, Antagonist, Melodrama*	**10**

Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

Ibsen, Henrik, et al. *Ibsen: 4 Major Plays, Vol. 2: Ghosts/An Enemy of the People/The Lady from the Sea/John Gabriel Borkman (Signet Classics)*. Reissue, Signet, 2001.

Krasner, David. *A Companion to Twentieth-Century American Drama*. 1st ed., Wiley-Blackwell, 2007.

Lopez, Jeremy. *The Routledge Anthology of Early Modern Drama*. 1st ed., Routledge, 2020.

Miller, Arthur, and Christopher Bigsby. *All My Sons (Penguin Classics)*. New Ed, Penguin Classics, 2000.

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O'Neill, Eugene, and Harold Bloom. *Long Day's Journey into Night*. 2nd ed., Yale University Press, 2002.

Watt, Stephen, and Gary Richardson. *American Drama: Colonial to Contemporary*. 1st ed., Heinle & Heinle Pub, 1994.

Williams, Tennessee. *A Streetcar Named Desire (Modern Classics (Penguin))*. 5th or later Edition, Penguin Books, 2009.

Suggestive digital platforms web links

"American Literature - Drama." *Encyclopedia Britannica*, 2019, www.britannica.com/art/American-literature/Drama.

Wikipedia contributors. "Theater in the United States." *Wikipedia*, 18 May 2021, en.wikipedia.org/wiki/Theater_in_the_United_States.

Suggested equivalent online courses:

- https://www.onlinecourses.swayam2.ac.in/cec21_lg03/preview "MODERN EUROPEAN DRAMA - Course." SWAYAM
- https://www.classcentral.com/course/modpo-356 Modern Drama – Free online Drama Course

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Internal Assessment	Marks	External Assessment	Marks
Class Interaction /Quiz	10	Viva-Voce based on the syllabus and assignment (as mentioned below)	15
Attendance	5	Assignment of five essays of 300 words each about the prescribed syllabus (handwriting and shape of presentation)	10
Assignments (Charts/ Model Seminar / Report of Excursion/ Lab Visits/ Survey)	10	The above assignment will be evaluated by the external examiner assessing the student's (creative) knowledge of the following:	50

8/8/21
Dr G S Gautam

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

Bachelor of Education (Distance Mode) Programme

Submitted to
UGC, DISTANCE EDUCATION BUREAU (DEB)
New Delhi

PROGRAMME PROJECT REPORT (PPR)

Bachelor of Education (Distance Mode) Programme

1. Introduction About the Programme

The Bachelor of Education (B.Ed.) Programme fulfils the mission of MPBOU i.e. to serve the marginalized section of the society across state by providing educational opportunity at the learners' doorstep to get a profession degree in teacher education. This programme is a judicious blend of both theoretical and practical courses throughout the academic years prepare and strengthen the professional in the field of teacher education. Its main thrust is to prepare competent teacher at school level. The two years B.Ed. distance mode programme is designed and developed in accordance with the National Council for Teacher Education (NCTE) guidelines for both working teachers at elementary levels who wish to upgrade their knowledge in self paced manner or fresh trained elementary teaching diploma holders who wish to enhance their professional qualification to broaden their job opportunities. The target groups of the programme are diploma holders from University, NCTE, SCERT, DIETS, and from State Boards Certified trained teaching professionals like BTC, STC etc.

2. Objectives of the Programme

The programme aims to achieve the following objectives

a. To systematize experience and strengthen the teaching competencies.
b. To acquire knowledge and develop understanding of various methods and approaches of teaching.
c. To help teachers in understanding the nature of the learners and the learning process.
d. To develop skills involved in dealing with the academic and personal problems of the learners.
e. To understand the various procedures and techniques of evaluation at school level.

3. Procedures of Admission, Evaluation and other details

Admission to this programme is provided to the eligible candidates through an entrance examination conducted by DME, Madhya Pradesh Bhoj Open Universityat the various places throughout the country.

The curriculum is transacted though the Print Self Learning Materials (SLM) and Face to Face Counselling Session supplimented by audio-video programme.

The duration of the programme for success completion is minimum two years and maximum five years.

The programme is transacted through the NCTE approved Study Centres across the country strictly as per the NCTE norms and standard. All the study centres where the

programme is offered have qualifed and trained teacher educators and required staffs to facilitate learner centric qualitiful teaching learnings as per prescribed curriculum.

Counselling sessions are held at the study centre normally on weekends within the general academic scheduled of the Programme. Five counselling sessions are organized in all theory courses seperatly. The counselling duration will be of 2 hours in each of the five sessions. Besides, couselling sessions, there are other compulsory activities like workshops as well as teaching practices in both the academic years.

The evaluation of the admitted students to this programme is done on the basis to their tutor marked assignments (30% weightage in the curriculum), performance in the annual tearm-end-examination as well as in the workshop and teaching practice by the competent teacher educators.

Annual examination is the major component of the evaluation system and it carries 70% weightage in a final result. You must fill in the Annual Examination form.

Generally the study centres happens to be the examination centre but in some cases where examination centres are alloted at some other institutions by giving the prior information to the appearing students.

All the study centres offering B.Ed. (Distance Mode) programme have sufficient library resources for the distance learners.

The total cost of the programme is Rs. 30000 (thirty thousands) payble in two equal annual instalments in both the academic years of the programme.

Quality assurance mechanism and expected programme outcomes is analysed strictly onthe NCTE Parameters/guidelines by the DME, Madhya Pradesh Bhoj Open Universityannualy

Examination date sheets (schedule which indicates the date and time of examination foreach course) are sent to all the study centres approximately 1 month in advance.

Brief Programme Structure

B. Ed. Previous Year

Theory Courses (Compulsory)

S. No.	Course Code	Course Title	Credits	I.A	T.E	Total Marks
1.	B.Ed-01	Childhood and Growing Up	04	30	70	100
2.	B.Ed-02	Contemporary India andEducation	04	30	70	100
3.	B.Ed-03	Language Across theCurriculum	02	15	35	50
4.	B.Ed-04	Understanding Disciplinesand Subjects	02	15	35	50
5.	B.Ed-05	Learning and Teaching	04	30	70	100
Total Marks (Compulsory Courses)			**16**	**120**	**280**	**400**

Practical Courses (Compulsory)

S.No	Course Code	Course Title	Credits	Total Marks
6.	B.Ed-06	Reading and Reflecting on Texts (EPC-I)	02	50
7.	B.Ed-07	Drama and Art in Education (EPC-II)	02	50
8.	…..	Workshop-I	04	100
9.	INT-I	Internship (See Appendix 1)	04	100
Total Marks (Practical Courses)			**12**	**300**

Pedagogy /Teaching Courses (Optional): out of the following a student has to select any **two** teaching subjects;

S.No	Course Code	Course Title	Credits	I.A	T.E	Total Marks
10.	B.Ed-08	Pedagogy of Hindi	02	15	35	50
11.	B.Ed-09	Pedagogy of English	02	15	35	50
12.	B.Ed-10	Pedagogy of Mathematics	02	15	35	50
13.	B.Ed-11	Pedagogy of Commerce	02	15	35	50
14.	B.Ed-12	Pedagogy of General Science	02	15	35	50
15.	B.Ed-13	Pedagogy of Social Science	02	15	35	50
Total Marks (Pedagogy Courses)			**04**	**30**	**70**	**100**
Total Marks to be awarded in previous year (400+300+100=800)						

B.Ed. Final Year

Theory Courses (Compulsory)

S. No.	Course Code	Course Title	Credits	I.A	T.E	Total Marks
1.	B.Ed-15	Assessment of Learning	04	30	70	100
2.	B.Ed-16	Knowledge and Curriculum	04	30	70	100
3.	B.Ed-17	Gender, School and Society	02	15	35	50
4.	B.Ed-18	Creating an Inclusive School	02	15	35	50
Total Marks (Compulsory Courses)			**12**	**90**	**210**	**300**

Practical Courses (Compulsory)

S. No.	Course Code	Course Title	Credits	Total Marks
5.	B.Ed-19	Critical Understanding of ICT (EPC-3)	02	50
6.	B.Ed-20	Understanding the Self (EPC-4)	02	50
7.	B.Ed-21	School Internship (Teaching Practice) (Se eAppendix II Page no 24)	12	300
8.	……..	Workshop-II	04	100
Total Marks			**20**	**500**

Optional Courses: the students are required to select **any one** of the following:

S. No.	Course Code	Course Title	Credits	I.A	T.E	Total Marks
9.	B.Ed-22	Vocational/ Work Education	02	15	35	50
10.	B.Ed-23	Health/Physical and Yoga Education	02	15	35	50
11.	B.Ed-24	Peace Education	02	15	35	50
12.	B.Ed-25	Guidance and Counseling	02	15	35	50
Total			**02**	**15**	**35**	**50**
Total Marks awarded in final year (300+500+50=850)						
Total Marks for the award of B.Ed. Degree (800+850=1650)						

Medium of Instruction

The medium of instruction is in Hindi/English.

Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	06 As per NCTE Norms
Laboratory Assistant	3
Clerical Assistant	3

Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e- book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

Identification of media

The printed version of SLM – study material shall be given to the learners in additionto MOOC, e-tutorial and Virtual lab.

Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

LEARNER SUPPORT CENTRE

The Learner Support Centre to which you have been admitted will remain your Learner Support Centre till you have cleared all components of the programme within the maximum time allowed. No student would be permitted to change his/her Learner Support Centre at any point of time. All the activities related to Counseling, Assignments and Annual Examinations will be held at the Learner Support Centre only. However, the DME, MPBOU reserves the right to discontinue/change the Examination/Learner Support Centre at any point of time as it deem appropriate.

EVALUATION SYSTEM

Assignments

Assignments are the part of continuous evaluation system. The submission of assignments in each course is compulsory. Assignments of a programme carry about 30% weightage.

Annual Examinations

Annual examination is the major component of the evaluation system and it carries 70% weightage in a final result.

Requirement of the laboratory support and library resources

Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

Cost estimate of the programme and the provisions:

Expense details	**Amount in (Rs.) Approx.**
Programme development (Single time Investment)	15,00,000/-
Programme delivery (per year)	5,00,000/-
Programme maintenance (per year)	5,00,000/-

Quality assurance mechanism and expected programme outcomes:

University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

University's Vision and Mission

Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Detail Course StructuresPrevious Year

BED 01: CHILDHOOD AND GROWING UP

Block-1 Childhood and Theories of Child Development

Unit-I Childhood and the construct of childhood: Introduction, children of different age groups, children from diverse socio-economic and cultural backgrounds.

Unit-II Construct of Childhood: Understanding the construct of different socio-political realities, different childhoodswithin children's lived contexts: family, schools, neighborhoods and community.

Unit-III Theories of child development (from cross-cultural psychology, sociology and anthropology), crucial aspectsfrom the construct of childhood in regard to political, social and cultural dimensions.

Unit-IV Theories of child development (Psychology), childhood and adolescence as constructed in different social-economic and cultural settings.

Block - 2 Adolescence and Growing up

Unit-I Adolescence of children across different cultures and situations**.** The Impact of urbanization and economic change on construction and experience of adolescence of children.

Unit-II Growing up**:** in realistic contexts of children and universalistic normative notions of childhood and adolescents.

Impact of caste and social class on lived experiences of children with special reference to India.

Block -3 Studying Children's Lived Realities

Unit-I Methods of studying children's lived realities**:** Through biographies, stories, observations about children by parents and teachers, children's diaries, testimonies and the media. Know how and importance of studying children in their natural settings, especially at play/in a community setting), and to interact with children using activities as a base to establish rapport.

Unit-II Lessons from the childhood of Rabindra Nath Tagore, J.J. Rousseau, Martin Luthar King (Junior), A P J Abdul Kalam, Hellen Keller, Louis Braille, Stephen Hawkins and Malala Yusafzai.

Block -4 Child Protection and Their Rights

Unit-I Policies in India**:** Legal provisions, policies and schemes for children in India. National (MWC, NIPCCD etc.) and International agencies (UNICEF, WHO, Red Cross etc.) working for children.

Unit-II Role of different agencies protecting child Right**:** Role of community, family, crèche, and child correction home in protecting childhood in India. Role of NGOs in protecting childhood.

BED 02: CONTEMPORARY INDIA AND EDUCATION

Block -1 Issues in Education

Unit-I Concept of Equity and equality and diversity in education: Equity and equality in education, concept of diversity at the level of individual in regard to regions, languages, religions, castes, tribes, etc.

Unit-II Approach to attain equality of educational opportunity: Provisions for equality of educational opportunity, causes of inequality, and attainment of ideals of equality in education.

Block -2 Universalisation of Education and Constitutional Provision

Unit-I Universalisation of Education : Concept of Universalisation of Education, qualitative and quantitative aspects of Universalisation of Education, strategies for achieving universalisation of education, obstacles in universalisation of education in relation to access (physical and social), enrolment, retention and quality.

Unit II Constitutional provision and Education : An introduction to the Constitution of India (especially the Preamble, Fundamental Rights and Duties of Citizens and the Directive Principles of State Policies) with regard to 'constitutional values' and aims of education. Amendments in the Constitution of India pertaining to education (elementary education, religious minority and linguistic minority, rights against discrimination, medium of instruction, and right to equality. Policies overview in regard to girl/women education in India, specific schemes to promote girl education like NPEGEL, KGBVY and others, educational provisions for marginalized section of the society (SC, ST, OBC, differently abled students)

Block -3 Education in India

Unit-I Education in ancient and medieval period: Educational Heritage of India, Vedic System of Education, Education in Ancient and Medieval India, characteristics of Gurukul, Matha & Vihar, Madarsas and Maktabs, the concept of Purusharthas, Traditional Indian Values. Education During Buddhist Period, Nature of Buddhist Education, Comparison between Vedic and Buddhist-education, Buddhist Centers of Learning, Medieval (Islamic) Education.

Unit –II Modern Education

Pre Independence : Macaulay's Minutes. Wood's Despatch, Hunter Commission, Gokhle-Bill, Wardha Scheme. Calcutta Universit Commission/ Sadler Commission, Hartog Committee, Abbot-Wood Report, Sergeant Report.

Post Independence : University Education Commission (1948-49), Secondary Education Commission (1952-53), Report of Education and National Development (1964-1966); National Education Policy (1968), National Policy on Education and its Programme of Action (1986/1992): Major suggestions and their implications.

Learning the Treasure Within (Report to UNESCO of the International Commission on Education for the 21st Century-Jacques Delor's Report), Millennium Development Goals (MDGs) in relation to education, Learning Without Burden (Yashpal Committee Report (1992-93); Sarva Shiksha Abhyan : Genesis, targets and plan of action, Right of Children for Free and Compulsory Education (RTE) Act 2009 : Origin, salient features and critique, and MDM (Midday Meal). National Knowledge Commission (NKC, 2005): Major recommendations in regard to various aspects of primary and secondary education, Need and Objectives of NCFSE – 2005 and NCFTE, 2009, RMSA (Rastriya Madhyamik Shiksha Abhiyaan) and RUSA (Rashtriya Uchhatar Shiksha Abhiyan), Critique of colonial education vs. indigenous education in India and an overview of experiments with alternatives in education.

Block -4 Privatisation and Education

Unit-I Privatisation of Education : Liberalisation and globalisation of the Indian economy; pedagogic and curricular shifts, Transcending caste, religion, class and gender,

Unit-II Current concerns relating to plebianisation: public vs. privatization, quantitative expansion vs. qualitative control, exclusion vs. inclusion and stratification of education.

Block -5 Democracy and Education

Unit-I Democracy: Meaning of democracy, secularism, inclusion, multiculturalism

Unit-II Role of democracy in Education: role of education, democracy and social pattern of society, role of education in national integration and emotional integration.

BED 03: LANGUAGE ACROSS THE CURRICULUM

Block -1 Language and teaching Learning Process

Unit- I Language: Introduction, types, components, linguistic skills and interrelationship between language and literacy.

Unit –II Language and teaching-learning process: Language and literacy background of students and teaching learning process, Language as a tool for pedagogical decisions, language and nature of students' learning.

Block -2 Language Diversity

Unit-I Language diversity in classroom: Ways and means to address the language diversity in the classroom, theoretical understanding of multiligualism in the classroom.

Unit-II Home language and School language :The home language and school language teaching learning process, the power dynamics of the 'standard' language as the school language vs. Homelanguage or dilects

Block -3 Theory of Language and Teaching-Learning Process

Unit-I Deficit Theory of Language

Unit-II Discontinuity Theory of Language

Block -4 Texts, Writing and Discussion

Unit I Texts : Nature of reading comprehension in the content areas (informational reading), nature of expository texts vs. narrative texts, transactional texts vs. reflexive texts. Schema theory, text structures, knowhow of examining content area of text books. Strategies for reading text books, children-note making, summarizing; making reading-writing connections.

Unit-II Writing and Discussion : Know how of process writing; process of analyzing children's writings to understand their conceptions: ways and means of writing with a sense of purpose-writing to learn and understand Discussion as tool for learning. The nature of questioning in the classroom, types of questions and teacher control.

BED 04: UNDERSTANDING DISCIPLINES AND SUBJECTS

Block -1 Basic and Nature of Discipline

Unit I Discipline: connotation, areas, distinction with curriculum, syllabus, factors responsible for the emergence of various disciplines, disciplines and school curriculum Introduction to disciplinary areas, especially social science, natural science and linguistics.

Unit II Nature of Discipline: Positive, Normative, and Speculative, disciplinary, interdisciplinary, multidisciplinary, and trans disciplinary Discipline and its basic questions, the methods of study and validation of knowledge.

Block -2 Fundamentals of Knowledge and Theory of Content

Unit- I The notion of knowledge: as being firm and objective, impersonal and with a coherent structure in social and political contexts, the notion of knowledge in diverse, dialogical, subjective, fluid and porous frame.

Unit-II Culture and knowledge : 'Culture specific knowledge', 'Culture free and universal' knowledge, and 'culture fair knowledge', changes in school curriculum over the period of time in humanistic perspective.

Unit III 'Theory of content' -the basis of content selection, framing in syllabus, and procedure of transformation so that learners construct their own knowledge through it. Criteria of inclusion or exclusion of a subject area from the school curriculum.

Block -3 Doctrine of Disciplinarily and Process of Knowing

Unit-I Notion of the 'disciplinarily doctrine', school subjects- discipline-oriented vs learner-oriented, school subject as the tool for social change and national development, changes in school subjects in pre independence and post independence India.

Unit-II Processes of knowing: Tenacity, authority, a-priori and a posterior (scientific inquiry), levels

of cognition- knowledge, understanding, analysis, synthesis and evaluation (Revised Bloom's Taxonomy), ways/ modes of representing knowledge, concept mapping, designing diagrams such as: classification, hierarchy, structural charts, models, simulations etc.

BED 05: LEARNING AND TEACHING

Block -1 Learning and Theories of Learning

Unit-I Learning: Concept, nature, characteristics, types, and factors affecting it.

Unit-II Understanding Learning Process: Behaviourist, cognitive, information processing, humanist, biological, constructivist and socio-cultural perspectives of learning process. Processes that facilitate 'construction of knowledge':

(i) Experiential learning and reflection
(ii) Social mediation
(iii) Cognitive negotiability
(iv) Situated learning and cognitive apprenticeship
(v) Metacognition.

Unit-III Cannons of Learning: Concepts and principles of each perspective and their applicability in different learning situations, relevance and applicability of various theories of learning for different kinds of learning situations. Jean Piaget, Bruner, Vygotsky, Rogers and Chomsky Theory of Learning and their educational implications.

Block-2 Learning and the learner Process

Unit-I Understanding learner: Development of a learner and Learning process, Meaning and principles of development, relationship between development and learning. Dimensions of individual development: physical, cognitive, language, affective, socio-cultural and moral, their interrelationships and implications for teachers (relevant ideas of Piaget, Bruner, Erikson and Kohlberg).

Unit-II Key cognitive and affective processes: Meaning of 'cognition' and ‘emotion’. Introduction to basic cognitive processes viz. perception, attention, memory, language development, thinking, problem solving, and

motivation and their role in learning, socio-cultural factors influencing cognition and emotion, role of emotion in learning, and connotation of Learning Styles.

Unit-III Developing Creative thinking among learners: Meaning and nature of creativity; factors of creativity; Development of creativity through use of brain storming (special focus on Osborn, De Bono and Gordon), teaching for minimizing negative transfer and maximizing positive transfer of learning.

Block -3 Teacher and the Teaching Process

Unit-I Foundations of Teaching: Concept, nature, characteristics of teaching, functions of teaching,

principles of teaching, phases of teaching, Teaching process as viewed by behaviorists', cognitivists', and constructivists (individual and sociocultural).

Unit-II Interrelationship between learning and teaching: Teaching process directed at learning, learner centred teaching and that the learner is at the heart of teaching, culturally responsive teaching approaches to make it learner centric, contextually located teaching, and teaching as highly complex enterprise, shaping of learners' attributes by the work of teaching, Analysing teaching in diverse classrooms

Unit-III Teacher Attributes: Professional and personal attributes of a teacher, Role of teacher in teaching-learning situations as transmitter of knowledge, model, facilitator, negotiator, co-learner. Involvement of teacher in planning, exploration, sharing and reflecting, analytical writing, method of studying teachers' diaries and its implications for teaching. Integrating technology in teaching to facilitate learning: Use of technology for individualized learning - Computer assisted learning, Role of teacher in preparing self learning material, Use of technology in small group teaching, peer tutoring, co-operative learning, group discussion, group projects, simulations and games. Use of technology in large group teaching, team teaching, collaborative teaching, questioning, demonstrations, exhibition, demonstrations. Teaching through distance mode-Preparing material for use of various media in education such as radio, television, web-conferencing, digital contents, ebooks, online courses.

BED 06: READING AND REFLECTING ON TEXTS

S. No.	Types of Text	No. of Text	Per Text Reflection Marks	Total Marks
1.	Empirical text	02	02	04
2.	Conceptual text	02	02	04
3.	Historical work	02	02	04
4.	Policy documents	02	02	04

5.	Studies about schools	02	02	04
6.	Text concerned with Teaching andlearning process	02	02	04
7.	Expository texts from diverse sources	02	02	04
8.	Autobiographical narratives	02	02	04
9.	Field notes	02	02	04
10.	Ethnographic Texts	02	02	04
	Evaluation of Reports and Viva voce			10
	Grand Total			**50**

BED 07: DRAMA AND ART IN EDUCATION

S. No.	Type of Activities	No. of Activities	Per Activities and their reporting Marks	Total Marks
1.	Organise Drama in School	02	04	08
2.	Visit Places of Art and Exhibitions	02	04	08
3.	Visit Places of Cultural Festival	02	04	08
4.	Visit of Local Culture and Art Forms andInterpret Art Works, Movies and other Media	02	04	08
5.	Watch Movies and Other Media ofEducational Significance and their Interpretation	02	04	08
6.	Evaluation of Reports and Viva Voce			10
	Grand Total			**50**

BED 09: PEDAGOGY OF HINDI

हिन्दी का शिक्षणशास्त्र

खण्ड 1 : हिन्दी शिक्षण : सैद्रांतिक पक्ष

इकाई 1: भाषा की प्राकृति एंव प्रर्काय

इकाई 2: भाषा अधिगम्स प्रक्रिया

इकाई 3: विधालयीय स्तर पर भाषा

इकाई 4: हिन्दी शिक्षण की व्यवस्था एंव सामग्री

खण्ड 2 : भाषिक योगयताओं का विकास

इकाई 1: हिन्दी के भाषिक तत्व–1

इकाई 2: हिन्दी के भाषिक तत्व–2

इकाई 3: श्रवण एंव मौखिक अभिव्यक्ति के कौशिल का विकास

इकाई 4: पठन योग्यता

इकाई 5: लिखित अभिव्यक्ति कोशल का विकास

खण्ड 3 : साहित्यिक विघाओं का शिक्षण एंव व्याकरण शिक्षण

इकाई 1 : कविता शिक्षण

इकाई 2 : गद्य : निबंध शिक्षण

इकाई 3 : गद्य की अन्य विधाओं का शिक्षण

इकाई 4 : व्याकरण शिक्षण

खण्ड 4 : मूल्यांकन क्रियात्मक शैध तथा समुन्नयन कार्य

इकाई 1 : भाषा संप्रप्ति मूल्यांकन

इकाई 2 : निदानात्मक एंव उपचारात्मक शिक्षण

इकाई 3 : क्रियात्मक शोध

इकाई 4 : समुन्नयन कार्य

BED 10: PEDAGOGY OF ENGLISH

Block -1 Introduction to English

Unit-I English: Structure of Content Area, History, Basic Conceptual Scheme and Future Perspective Objectives of Teaching English with Futuristic Vision

Block -2 Teaching and Teaching Method of English

Unit-I English, curriculum and methods of teaching: Place of English in School Curriculum, its Linkage with other Subjects and Different Stages, Unified/ Specialized Approach to Curriculum Cognitive Maps of Concepts in English Teaching Approaches and Methods in English Innovations in the Teaching of English with Futurist Vision

Unit-II Teaching of English: Teaching English Pronunciation Teaching of Vocabulary in English Teaching of Structures and Grammar in English Teaching Reading Comprehension Teaching of Writing in English Teaching of Poetry in English

Block -3 Planning and use of English in Teaching

Unit-I Planning in English Teaching and use of teaching aids: Yearly, Unit and Daily Lesson planning

Unit-II Context Specific Teaching Aids in English – Their Preparation and Evaluation Development of Instructional Material in English; Textbook, Its preparation and Evaluation.

Unit-III Student Assessment - Tests and Examination.

Block -4 English Teacher and Innovation

Unit-I English Teacher : Qualities of a Good Teacher of English: Problems and

Solutions Unit-II Resources: Classroom, Laboratory, Museum, Community,

Environment, Library, etc.Unit-III Innovation in English teaching and its future

BED 11: PEDAGOGY OF MATHEMATICS

Block -1 Introduction to Mathematics

Unit 1 Mathematics: Structure of Mathematics, History and Basic Conceptual Schemes andFuture perspectives of Mathematics

Unit-II Objectives of Teaching Mathematics and Futuristic Vision

Block -2 Teaching of Mathematics

Unit-I Mathematics, Curriculum and Teaching Aids. Place of Mathematics in School Curriculum and Correlation with other subjects, NCF 2005 in context of Mathematics Teaching Cognitive Map of Concepts and curriculum elements in Teaching of Mathematics Methods and Approaches of Teaching Mathematics, specific illustrations of content based methodology and subject specific skills

Unit-II Planning in Mathematics teaching and the use of teaching aids— sessional, unit and daily lesson plan. Development of Instruction Material in Mathematics, Text Book Preparation and Evaluation. Context Specific teaching aids in Mathematics Integration of information and communication technology in Mathematics Teaching.

Block -3 Assessment in Mathematics

Unit-I Measurement & Evaluation in Mathematics Teaching: Diagnostic Test and Remedial Teaching, Development of Multiple Choice Question Paper, Content Based Questions for Question Bank and Some Question for Open Book Examination.

Block -4 Mathematics Teacher and Innovation

Unit-I Mathematics Teacher : Qualities of an effective Mathematics Teacher, Problems and Solutions

Unit-II Resources and Innovation : Resources in Mathematics Teaching (Classroom Laboratory, Museum, Community Environments, Library etc.) Innovations in Mathematics teaching and its Future.

BED 12: PEDAGOGY OF COMMERCE

Block-1 Introduction to Commerce

Unit I Commerce: Structure of Commerce Teaching Content, History,

Unit II Objective and Concept of Commerce: Basic Conceptual Scheme and Future PerspectiveObjectives of Commerce Teaching with Futuristic Vision.

Block -2 Teaching of Commerce

Unit I Commerce, Curriculum and Methods of Teaching: Place of Commerce in School Curriculum, Linkages with Other Areas at Different Stages, Unified / Specified Approach to Curriculum Cognitive Map of Concept and Curricular Elements in Teaching of Commerce Approaches and Teaching Methods of Commerce with Specific Illustration, Specific Skills of Commerce Teaching Media and media integration in Commerce teaching.

Unit II Planning in Commerce teaching and the use of teaching aids: Sessional, Unit and Daily Lesson Planning Development of Instructional Material in Commerce Teaching, Text Book, its Preparation and Evaluation Concept Specific Teaching Aids in Commerce Teaching, its Preparation and Evolution

Block -3 Assessment in Commerce

Unit I Measurement and evaluation in Commerce: Students' Assessment with Specific illustrations in Commerce

Unit II Development of Test: Teaching, Diagnostic and Remedial Teaching, Development of Multiple Question Paper Sets / Development Of Question Bank, Concept Specific Questions For Open Book Examination

Block -4 Commerce Teacher and Innovation

Unit I Commerce Teacher : Qualities of a Good Commerce Teacher, Problems and Solutions

Unit II Resources and Innovation: Resources of Commerce Teaching Classroom, Laboratory, Community Environment and Library Innovations in Commerce Teaching and their Future

BED 13: PEDAGOGY OF GENERAL SCIENCE

Block -1 Introduction to General Science

Unit-I General Science: Structure of General Science, History and Basic Conceptual Schemes and Future perspectives of General Science

Unit-II Objectives of Teaching General Science and Futuristic Vision

Block -2 Teaching of General Science

Unit-I General Science, Curriculum and methods of teaching : Place of General Science in School Curriculum and Correlation with other subjects, NCF 2005 in Context of General Science Teaching Cognitive Map of Concepts and curriculum elements in Teaching of General Science Methods and Approaches of Teaching General Science, specific illustrations of content based methodology and subject specific skills

Unit-II Planning in General Science teaching and use of teaching aids - sessional, unit and daily lesson plan Development of Instruction Material in General Science, Text Book Preparation and Evaluation Context Specific teaching aids in General Science Integration of information and communication technologies in General Science.

Block -3 Assessment in General Science

Unit-I Measurement & Evaluation in General Science Teaching. Diagnostic Test and Remedial Teaching, Development of Multiple Choice Question Paper, Content Based Questions for Question Bank and Some Question for Open Book Examination.

Block -4 Science Teacher and Innovation

Unit-I General Science Teacher: Qualities of an effective General Science Teacher, Problems and Solutions

Unit-II Resources and Innovation: Resources in General Science Teaching (Classroom Laboratory Museum, Community Environments, Library etc.) Innovations in General Science teaching and its Future

BED 14: PEDAGOGY OF SOCIAL SCIENCE

Block -1 Introduction to Social Studies

Unit-I Social Studies: Content and Structure, History, Basic Conceptual Schemes and Future's perspectives.

Unit-II Objectives of Teaching Social Studies with Futuristic Vision

Block -2 Teaching of Social Studies

Unit-I Social Studies, Curriculum and Methods of Teaching Place of Social Studies in

School Curriculum at different level- Relation with other subjects. Cognitive Map of Concepts and Curricular Elements Approaches of Teaching Methods, Specific Illustration of Content based methodology, subject-specific skills.

Unit-II Planning in Social Studies Teaching and use of Teaching Aids: Sessional, Unit and Daily Lesson Development of Instructional Material in Social Studies, Text Book, Its Preparation and Evaluation Context Specific Teaching Aids, Preparation and Evaluation. Integration of information and communication technology in Social Studies Teaching.

Block -3 Assessments in Social Studies

Unit-I Measurement and Evaluation in Social Studies Teaching Student Assessments with Specific Illustrations, Diagnosis, Remedial Teaching Development of Question Paper

Block -4 Social Studies Teacher and Innovation

Unit-I Social Studies Teacher: Qualities of a Good Teacher, Problems and Solution

Unit-II Resources and Innovation: Resources, Classroom, Laboratory etc Innovations, In the Teaching Subject and its Future.

Final Year

BED 15: ASSESSMENT FOR LEARNING

Block -1 Assessment and its Critique

Unit-I Basic concepts and scope: Measurement, Assessment, Testing, Examination, and Evaluation, Overview of Revised Bloom's Taxonomy and its implication for assessment, and Types of assessment.

Unit- II Critique of present assessment and evaluation: Assessment of learning product vs. assessment of learning process, summative assessment vs. formative assessment, unidimensional assessment vs. multi dimensional or comprehensive assessment. Critique of present assessment and evaluation: Rigid assessment vs. Flexible assessment, culture biased assessment vs. culture fair assessment, knowledge oriented assessment vs. learner oriented assessment, and mechanical assessment vs. growth oriented assessment.

Competitive assessment vs. cooperative assessment, high stake testing', competitive

ranking of schools, and pressures for teacher accountability, abolition of competitive examinations with grade retention, growing commercialisation of assessment, traditional assessment in relation to iniquitous systems of education and power and hegemony in society.

Block -2 Paradigms of Assessment

Unit-I Behaviouristic and Constructivist assessment: Behaviouristic and constructivist, difference between learning of assessment and learning for assessment, teaching-learning process and assessment.

Unit-II Assessment according to Committees and Commissions: Concept of Assessment and Evaluation as per Yash Pal Committee (Learning Without Burden,1993), National Curriculum Framework for School Education (NCFSE, 2005), CBSE, Right to Education (2009).

Unit-III Latest trends in Assessment: Grading system, Question Bank, Assignment, Project, Creative Expression, Comprehensive and Continuous Evaluation (CCE), Inclusive Evaluation, Participatory assessment and community monitoring with higher autonomy to teachers, culturally responsive realistic, comprehensive and dynamic assessment.

Block -3 Tools of Assessment

Unit-I Quantitative and Qualitative: Tools for assessing cognitive, affective and psychomotor attributes of learners (standardised and teacher made test, observation, rating scale, checklist, anecdotal records, interview, viva –voce, individual and group presentation, presentation portfolio and evaluation.

Unit-II Tools of Assessment for Children with Special Need: Specific strategies and tools for the assessment of learning outcomes of children with special needs.

Unit-III Reliability and Validity of Tools: Standardization process of assessment tools especially in terms of their technical features of the tool (discriminating index of items, reliability, validity, objectivity, and norms).

Unit-IV Types of questions and assessment: Types of objective and subjective questions, Levels of questions: Knowledge (Recall and Recognition Type), Understanding, Application, Analysis,Evaluation, and Creativity.

Block -4 Statistics in Assessment:

Unit-I Statistics in Assessment: Importance of statistics in assessment, Scales of

measurement (Nominal, Ordinal, Interval and Ratio), and Graphical representation of data.

Unit-II Measures of Central Tendency: Mean, Median and Mode, and Measures of Variability (Range, Quartile Deviation, Mean Deviation and Standard Deviation).

Unit-III Correlation**:** (Rank Order and Product Moment), Percentile and Percentile Rank.

BED 16: KNOWLEDGE AND CURRICULUM

Block -1 Epistemology: A Branch of Philosophy

Unit-I Introduction and Methods of acquiring knowledge: (A priori and a posterior, analytic and synthetic approach), with special reference to the enterprise of education.

Unit-II Epistemology and educational & pedagogic practice: Epistemological basis of education, distinctions between 'knowledge' and 'skill', 'teaching' and 'training', 'knowledge' and 'information', and 'reason' and 'belief'. Modern child-centered education: Activity, discovery and dialogue, with reference to Gandhi, Gijubhai Badheka, Tagore,

Block -2 Schools of Philosophical Thought

Unit-I Indian Schools of Philosophical Thought: Samkhya, Yoga and Vaishiashik with special reference to the enterprise of education, epistemology and educational & pedagogic practice. Buddhism, Jainism, Islamic and Sikhism with special reference to the enterprise of education, epistemology and educational & pedagogic practice. Upanishad, Bhagvat Gita and Advaitvad with special reference to the enterprise of education, epistemology and educational & pedagogic practice.

Unit-II Western schools of philosophical thought: Empiricism, idealism, and rationalism with special reference to the enterprise of education, epistemology and educational & pedagogic practice. Pragmatism and constructivism (personal and social) with special reference to the enterprise of education, epistemology and educational & pedagogic practice.

Block -3 Sociological Foundation of Education

Unit-I Sociological Bases of Education: Its connotation in the context of society, culture and modernity.

Unit-II Historical Changes in Social Bases of education**:** In the context of industrialisation, democracy and ideas of individual autonomy and reason.

Block -4 Issues in Education

Unit-I Education: Meaning and role of education in relation to modern values like equity and equality, individual opportunity and social justice and dignity, with special reference to Ambedkar's philosophy.

Unit-II Nationalism: Concepts of nationalism, universalism and secularism and their interrelationship with education, educational thoughts of Tagore and Krishnamurti in regard to nationalism, universalism and secularism.

Unit-III Multiculturalism: Concept of 'Critical multiculturalism' and 'democratic education' and pedagogic practices.

Block -5 Curriculum

Unit-I Foundation of Curriculum Connotation of Curriculum, curriculum development team, process of making curriculum, participation mechanism of stakeholders for curriculum development, and representation and non-representation of various social groups in curriculum making, role of state in the curriculum development. Concept of syllabus, course of study, relationship between the curriculum framework and syllabus, socio- political bases of curriculum framework.

Unit-II Curriculum and its Dimension: Various dimensions of the curriculum and their relationshipwith the aims of education, Curriculum as an agent of social change.

Unit-III Curriculum in School: Curriculum and rituals of school, its celebrations, its notions of rules, discipline, or the time-table and norms of society, role of hidden curriculum and children's resilience

Unit-IV Sociological Basis of Curriculum: Curriculum as enacted and curriculum as process and practice, relationship between power, ideology and the curriculum, critical analysis of textbooks, children's literature, and teachers' handbooks etc.

Unit-V Assessment and Evaluation of Curriculum: curriculum as driven by assessment, and market interests as driving force of curriculum development.

BED 17: GENDER, SCHOOL AND SOCIETY

Block -1 Theory of Feminism

Unit I Liberal Feminism

Unit-II Socialist Feminism

Unit-III Radical Feminism
Unit-IV Black feminism

Block-2 Sex and Gender

Unit-I Meaning of Sex and Gender: Meaning and experience of being a boy or a girl across different social groups, regions and time-periods.

Unit-II Learning and Challenges of Gendered roles in Society: through a variety of institutions (like family, caste, religion, culture, the media and popular culture (films, advertisements, songs etc.), law and the state, and patriarch and gender.

Block -3 Gender in Schools

Unit-I Concept of Gender just Education: Access of education and factors affecting it, factors affecting unequal access of education to girls.

Unit-II Role of Schools: Peers, teachers, curriculum and textbooks, etc. in challenging gender inequalities or reinforcing gender parity

Unit-III Construction of Gender in School: Gender Perspective (Theoretical Basis), roles and responsibilities in schools and classrooms, rituals and school routines, classroominteraction, processes of disciplining distinctly (for girls and boys).

Block -4 Gender Identity Construction and Sensitization

Unit-I Gender Identity Construction: Process of socialisation, gender identity construction (at home, schools, peers, teachers, curriculum and textbooks, etc., and influenced by media and popular culture (films, advertisements, songs etc.), law and the state, formulation of positive notion of sexuality

Unit-II Gender Sensitization: Issues of gender identity roles, gender just education through group work, brainstorming, audio-visual engagements, and co-participation of school (teachers, counsellors and other resources),home (parents and siblings) and society (NGOs, other expert groups, etc.) Gender Sensitization in Teaching-learning process, formulation of curriculum (with Gender perspective), gender sensitization in teacher training institutions, current trends towards gender sensitization, issues and challenges in regard to working towards gender equality in the classroom, strategies to prepare pedagogic material to promote gender just education .

BED 18: CREATING AN INCLUSIVE SCHOOL

Block -1 Models and the Construct of Disability

Unit-I Models of Disability: Medical Model, Social Model, Right Based Model, Eclectic approach Connotation of Impairment, disability and handicaps described in ICIDH and ICFDH.

Unit-II Disability and Its Impact on Individual's Interaction with environment: Participation in society and fulfilling social Roles. Labelling, its benefit and limitations, Normality, Disabled vs. Differently abled debate

Block -2 Policy Level Intervention in Addressing Educational Need of Children

Unit-I International Perspective: Declaration on the Rights of Mentally Retarded Persons, 1971, Declaration on the Rights of Disabled Persons, International Organizations working for Children with Disabilities, UNICEF, UNESCO, UNCRC: UN Convention on the Rights of the Child, UNCRPD: United Nations Convention on the Rights of Persons with Disabilities, Salamanca Statement and the Framework for Action on Special Needs Education. Adopted by the UNESCO, 1994, MDG (Millennium Development Goals), EFA (Education For All), IYDP: International Day of Persons with Disabilities

Unit-II National Perspective**:** Kotahri Commission's recommendation on special need children, IEDC (Integrated Education of Disabled Children, 1974), National Policy on Education 1986, Mental Health. Act, 1987, DPEP (District Primary Education programs), SSA (Sarva Shiksha Abhiyan), RCI Act, 1992, PwD Act, 1995, National Trust Act 1999, National Policy on Rights of PwD's 2006, Right to education and children with disabilities (RTE, 2009).

Block -3 Special Educational Needs

Unit-I Understanding special needs: Children with Special needs: Definitional Perspectives (Visual Impairment, Hearing Impairment, Loco-motor Disabilities, Learning Disabilities, Developmental Disabilities (Mental Retardation/ Autism/ Cerebral Palsy)

Unit-II Identifying Special Needs: Characteristics of Different Children with Special Needs, Screening and Identification of special needs of children with VI/HI/Developmental Disabilities (Mental Retardation/Autism/ADHD etc), Loco-motor disabilities, Gifted Learners

Unit-III Addressing Special Educational Needs : Different Models of Education of Children with Special Needs, Special Education, its strengths and limitations, Integrated Education, its strengths and limitations, Inclusive education its strengths and limitations, Deno's Cascadesystem, Types of Inclusion, Index of Inclusion

Block -4 Inclusive Schools and Classrooms

Unit-I Barriers: Attitudinal barriers, infrastructural constraints, social constraints and strategies for removing them.

Unit-II Remedies for inclusive school: Zero Rejection, Barrier Free Environment, Ease of Access of Infrastructure, Assistive Devices, Teaching Learning Materials as per the need of students, Adaptations, Resource Rooms, Social and Community awareness, Involving parents and community leaders.

Block -5 Management and Remedies for Inclusive Classroom

Unit-I Remedies-Psycho-social Issues of inclusion like Child Bullying, Peer Discrimination, Raging etc. Involving parents in education of their children with special needs, Parent-Teacher collaboration, Promoting collaborative learning within classroom.

Unit-II Managing Inclusive classes and schools- Management of School, managing resource room, management of an Inclusive Classroom Teaching Strategies fostering individual needs of children, Individualized Education Program, Group Teaching Strategies, Teaching and Learning through Co-Curricular activities, adaptation for special need children, Teachers role for effective inclusion of children with disabilities.

Unit-III Benefits and Schemes of Children with Special Needs

Schemes and benefits under PWD Act, 1995, National Trust Act, 1999, RTE, 2009, NHFDC Schemes, Other Schemes and Benefits provided by state governments.

BED 19: CRITICAL UNDERSTANDING OF ICT

Block -1 Introduction to Computer System

Unit I Computer: Hardware, software and other applications Introduction and applications of MS office.

Unit II Introduction to Internet, www, e-mail, social networking sites and their uses in teaching learning process

Block-2 Teaching of ICT

Unit I Applications of ICT: Applications of ICT in teaching learning, learning material

development,

Unit II Developing collaborative networks for sharing and learning, administrative and academicsupport systems, and broader implications for society.

Block-3 Teaching Learning Process in ICT

Unit I Introduction to Learning Management System: Open Education Resource, CreativeCommons and their roles in teaching learning process

Unit II ICT enabled learning: Introduction, features, as a democratic tool and scope. Criticalanalysis of ICT in teaching learning process.

Block-4 Teacher Learner Role in ICT

Unit I Role of learners in ICT enabled learning environment in regard to constructivism Unit II Role of Teachers in ICT enabled learning environment in regard to constructivism

BED 20: UNDERSTANDING THE SELF

S. No.	Types of activities to becarried out	No. of Activities	Per Activities and their reporting Marks	Total Marks
1.	Attending Workshop	02	02	04
2.	Movie/documentary Watching and its review	02	02	04
3.	Organizing Discussions Forum	02	02	04
4.	Self disclosure through art, dance and storywriting	02		
5.	Meeting people (within community)	02	02	04

6.	Participate or lead in real life intervention (within families/college or community) through guidanceand counselling	02	03	06
7.	Review of Personal narratives, life stories and group interactions	02	02	04
8.	Organising Yoga camp	02	02	04
9.	Revisiting one's childhood experiences and Childhood experiences of one's peers.	02	03	06
10.	Evaluation of Reports and Viva voce			10
			Grant Total	**50**

B.ED. 21: SCHOOL INTERNSHIP/TEACHING PRACTICE

In the first year there shall be work on the field amounting to a minimum of 4 weeks, spread over several days throughout the year. This will include one week of school engagement and three weeks of other engagements as explained ahead. In the second year, there shall be a minimum of 16 weeks of engagement with the field of which 15 weeks are school internship and one week is for other field engagements. Thus a minimum of 20 weeks (4+16) shall be allocated over the two years for tasks, assignments and school internship in the field, under the broad curricular area engagement with the field. The weightage of internal assessment for engagement with the field shall be 100 percent. The total marks for the school internship/teaching practice is 300.

BED 22: VOCATIONAL/WORK EDUCATION

Block -1 Vocational Education and its Theory

Unit 1 Vocational Education: Nature, Meaning, Need and Importance

Unit 2 History of Vocational Education in India: Policies related to vocational education

Block -2 Education and Work

Unit I Education and Work: Globalization, Work and knowledge, Gender and Disability relatedissues

Unit II Work and Curriculum: Typology of Work in Education, Learning from field experiences,Community work and social engagement

Unit III Communication & Soft Skills: Introduction, Need, Process & Types, Intercultural, Intra- cultural, Cross-cultural and International communication, Communications skills, Business Letter Writing, Electronic Communication, Basic Interaction Skills – Within family, Society,
Personal and interpersonal, Intrapersonal skills. Barriers to Communication. ImprovingCommunication Skills, Non-verbal communication, Body language, Postures and gestures,

Block -3 Management

Unit I Fundamentals of Management

Unit II Personal Management & Time

ManagementUnit III Personality Development

BED 23: HEALTH AND PHYSICAL / YOGA EDUCATION

Block -1 Basics of Physical and Health Education

Unit I An Introduction to Physical and Health Education Physical Fitness and Wellness

Unit II Psychological, Philosophical, Sociological, Physiological aspects of Health and PhysicalEducation

Block -2 Health and Physical Education in Schools

Unit I School Health Services in India

Unit II Addressing Malnutrition at School Level

Unit III Place of Health and Physical Education in curriculum

Block -3 Yoga and Management of Sports

Unit I Yoga and Its Importance for Various Body Systems

Unit II Management of Sports Facilities- Planning and Organisation

BED 24: PEACE EDUCATION

Block -1 Peace Education

Unit I Meaning, Nature and Scope

Unit II Human Rights and Peace Education
Unit III Gandhi and Peace Education

Block -2 Peace Education in Schools

Unit I Peace Education and Conflict Resolution in Schools

Unit II Designing Programmes: Ways of Integrating Peace into the Curriculum, Practices that Make School a Place of Peace, Teacher as Peace Builders, Pedagogical skills and strategies, Integrating Peace Concerns and Classroom Transactions

Unit II Frontiers of Education for Peace: Personality formation, living together in Harmony, Responsible Citizenship, National Integration, Education for Peace as a lifestyle movement.

Block -3 Issues in Peace Education

Unit I Critical Issues in Peace Education- Curriculum load, Textbook, Assessment and Examination, Teacher Education, School Settings, Media and Violence, Teacher-Parent relationship

Block -4 Education for Peace

Unit I Values and Skills- Peace Values and

SkillUnit II Peace Educators

BED 25: GUIDANCE AND COUNSELLING

Block -1 Guidance and Counselling

Unit I Introduction to Guidance and Counselling: Meaning, nature, scope, importance, aims andobjective

Unit II Types of Guidance and Counselling Individual: Vocational, and Educational EssentialGuidance and Counselling Services

Unit III Approaches in Guidance and Counselling- Directive and Non Directive, Group andIndividual Counselling

Block -2 Guidance and Counselling- Administration, Planning and Evaluation

Unit I Projective and Non- Projective Techniques
Unit II Administration and Evaluation of

Psychological Test**Block -3 Guidance and Counselling -**

Issues and Challenges Unit I Guidance and

Counselling and Distance Education

Unit II Guidance and Counselling- Research and Recent Trends

WORKSHOP-BASED PRACTICAL ACTIVITIES (1ST YEAR: 100 MARKS; 2ND YEAR 100 MARKS)

Classroom instruction requires mastery of various methods and modes of communication with the students. Instruction includes proper planning of instruction, special techniques associated with teaching specific subjects and also general management strategies needed for organizing teaching in a classroom. Apart from this, the teacher also has a multifaceted role of a manager, a researcher and a social welfare individual.

Workshop-I will be held in the First year before the commencement of practice teaching while Workshop-II will be held in the Second year. The schedule of the workshops should be requested from your Learner Support Centre. and a minimum of 80% attendance is compulsory in each workshop.

The first workshop corresponds to the first year theory courses and most of the school based activities to be carried out during practice teaching. The presentation of the reports of the School Based Practical Activities-I carried out in the school is also a part of this workshop. Apart from these, the first workshop orients you to all aspects of practice teaching and the school-based practical work to be undertaken before Workshop-II. The second workshop corresponds to the second year theory courses and some more school based activities along with developing of certain skills and attitudes to become an effective teacher.

The overall evaluation of the student's participation in different group discussions in each workshop will have marks awarded out of 100 to each student. In Workshop-I evaluation will be on the basis of participation in all the activities components except preparation of lesson plans and simulated teaching.

Practice Teaching (Subject 1: 150 marks; Subject 2: 150marks)

A total of the 40 lessons (20 in each teaching subject) have to be delivered by a student of B.Ed (distance mode) programme. The Teacher Educator(s) will supervise 10 lessons (5 lessons in each subject). The remaining lessons will be supervised by the mentor (principal or a person authorized bythe principal) in the practicing school. The Teacher Educator(s) will award 300 marks i.e. 150 marks

in each teaching subject (a maximum of 30 marks in each lesson). These marks if necessary may be moderated by the Programme Incharge taking into consideration the observations of the mentor(s) aswell as the Teacher Educator(s).

Practice teaching is a learning process that provides experiences to student teachers for development oftheir teaching competence..

Evaluation of practice teaching will be based on the student's performance in planning of lessons and simulated teaching during Workshop–I, comments of the mentor appointed in the practicing school and the evaluation of the teacher educator.

COUNSELLING SESSIONS

Counselling sessions are held at the Learner Support Centre normally on weekends within the general academic scheduled of the Programme. It may be noted that the counselling sessions are not conventional classroom teaching. Lectures will be largely based on discussions which will help to overcome difficulties faced by the candidates while going through the SLM**.**

Counselling sessions will be organized in all theory programmes. The counselling duration will be of 2 hours in each of the five sessions. Attending the counselling sessions is not mandatory, nevertheless is always in the interest of learners to attend these sessions.

Mode of Instruction

It is based on Self-Learning Material prepared and supplied by DME, besides counselling sessions and other exercises such as assignments etc. The SLM and Question Paper will be provided in English and Hindi however, the Assignments will be provided only in English.

Conduct of Practical Work

The Practical work will be held in the school (the work centre) and also in the Teachers Training Institution identified as a Learner Support Centre. As mentioned earlier, the practical work consists of School Based Practicals (SBP) and Workshop Based Practicals (WBP). The school based practicals will be carried out in the school i.e. the work centre (the place where the student-teacher is teaching) or the other school as mentioned above. The workshop-based practicals will be organised in two practical workshops during summer / winter vacations. The two workshops of 6 days duration each include intensive face-to-face interaction to develop skills and competencies, and will be organised at the Programme Centre. The student-teachers will have to do practical work, group discussion and various other activities required for the development of teaching skills and competencies while teaching in the school.

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

POST GRADUATE DIPLOMA IN
COMPANY SECRETARYSHIP

Submitted to
UGC, DISTANCE EDUCATION BUREAU (DEB)
New Delhi

Table of contents

MADHYA PRADESH BHOJ OPEN

UNIVERSITY, BHOPAL

POST GRADUATE DIPLOMA IN COMPANY SECRETARYSHIP

(a) Programme's Mission and Objectives

Mission

The mission of a PG Diploma in Company Secretaryship is to provide students with the knowledge and skills required to become a professional company secretary. This program is designed to help students develop a comprehensive understanding of corporate governance, legal compliance, and business ethics, as well as the ability to manage the affairs of a company effectively.

The curriculum typically covers topics such as company law, corporate governance, accounting and finance, securities laws, and compliance management. Students also gain practical experience through internships, projects, and case studies, which prepare them to handle the challenges of the corporate world.

The ultimate goal of a PG Diploma in Company Secretaryship is to produce well-rounded professionals who can provide valuable support to companies in managing their legal and regulatory requirements, ensuring compliance with laws and regulations, and ensuring ethical business practices. This, in turn, can help companies to operate more efficiently, minimize risk, and achieve their business goals.

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Programme Objectives:

The objectives of a PG Diploma in Company Secretaryship program may vary depending on the specific institution offering the program. However, some common objectives of this program are:

- To provide students with a deep understanding of the legal and regulatory framework governing companies and their operations.
- To develop students' skills in corporate governance and ethics, and to enable them to provide effective advice to company boards and management teams.
- To equip students with knowledge and skills in compliance management, risk management, and corporate social responsibility.
- To provide practical training and experience through internships, case studies, and projects, so that students can apply their learning in real-world situations.
- To prepare students for a career as a professional company secretary, who is capable of managing the legal and regulatory affairs of a company and providing support to the management team.

To help students develop critical thinking, problem-solving, communication, and interpersonal skills, which are essential for success in the corporate world.

Overall, the program aims to produce competent and ethical professionals who can contribute to the success of companies and uphold the highest standards of corporate governance and legal compliance.

Programme Outcome:

The outcomes of a PG Diploma in Company Secretaryship program are designed to equip students with the necessary knowledge, skills, and attitudes to succeed in the field of company secretaryship. Some of the expected outcomes of the program are:

- Deep knowledge of corporate governance principles and practices, as well as legal and regulatory frameworks governing companies.
- Strong understanding of financial accounting and corporate finance, and ability to interpret financial statements.
- Ability to advise boards of directors and management teams on legal, regulatory, and ethical issues.
- Proficiency in compliance management, risk management, and corporate social responsibility.
- Effective communication, interpersonal, and leadership skills, necessary for successful collaboration with colleagues and stakeholders.
- Critical thinking and problem-solving skills, necessary to analyze complex situations and make sound decisions.
- Proficiency in using information technology tools for research, analysis, and communication.
- Ability to work independently and as part of a team, and to meet deadlines and manage time effectively.
- Professionalism and ethical behavior, necessary for maintaining the integrity of the profession and upholding the values of corporate governance.

Overall, the program aims to produce competent and ethical professionals who can make significant contributions to the success of companies and uphold the highest standards of corporate governance and legal compliance.

(b) Relevance of the program with HEI's and Madhya Pradesh Bhoj Open University Mission and Goals

The relevance of a PG Diploma in Company Secretaryship program with an institution's mission and goals depends on the specific objectives of the institution. However, in general, this program is relevant to Higher Education Institutions (HEIs) and Madhya Pradesh Bhoj Open University because:

- It aligns with the mission of HEIs to provide high-quality education and training to students, and to prepare them for successful careers in their chosen fields.
- It aligns with the goal of HEIs to promote research and innovation, and to produce graduates who are equipped with the knowledge, skills, and attitudes to contribute to the economic and social development of the country.
- It aligns with the mission of Madhya Pradesh Bhoj Open University to provide open and

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distance education opportunities to learners who cannot access traditional classroom-based education, and to promote lifelong learning.

- It aligns with the goal of Madhya Pradesh Bhoj Open University to provide affordable and flexible education programs that meet the needs of diverse learners, including working professionals and students from disadvantaged backgrounds.
- It aligns with the mission of HEIs and Madhya Pradesh Bhoj Open University to promote ethical behavior, social responsibility, and sustainable development, which are essential values for professionals in the corporate world.

Overall, a PG Diploma in Company Secretaryship program is relevant to HEIs and Madhya Pradesh Bhoj Open University because it provides students with the knowledge, skills, and attitudes necessary to succeed in the corporate world, and to contribute to the economic and social development of the country.

(c) Nature of prospective target group of learners

The prospective target group of learners for a PG Diploma in Company Secretaryship program is typically individuals who wish to pursue a career in corporate governance, legal compliance, and company secretarial services. The program is suitable for:

- Graduates with a background in commerce, law, or management who wish to specialize in corporate governance and compliance management.
- Working professionals in the corporate sector who wish to enhance their skills and knowledge in corporate governance and legal compliance.
- Professionals in the legal, finance, or accounting fields who wish to expand their expertise in corporate governance and company secretarial services.
- Individuals who aspire to become a professional company secretary and wish to obtain the necessary qualifications and training.
- Entrepreneurs and business owners who wish to gain a comprehensive understanding of corporate governance and legal compliance, in order to manage their businesses effectively.

Overall, the target group of learners for a PG Diploma in Company Secretaryship program are individuals who are interested in the corporate world and wish to develop their skills and knowledge in corporate governance, legal compliance, and company secretarial services.

(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence;

The PG Diploma in Company Secretaryship program is highly suitable for Open and Distance Learning (ODL) mode because it provides learners with the flexibility to study at their own pace and convenience, while acquiring the specific skills and competence required for the profession. The following are some reasons why this program is appropriate for ODL mode:

Flexibility: ODL mode provides learners with the flexibility to study from anywhere and at any time, making it convenient for working professionals and individuals with other commitments to pursue the program.

Accessibility: ODL mode makes education accessible to learners who cannot attend traditional classroom-based programs due to geographical or other reasons.

Cost-effective: ODL mode is cost-effective as it eliminates the need for learners to travel to a physical location and pay for accommodation, transportation, and other expenses.

Customization: ODL mode allows learners to customize their learning experience by choosing the modules and courses that are most relevant to their career goals and interests.
Technology-enabled learning: ODL mode leverages technology to provide learners with a range of multimedia resources such as online lectures, e-books, and interactive simulations, which enhance their learning experience and promote engagement.

PG Diploma in Company Secretaryship program is highly appropriate for ODL mode because it provides learners with the flexibility, accessibility, and customization necessary to acquire the specific skills and competence required for the profession, while also leveraging technology to enhance their learning experience.

(e) Instructional Design

e.1 Revisions of Regulation and Curriculum Design

1. The University reserves the right to amend or change the regulations, schemes of examinations and syllabi from time to time based on recent market dynamics, industrial developments, research and feedback from stakeholders and learners.
2. Each student should secure 16 credits to complete PG Diploma in CS programme.
3. Each theory and practical course carries 2 credits with 75 marks in the University End Semester Examination (ESE) and 25 marks in the Continuous Internal Assessment (CIA).

Programme code

PGDCS

Course of Study and Scheme of Examinations

S.No	Course code	Name of the Course	CIA Marks Max.	ESE Marks Max.	Total Marks Max.	C Max.	Hrs
1	01	Company Law	25	75	100	2	6
2	02	Company Secretarial Practice	25	75	100	2	6
3	03	Business Regulatory Framework-I	25	75	100	2	6
4	04	Business Regulatory Framework-II	25	75	100	2	60
		TOTAL	**100**	**300**	**400**	**8**	**78**

Semester II							
5	05	Business Organization, Human Resource Management & Computer Awareness	25	75	100	2	6
6	06	Cost and Management Accounting	25	75	100	2	6
7	07	Corporate Compliance Management	25	75	100	2	6
8	08	Company Secretarial Practice	25	75	100	2	60
		TOTAL	**100**	**300**	**400**	**8**	**78**
GRAND TOTAL			**200**	**600**	**800**	**16**	**156**

CIA : Continuous Internal Assessment **ESE :** End semester Examination **Max**. Maximum Marks; **C :** Credits **Hrs**: Hours

Course Code Legend:

X	Y	Z	S	C

XYZ – Programme code for DAI&ML
S -- Semester Number; C – Course Number in the Semester

No,of Credits per Course(Theory& Practical):2

Total No. of creditsperSemester:8

Total No. of credits of the programme: 8 * 2 =16

e.2 Detailed Syllabi

The detailed Syllabi of study and shall be as shown in Appendix.

e.3 Duration of the Programme:

The PG Diploma in Company Secretaryship shall consist of aperiod of Two year (Four Semesters).

e.3.1 Medium of Instruction

The medium of instruction is only in **English**.
The course material is also in **English.**

e.4 Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	3
Laboratory Assistant	1
Clerical Assistant	1

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*Faculty at least in Assistant Professor level

e.5 Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e-book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

e.6 Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and Virtual lab.

e.7 Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at Directorate of Distance Education or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

(f) Procedure for Admissions, curriculum transaction and evaluation

f.1 Minimum qualification for admission

Candidates for admission to the PG Diploma in Company Secretaryship shall be required to have passed the following examinations.

A graduate degree under 10+2+3 or 10+2+4 pattern under any discipline, from a recognized university

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f.2 Curriculum transaction

- The face to face contact sessions in class room teaching with the support of SLM, Power Point Presentations, web based tools, audio and animated videos.
- The practical classes are based on the respective subject study materials containing requirement for the laboratory experiments.

- Face to face contact sessions will be conducted for both theory and practical courses in the following manner.

Course Type	Face to face contact session per semester(in Hours)
Theory courses (3 Courses – 6 Hrs/course)	18
Practical course(1 Course – 60 Hrs/course	60
Total	**78**

f.3 Evaluation

There shall be two types of evaluation systems; Continuous internal assessment and end semester examination will be conducted by the University according to the following scheme. The internal assessment for both theory and practical's is maximum of 25 marks for each course. The end semester examination for theory and practicalis maximum of 75 marks for each course. The candidate failing in any course(s) will be permitted to appear for each failed course(s) in the subsequent examination.

Internal assessment

- Internal assessment of theory courses is through class test, home assignment with workbook, case studies, review questions, quiz, multiple choice questions for 25 marks.
- The internal assessment for the practical courses shall be through home assignment which includes model practical test with workbook designing algorithm, preparing source code, PL/SQL coding for 25 marks.
- Student should submit assignment for theory and practicalcourses of everycourse and semester.

Division of Internal Marks (Assignment)

Theory		Practical	
Assignment	**Marks**	**Assignment**	**Marks**
Class Test, Long and short answer questions, Workbook, case studies,quiz, Multiple Choice Questions(MCQ)	25	Model Practical Test : Algorithm Design,System design diagrams,Workbook for preparing source code, PL/SQL coding , results	25
TOTAL	**25**	**TOTAL**	**25**

End Semester Examination (ESE)

The university end Semester Examinations shall be of three hours duration with maximum of 75 Marks for both theory and practical courses.

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f.3.1 Minimum for a pass:

To pass in each course, a candidate is required to secure 40% marks in the End Semester examination and 40% marks in the aggregate (marks in End Semester Examination + marks in Internal Assessment).

The students who does not secure required minimum marks for pass in a course(s) shall be required to reappear and pass the same in the subsequent examination,

f.3.2 Question Paper Pattern - Theory

The end semester examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

All the units Should be covered in each Part

Part – A (10 x 2 Marks: 20 Marks) Answer all questions
Part – B (5 x 5 Marks: 25 Marks) Answer all questions choosing either (a) or (b)
Part – C (3 x 10 Marks: 30 Marks) (Answer any 3 out of 5 questions)

End Semester Examination (ESE) - Practical

Students are required to prepare a separate lab record for each lab course. The practical counsellor should duly sign this lab record after each session.

Students shall prepare practical record note book which includes aim, algorithm, source code, input, expected output and result of the experiment and submit during end semester practical examination.

Division of marks in ESE – Practical (Maximum 75 marks)

The end semester practical examination will be conducted in the duration of 3 Hours and maximum of 75 Marks.

Practical details	**Max. Marks**
Algorithm / Flowchart	10
Source Code	20
Debugging	10
Execution	10
Results	10
Viva-Voce	5
Record	10
Total	**75**

f.3.3 Procedure for Completing the Course:

A student shall be permitted to continue the programme from I to II semester irrespective of failure(s) in the courses of the earlier semesters. The candidate will qualify for the PG Diploma in Artificial Intelligence and Data Science only if he/she passes all the (including arrears) courses with in a period of Two years from the date of admission.

f.3.4 Results and Classification:

Results will be declared at the end of each semester of the University examination and the marks/grade obtained by the candidate will be forwarded to them by the Controller of Examinations, Madhya Pradesh Bhoj Open University.

f.3.4.1 Marks and grades

The following table gives the marks, grade points, letter, grades and classification to indicate the performance of the candidate.

Range of Marks	Grade Points	Letter Grade	Description
96-100	10.00	S+	First class – Exemplary
91-95	9.5	S	
86-90	9.0	D++	First class – Distinction
81-85	8.5	D+	
76-80	8.0	D	
71-75	7.5	A++	First Class
66-70	7.0	A+	
61-65	6.5	A	
56-60	6.0	B	Second Class
50-55	5.5	C	
Below 50	0.00	F	Fail
ABSENT	0.00	AAA	Absent

For a semester

Grade Point Average[GPA] = $\sum C_i G_i / \sum C_i$

GPA = Sum of the multiplication of Grade points by the credit of the courses
Sum of the credit of the courses in the semester
= Sum of [Credit earned x Grade Points]
Sum of the credits earned in the semester

For the entire programme

Cumulative Grade Point Average [CGPA] = $\sum_n \sum_i C_{ni} G_{ni} / \sum_n \sum_i C_{ni}$

C_i - Credits earned for the course i in any semester G_i – Grade Point earned for course i in any semester

n - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters (programme) in the case of CGPA.

CGPA	Grade	Classification of Final Result
9.6 – 10.00	S+	First class – Exemplary*
9.1–9.5	S	
8.6–9.0	D++	First class with Distinction*
8.1–8.5	D+	
7.6–8.0	D	
7.1–7.5	A++	First Class
6.6–7.0	A+	
6.1–6.5	A	
5.6–6.0	B+	Second Class
5.0– 5.5	C	
Below 5.0	U	Reappear

* The candidates who have passed in the first appearance and within the prescribed semester

f.4 Fees Structure

Fee Particulars	Rs.
Admission Processing Fees	300
Course Fees	9,000
Total Fees	**9300**

The above mentioned fees structure is exclusive of examination fees.

(g)Requirement of the laboratory support and library resources

g.1 Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

g.2 Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for

learner's reference purpose only.

(h) Cost estimate of the programme and the provisions:

Expense details	Amount in (Rs.) Approx.
Programme development (Single time Investment)	5,00,000/-
Programme delivery (per year)	4,00,000/-
Programme maintenance (per year)	2,00,000/-

(i) Quality assurance mechanism and expected programme outcomes:

i.1 University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

i.2 University's Vision and Mission

(j) Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

i.3 University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

i.4 Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delight through Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

i.5 Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

i.6. Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

SYLLABUS

CLSP-101-Paper -I : Company Law
Max. Marks: 100) Min. Marks: 40
The Companies Act, 1956

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CLSP-102-Paper -II : Company Secretarial Practice

Max. Marks: 100 Min. Marks: 40
Appointment, Powers, duties, responsibilities and functions of Company Secretary. Holding of Board and General Meetings, provisions and procedure and other post-meeting formalities including writing of minutes; specimen notices and resolutions.Filing of various forms and returns with Registrar of Companies,
Creation/Modification/Satisfaction of Charges and Registration thereof.
Procedure for incorporation of private/public limited companies, commencement of business; issue of certificates of incorporation and commencement of business; specimen resolutions. Procedure for alterations in Memorandum and Articles of Association of a company, specimen resolution thereof. Allotment/Change in Share Capital and Transfer and Transmission, Procedure for allotment, consolidation/sub- division of shares, conversion of shares into stock/warrants, cancellation of shares, transfer/transmission of shares, dematerialization of shares, issue of share certificates, forfeiture of shares; checklists and specimen resolutions.
Preparation of Annual Reports – Balance sheet, profit and loss account/income and expenditure statement, auditor's report, director's report, statement on corporate governance, directors' responsibility statement, compliance certificate, chairman's statement. Declaration and Payment of Dividend – Procedure for ascertainment, declaration and payment of dividend – interim and final; transfer of unpaid/unclaimed dividend to Investor Education and Protection Fund; specimen resolutions. Maintenance of Statutory Books/Registers and Filing of Returns

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CLSP-103-Paper- III : Business Regulatory Framework-I

Max. Marks: 100 Min. Marks: 40

- Law of Contract Act
- Sale of Goods Act
- Negotiable Instruments Act
- Arbitration and Reconciliation Act
- Stamps and Registration Act

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CLSP-104-Paper -IV : Business Regulatory Framework-II

Max. Marks: 100 Min. Marks: 40

- Income Tax (Only upto heads of Income)
- Central Excise
- Sales Tax / V A T
- Arbitration and Reconciliation Act
- Service Tax

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CLSP-105-Paper -V : Business Organisation, Human Resource Management &Computer Awareness

Max. Marks: 100 Min. Marks: 40

Part – A – Business Organisation & Human Resource Management Management – Meaning, Definition, Process and Functions of Management,Planning, Organisation, Direction and Control.

Human Resource Planning – forecasts – demand analysis; quantitative and qualitative aspects of human resource planning; job analysis and job description.

Human Resource Management including Human Resource Planning, recruitment, section, induction and placement, training and development, dismissal, staff welfare and grievances, union negotiations and their functions, profits, sharing and incentive plans.

Personal records, job evaluation and merit rating, interviewing, staff and linefunctions, retirement benefits such as provident fund, superannuating schemes etc. Budgetarycontrol, inventory control, insurance and investment.
An overview of Law relating to – factories; industrial disputes/relations; contractlabour (regulation and abolition); employee's State insurance; employees' provident funds;payment of bonus; workmen's compensation; recruitment and related aspects; minimum wages and payment of wages; gratuity and trade unions.

Part – B – Computer Awareness :

Basic knowledge of working in an computerised environment, working knowledgeof commonly used software such as MS-Word, Excel, Power Point and accounting software.

***

CLSP-106-Paper -VI : Accountancy & Financial Management

Max. Marks: 100 Min. Marks: 40

Introduction of accounting, double entry book keeping, accounting cycle leading to preparation of final accounts with simple adjustments, Accounting for inventories, receivable, fixed assets, preparation of financial statements – trial balance, profit andloss account and balance sheet.
Company accounts, accounting for shares and debentures, devisable profits,schedules VI of Companies Act.
Introduction of accounting for amalgamation, and consolidated accounts of holdingand subsidiary company.
Introduction to cost accountancy, basic idea of elements of cost, cost-volume-profitanalysis and budgetary control.
Introduction to financial management, time value of money, leverages, cost ofcapital, management of working capital, project finance.

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PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

MASTER OF BUSINESS ADMINISTRATION

MATERIAL MANAGEMENT

(M.B.A. MM -MM)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.B.A. MM

Introduction :

M.B.A. MM (Master of Business Administration) is a graduate-level program that provides advanced knowledge and skills in business and management. The M.B.A. MM program is designed to prepare students for leadership roles in various industries and organizations.

ODL (Open and Distance Learning) is a mode of education that allows students to study at their own pace and convenience, without the need to attend classes in a physical classroom. ODL mode of education typically makes use of technology such as online learning platforms, video conferencing, and other digital tools to deliver course content and enable interaction between students and instructors.

M.B.A. MM ODL programs combine the flexibility of distance learning with the rigor and quality of a traditional M.B.A. MM program. M.B.A. MM ODL programs allow students to access course materials and complete assignments and exams from anywhere, at any time, and on any device with an internet connection. This makes the program more accessible to students who are working or have other commitments that may make attending a traditional classroom-based program difficult.

M.B.A. MM ODL programs typically cover core business topics such as finance, accounting, marketing, human resources, and operations management. The program may also offer specializations in areas such as entrepreneurship, international business, healthcare management, and information technology.

One of the advantages of M.B.A. MM ODL programs is that they allow students to customize their learning experience based on their specific interests and career goals. Students can choose to take courses and modules that are relevant to their field or industry and can complete the program at their own pace, allowing them to balance their studies with other commitments.

Overall, M.B.A. MM ODL programs offer a flexible and convenient option for students who want to earn an M.B.A. MM degree while balancing their work and personal life. The quality of the program is ensured through the use of modern technology, qualified faculty, and effective quality assurance mechanisms.

(i) (a) Programme's Mission: The mission of an M.B.A. MM program is to provide students with advanced knowledge and skills in business and management that will enable them to become effective leaders and decision-makers in various industries and organizations. The M.B.A. MM program is designed to equip students with the necessary tools and perspectives to address complex business challenges and to make strategic decisions that drive organizational success.

- The specific mission of an M.B.A. MM program may vary depending on the institution and the program's focus. However, some common objectives of an M.B.A. MM program include:

- Developing leadership skills: M.B.A. MM programs aim to develop students' leadership skills by exposing them to real-world business scenarios and providing opportunities for them to practice decision-making and problem-solving.
- Building a strong foundation in business fundamentals: M.B.A. MM programs provide a comprehensive understanding of business fundamentals such as finance, marketing, accounting, operations management, and strategy.
- Enhancing critical thinking and analytical skills: M.B.A. MM programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Fostering an entrepreneurial mindset: M.B.A. MM programs aim to foster an entrepreneurial mindset by encouraging students to think creatively, identify business opportunities, and take calculated risks.
- Cultivating ethical and socially responsible business practices: M.B.A. MM programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the mission of an M.B.A. MM program is to produce graduates who are equipped with the knowledge, skills, and perspectives to make a positive impact in their chosen field and contribute to the success of the organizations they serve.

(b) Objectives:

The objectives of an M.B.A. MM (Master of Business Administration) program are to provide students with advanced knowledge and skills in business and management that will enable them to become effective leaders and decision-makers in various industries and organizations. Some specific objectives of an M.B.A. MM program may include:

- Developing business acumen: M.B.A. MM programs aim to develop students' understanding of various aspects of business, such as finance, marketing, accounting, operations, and strategy.
- Enhancing leadership and management skills: M.B.A. MM programs aim to develop students' leadership and management skills by exposing them to real-world business scenarios and providing opportunities to practice decision-making and problem-solving.
- Fostering critical thinking and analytical skills: M.B.A. MM programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Providing global business perspectives: M.B.A. MM programs aim to provide students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world.
- Encouraging innovation and entrepreneurship: M.B.A. MM programs aim to encourage students to think creatively, identify business opportunities, and take calculated risks by providing them with a framework for entrepreneurship.

- Cultivating ethical and socially responsible business practices: M.B.A. MM programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the objectives of an M.B.A. MM program are to provide students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment. The program aims to produce graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

(ii) Relevance of the Programme with HEI's Mission and Goals: The relevance of an M.B.A. MM program with a Higher Education Institution's (HEI) mission and goals depends on the specific goals of the institution. However, in general, an M.B.A. MM program aligns with the mission and goals of HEIs in several ways:

Developing skilled professionals: An M.B.A. MM program provides students with advanced knowledge and skills in business and management that enable them to become effective leaders and decision-makers in various industries and organizations. This aligns with HEI's goal of developing skilled professionals who can make a positive impact in their respective fields.

Fostering entrepreneurship and innovation: An M.B.A. MM program encourages students to think creatively, identify business opportunities, and take calculated risks, which aligns with HEI's goal of fostering entrepreneurship and innovation.

Promoting ethical and socially responsible business practices: An M.B.A. MM program cultivates ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions, which aligns with HEI's goal of promoting ethical and socially responsible practices.

Providing global perspectives: An M.B.A. MM program provides students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world, which aligns with HEI's goal of providing a diverse and international education.

Advancing research and knowledge: An M.B.A. MM program contributes to the advancement of research and knowledge in the field of business and management by producing graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

Overall, an M.B.A. MM program aligns with HEI's mission and goals by providing students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment and by contributing to the advancement of research and knowledge in the field of business and management.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an M.B.A. MM (Master of Business Administration) program can vary depending on the specific program and institution. However, in general, the M.B.A. MM program is designed for individuals who have completed a bachelor's degree and who seek to advance their knowledge and skills in business and management.

The target group for an M.B.A. MM program typically includes:

Recent graduates: Graduates who have recently completed their undergraduate degrees and are seeking to gain advanced knowledge and skills in business and management to enhance their career prospects.

Early to mid-career professionals: Professionals who have been working for a few years and seek to gain a competitive edge in their careers by enhancing their leadership and management skills.

Entrepreneurs: Individuals who have started their own business or seek to start their own business and want to gain knowledge and skills in various aspects of business, such as finance, marketing, and operations.

Career changers: Individuals who are seeking to make a career change and move into the field of business and management.

International students: Individuals from around the world who seek to gain a global perspective on business and management and enhance their career prospects.

Overall, the target group for an M.B.A. MM program includes individuals who are seeking to enhance their career prospects, gain advanced knowledge and skills in business and management, and develop as leaders and decision-makers in their respective fields.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

An M.B.A. MM program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competencies. The ODL mode allows learners to access learning materials and resources from anywhere, at any time, and at their own pace. This makes it a flexible and convenient mode of learning, especially for working professionals who may not have the time or resources to attend a traditional on-campus program.

Some of the ways in which an M.B.A. MM program can be appropriately conducted in the ODL mode include:

Online course materials: M.B.A. MM programs in the ODL mode typically provide online access to course materials, including lectures, readings, and assignments. This allows learners to access the materials from anywhere, at any time, and at their own pace.

Interactive learning: ODL M.B.A. MM programs may use a range of interactive learning technologies, such as video conferencing, discussion forums, and webinars, to facilitate communication and interaction between learners and instructors.

Flexibility: ODL M.B.A. MM programs allow learners to study at their own pace and on their own schedule, which makes it possible for working professionals to balance their work and personal commitments with their academic pursuits.

Assessment and feedback: ODL M.B.A. MM programs typically use a range of assessment methods, including assignments, quizzes, and exams, to evaluate learners' knowledge and skills. Instructors also provide feedback and support to learners through online channels.

Overall, the ODL mode can be an appropriate and effective way to acquire specific skills and competencies through an M.B.A. MM program, provided that the program is well-designed and supported by appropriate technologies and resources.

(v) Instructional Design: The M.B.A. MM programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

First			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Management Functions and Behaviour	4	100
2	Human Resource Management	4	100
3	Qunatitative Methods	4	100
4	Managerial Economics	4	100
5	Accounting and Finance for Managers	4	100
6	Information Technology	4	100
Total		**24**	

Second			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Strategic Management	4	100
2	International Trade	4	100
3	Operation Management	4	100
4	Purchasing Management	4	100
5	Inventory Management	4	100
6	Research Methodology	4	100
Total		**24**	

Third			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Packing and Distribution Management	4	100
2	Advance Purchasing Management	4	100
3	Project Management	4	100
4	Total Quality Management	4	100
5	Logistics Management	4	100
6	Project	4	100
Total		**24**	

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services

such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.B.A. MM programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.B.A. MM programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree from a recognised university.

Fee Structure: M.B.A. MM Previous & M.B.A. MM Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried outthroughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of theconcerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods

2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree if he/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulated time:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Council and approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of

the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.B.A. MM	10,00000/-	5,00000/-	15,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are important aspects of any educational program, including M.B.A. MM. Here are some quality assurance mechanisms and expected program outcomes of M.B.A. MM:

Quality assurance mechanisms are critical in ensuring that an M.B.A. MM program delivers on its expected outcomes and meets the needs of learners and the industry. The following are some of the quality assurance mechanisms that can be put in place for an M.B.A. MM program:

- Accreditation: M.B.A. MM programs can be accredited by recognized bodies to ensure that they meet certain standards of quality. Accreditation can also provide assurance to learners, employers, and other stakeholders that the program meets industry standards.
- Curriculum design and review: M.B.A. MM programs should have a well-designed and up-to-date curriculum that aligns with industry needs and trends. Regular curriculum reviews can ensure that the program remains relevant and up-to-date.

- Faculty qualifications and development: The faculty teaching in an M.B.A. MM program should have appropriate qualifications and experience in the field of business and management. Regular professional development opportunities can also ensure that faculty remain up-to-date with the latest developments in their field.
- Student support: M.B.A. MM programs should provide appropriate student support services, such as academic advising, career counseling, and access to resources such as libraries and technology.
- Assessment and evaluation: M.B.A. MM programs should use appropriate assessment methods to evaluate learners' knowledge and skills. Evaluation can also be used to gather feedback from learners and other stakeholders to improve the program.

Expected program outcomes for an M.B.A. MM program typically include:

- Mastery of business and management concepts and practices: Learners should demonstrate a deep understanding of the fundamental concepts and practices of business and management.
- Advanced critical thinking and problem-solving skills: M.B.A. MM learners should be able to apply advanced critical thinking and problem-solving skills to complex business problems.
- Effective communication and interpersonal skills: Learners should be able to communicate effectively in a range of business contexts and demonstrate strong interpersonal skills.
- Leadership and management skills: M.B.A. MM learners should demonstrate advanced leadership and management skills, including the ability to lead and manage teams and organizations.
- Ethical and socially responsible decision-making: Learners should demonstrate an understanding of ethical and socially responsible decision-making and be able to apply this knowledge in a range of business contexts.

(3) Quantitative Methods

UNIT I

- **QT – Introduction** –Quantitative decision- making-Function and progression-Basic calculus and applications-Matrix algebra and Application

- **Collection of data** –Presentation of Data- Measures of Central Tendency – Mean, Median, Mode. Measure of variations and Skewness

UNIT II

- **Probability** – definitions – addition and multiplication Rules (only statements) – simple business application problems – probability distribution – expected value concept – theoretical probability distributions – Binomial, Poison and Normal

- **Decision Theory :** Decision Making Environments, Decision Making under Uncertainty (Maximax, Maximin, Equally Likely, Hurwicz criterion, Mini Max Regret) and risk (expected proft/loss), Using Continuous Distributions Marginal Analysis, Utility as a Decision Criterion, Decision Tree Analysis.

- **Linear Programming:** Formulating Linear Programming Problems-its structure and variables, Nature of feasible, basic and optimal solutions. Solution of LP Problem through graphic, Simplex method.

UNIT III

- **Mathematical Models** – deterministic and probabilistic – simple business examples – Linear Programming – formulation –graphical solution – simplex – solution.
- **Transportation model** – Initial Basic Feasible solutions – optimum solution for non – degeneracy and degeneracy model – Trans-shipment Model – Assignment Model – Travelling Salesmen problem.

UNIT IV

Sampling and Sampling Distributions : Population and Samples, Parameters and Statistics, Types of Sampling:Simple Random, Stratified, Systematic and Cluster Sampling, Sampling Distributions, Standard Errors, Sampling from Normal and Non-normal Populations, Sampling methods, Testing of hypothesis,Chi-Square Tests

UNIT V

Time Series and Forecasting : Business forecasting, Correlations and regressions analysis, Time series analysis ,Variations in Time Series, Trend Analysis-fitting linear and second degree trends, Cyclic Variation, Seasonal Variation (Computing using Ratio to Trend Method), Irregular Variation.

(2) Human Resource Management

UNIT I

- **Human Resource Philosophy** – Changing environments of HRM – Strategic human resource management – Using HRM to attain competitive advantage
- **Concept and Functions of HRM**
- **Structuring HRM**-Trends in HRM – Organisation of HR departments – Line and staff functions –Role of HR Managers.

UNIT II

- **Job analysis** : Methods - IT and computerised skill inventory - Writing job specification - HR and the responsive organisation. Job Design,HRP
- **Attracting the Talent-Recruitment,Selection and Outsourcing** : Employment planning and forecasting -Building employee commitment : Promotion from within - Sources, Developing and Using application forms - IT and recruiting on the internet. Socialization, mobility and Separation.

UNIT III

- **Human resource development**-Human resource development system. Training mentoring and performance coaching, building roles and teams.
- **Performance appraisal: Methods** –Performance planning and review- Problem and solutions - MBO approach – The appraisal interviews - Performance appraisal in practice, Competency Mapping, Potential Appraisal-Assessment centers.
- **Managing careers**: Career and succession planning - Managing promotions and transfers.

UNIT IV

- **Compensation and reward management**- Basics of compensation - factors determining pay rate –laws covering wages-Compensation strategy ,structure and composition-Current trends in compensation- Reward management
- **Pay for performance and Financial incentives** : Money and motivation - incentives for operations employees and executives - Organisation wideincentive plans - Practices in Indian organisations.
- **Benefits and services** : Statutory benefits - non-statutory (voluntary) benefits – laws covering benefits-Insurance benefits - retirement benefits and other welfare measures to build employee commitment.

UNIT V

- **Industrial relation and collective bargaining** : Trade unions - Collective bargaining - future of trade unionism.Industrial democracy Discipline administration – grievances handling - managing dismissals and separation.
- **Labour Welfare** : laws covering labour welfare ,Importance & Implications of labour legislations – Employee health - Auditing HR functions. Future of HRM function.

1.Management Functions and Behaviour

Unit I

- **Management** –Management Defined, Components of Management . Features of Management, Nature of Management, Evolution of management thoughts, Management is the art of muddling through situations. significance of management in today dynamic environment.
- **Functions of Management**-The Nature and Purpose of Planning - Objectives - Strategies, Policies and Planning Premises.
- **Role of a Manager**-Who are effective managers? Tasks and responsibilities of a professional manager, Management system and processes. Managerial Skills

Unit II

- **Decision Making** -Organisational context of decisions, Importance of Decision Making, Programmed and non-programmed decisions, Decision Making - Global Planning Decision making models Decision making techniques and processes, . MBO, Dynamics of Decision-making.
- **The Nature of Organizing** - Organizational Structure : Departmentation - Line/Staff Authority and Decentralization - Effective Organizing and Organizational Culture - Global Organizing. Co-ordination functions in Organisation – Managerial Ethos-Human Factors and Motivation - Leadership - Committees and group Decision Making - Communication –Delegation and Interdepartmental Coornination

Unit III

- **Global Leading**.-The System and Process of Controlling - Control Techniques and Information Technology - Global Controlling and Global Challenges Direction Function –Significance.
- **Organisational Behaviour** : management functions and relevance to Organisation Behaviour. Organizational Behaviour responses to Global and Cultural diversity.

Unit IV

- **The System and Process of Controlling** - Control Techniques and Information Technology - Global Controlling and Global Challenges – Direction Function Significance.Stress - Nature, sources, Effects, influence of personality, managing stress- Conflict - Management, Levels, Sources, bases, conflict resolution strategies, negotiation. Foundations of group behaviour : team decision making. Issues in Managing teams.

Unit V

- **Organisational change** - Managing planned change. Resistance to change - Approaches to managing organisational change - Organisational Development - values - interventions, change management-
- **Organisational culture** -Dynamics, role and types of culture and corporate

(4) Managerial Economics

UNIT-I

- **INTRODUCTION OF MANAGERIAL ECONOMICS :** Nature and scope of Managerial Economics, Role and responsibilities of Managerial economists, Importance of Managerial Economics.
- **The Firm :** The Economic Goal of the Firm and Optimal decision -making, Stakeholders, Objectives and Decision Issues.
- **Basic Techniques in Managerial Economics :** Opportunity Cost Principle, Marginal / Incremental Principle, Time Preference Principle, Discounting Principle and Equi-Marginal Principle.

UNIT-II

Demand Concepts and Analysis: Individual Demand, Market Demand, Kinds of Demand, Determinants of Demand, Demand Functions, Demand Schedule and Law of Demand.

Elasticity of Demand: Concept, Determinants and Measurement of Price Elasticity of Demand, Income and Cross, Elasticity of Demand, Relationship between Price Elasticity, AR and MR. Importance of Elasticity of Demand.

Demand Estimation and Demand Forecasting: Concept and Methods of Demand Estimation – Market Experiment Method, Survey of Consumer's Intentions and Regression Analysis. Concept, Rational and Scope of Demand Forecasting, Pre-requisites of a good forecast, Method of Demand Forecasting – Expert Opinion, Opinion Polls and Market Research, Trend Projections and Composite and Diffusion Indices.

UNIT-III

Production function: Concept and Types of Production Function, Returns to factor and Returns to Scale, Law of variable Proportions. Least Cost Factor Combination for a given output, Estimation of Production Function.

Cost Concepts and Analysis I : Cost concepts, Short run and Long run Cost Curves. Relationships amongst various costs.

Cost Concepts and AnalysisII: Economies of Scale and Scope. Break – Even Analysis and Plant sizing. Estimation of Cost Functions.

UNIT-IV

- **Market Structure and barriers to entry**
- **Perfect Competition:** Characteristics, Equilibrium Price, Profit Maximizing output in Short Run and Long Run
- **Monopoly :** Characteristics, Equilibrium Price, Profit Maximizing output in Short Run and Long Run , Price Discrimination – Types, Conditions. Price Output Determination under Discriminating Monopoly.
- **Imperfect Competition :** Imperfect Completion, Demand Curve, Monopolistic Completion, Product Differentiation– Types of Product Differentiation – Oligopoly, Kinked Demand Curve, Cartel Formation, Market-sharing Cartels.

Unit-V

- **Pricing Strategies:** Cost-plus or Markup Pricing, Markup Pricing and profit Maximization, Price Discrimination ,Cyclical pricing, Multiple-Unit Pricing

(5) Accounting and Finance for Managers

UNIT I

Accounting - Definition – Functions-Accounting Principles - Concepts and Conventions – Accounting Information and its Applications-Trial Balance – Final Accounts (Problems) – Depreciation Methods-Straight line method, Written down value method.

UNIT II

Financial Statement Analysis - Objectives - Techniques of Financial Statement Analysis: Accounting Ratios: construction of balance sheet using ratios (problems)- Dupont analysis.-Construction and Analysis of Profit and Loss Account Fund Flow Statement - Statement of Changes in Working Capital - Preparation of Fund Flow Statement - Cash Flow Statement Analysis- Distinction between Fund Flow and Cash Flow Statement.

UNIT III

Understanding and classifying costs -Cost Accounting - Meaning - Distinction between Financial Accounting and Cost Accounting —Cost Terminologies- Elements of Cost

Budget, Budgeting, and Budgeting Control - Types of Budgets - Preparation of Flexible and fixed Budgets, master budget and Cash Budget - Problems -Zero Base Budgeting.

Absorption and Marginal Costing - Definition - distinction between marginal costing and absorption costing - Break even point Analysis - Contribution, p/v Ratio, margin of safety

UNIT IV

Objectives and functions of Financial Management - Role of Financial Management in the organisation - Risk-Return relationship- Time value of money concepts -Features of Capital market development in India - Role of SEBI in Capital Issues.

Capital Budgeting - methods of appraisal - Conflict in criteria for evaluation - Capital Rationing - Problems - Risk analysis in Capital Budgeting.

UNIT V

Working Capital Management - Definition and Objectives - Working capital Structure - Dividend Decisions.

(6) Information Technology

UNIT-I

Information Technology

Basic Concepts : Understanding Data and Information, System Concepts, Open System, Closed System, Business as a System, what is Information System, Classification of IS in organization, Attributes of Information Quality.

Computer & Internet: Desktop computers, Block diagram of a computer, Input and output devices, memory and storage devices, different ports and its uses, Different type of printers. Software: OS, Windows OS, Application software. Networking, different LAN and WAN connections, connecting to a network, testing connection, Internet, IP address, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Nam e, Internet Services Providers, Internet Security, Internet Requirements, Web Search Engine, Net Surfing. Internet

Windows XP: Windows concepts, Features, Windows Structure, Desktop, Taskbar, Start Menu, My Computer, Recycle Bin, Windows Accessories- Calculator, Notepad, Paint, WordPad, Character Map, Windows Explorer, Entertainment

Unit *II*

Information System I

In MIS Perspectives, Economics of Information Systems, Managerial Information and control systems, information system security.

Information System II

Information Systems and Functional Area Applications

Transaction Processing Systems-I: Human Resource and Marketing Management

Transaction Processing Systems-II: Operations and Financial Management . Integrated Applications.

Unit III

System analysis and computer languages-Building Information Systems.System Analysis and Design , Computer Programming and Languages

Unit IV

Support Systems for Management Decisions

Database Resource Management

Data Ware Housing and Data Mining

Tactical and Strategic Information Management: DSS and ESS

Intelligent Support Systems

Emerging Trends in IT

(7) Business Law

UNIT I

Contract Act: Meaning and Definition of Contract, Meaning and Definition of Agreement. Valid contract, Offer and acceptance, rules regarding revocation of offer and acceptance, Standard form contract and a new innovation to suit the needs and consideration and essential elements. Exception to the rule and no consideration no contract and privity of contract and consideration. Capacity to contract, Free consent and Coercion, undue influence, misrepresentation, fraud. Mistake and as to identity, as to subject matter, as to nature of promise. Legality of the object and void agreement, voidable agreement, agreements opposed to public policy. Discharge of contract and modes of discharge, by performance by impossibility, by agreement, by breach, Damages and Rules, remoteness of damages, measure of damages, liquidated damages and penalty, Quasi contract or certain relations resembling those created by contract Bailment and Duties of bailer & bailee, Law relating to agency-types of agency, agent's responsibility and rights

UNIT II

Companies Act, 1956: Company – meaning and Definition of Company-characteristics and kinds, Lifting the corporate veil, Registration & Incorporation. Memorandum of Association, Doctrine of Ultravires, Consequences of Ultravires transaction. Articles of Association. Rule of Constructive Notice, Doctrine of Indoor Management, Prospectus, Shares. Shareholder & Members. Directors. Position, appointment, removal, power & duties. Meeting. Majority powers & minority rights. Prevention of oppression and mis-management. Winding up. Winding up by court, Voluntary winding up, Winding up subject to supervision of court. Conduct of winding up

UNIT III

Partnership Act, 1932: Meaning and Definition of Partnership-Nature of partnership, Relation of partner and Inter se, Relation of partners to third parties, Incoming and outgoing partners. Dissolution of firm. Registration of firms.

(13) Research Methodology

Unit I

- **Introduction** – Definition of research, qualities of researcher, components of research problem, various steps in scientific research. Importance of research in decision making.
- **Types of Research** – Research design, survey research – Case study research, research experiment-kinds, control group method, observation method – Merits and demerits of research methods.
- **Research Hypothesis** – Research purposes, research hypotheses, defining research problem and formulation of hypothesis, experimental design.

Unit II

- **Data Collection** – Sources of data: primary data, secondary data; methods and techniques of data collection, data collection procedure – Design of questionnaire, questionnaire pre-testing and compilation of data - Merit and demerits.
- **Data Presentation** – Data processing- Analysis and interpretation of data –Multivariate analysis of data-Statistical Measures of central tendency, range, mean and standard deviation, graphical methods of data presentation, bar and column charts, pie-charts and ogives.- model building and decision making.

Unit III

- **Sampling** – Census method, sampling theory, random sampling, sampling design, sampling errors – Type -I Error, Type II Error, Attitude measurement and scales.
- **Hypothesis testing** – One sample & two sample Tests I Chi-Square test, association of attributes – students' 't' Test, 'z' test, Analysis of Variance (ANOVA) and 'F' test.

Unit IV

- **Introduction to Statistics** – Probability theories, conditional probability, distributions Poisson, binomial and properties of normal distribution.
- **Statistical Analysis** – Point and interval estimates, estimatation of means and proportions, co-efficient of variations – Index number, time series analysis, decision tree analysis.

Unit V

- **Research Report** – Structure and components of research report, types of report, substance of good research report, pictures and graphical presentation of research results, research abstracts.

(11) Purchasing Management

- Overview
- Purchasing Organizations
- Ethical Concepts in Purchase
- Make or Buy or Outsourcing
- Price and Pricing Impact
- Purchasing Cycle
- Vendor Analysis
- Negotiations
- Contracts / Purchase Orders
- Application of Computers in Purchasing

(12) Inventory Management

Unit 1

Inventory Management: Inventory concept; need for inventory; types of inventory, functions, use; Dependent and Independent Demand, Responsibility for inventory management.

Unit II

Strategic Inventory Management: Objectives and Importance of the inventory management function in reference to Profitability, Strategy, customer satisfaction and Competitive Advantage.

Unit III

Inventory Control Techniques: Inventory classification and its use in controlling inventory, Setup time and inventory control, safety stock determination considering service level. Strategies to increase Inventory Turns, Reduce throughput time, Reduce WIP, eliminate waste, and reduce inventory level in service and manufacturing organizations.

Unit IV

Inventory Models: Inventory models – Fixed Order Versus Fixed Interval systems – Developing Special Quantity Discount Models – Inventory Model for Manufactured Items – Economic Lot Size when Stock Replenishment is instantaneous – Non-instantaneous Replenishment Models – Inventory Models with uncertainty – Probabilistic Inventory Models – Models with Service Levels and Safety Stock.

Unit V

Material Requirement Planning Systems (MRP): Meaning, purpose and advantage of MRP, Data Requirements and Management – Files and Database Updating Inventory Records – Bill of Materials, types of BOM, Modular BOM, Master Production Schedules - meaning, objectives process. Managing MPS inventory records, lot sizing, process of MRP, and output of MRP. Introduction to MRPII systems. Using Distribution Resource Planning to manage inventories in multiple locations.

(9) International Trade

Unit-I

The Globalisation of the world Economy -The Changing Nature of International Trade. Differences in International Trade.

Unit: II

World Trade environment — Political Environment -Economic Environment - Legal Environment -The Determinants of Economic Development - States in Transition. Difference in Culture: Introduction - Social Structure - Religion - Language - Education - Culture and the Workplace - Cultural Change -Cross-Cultural Literacy - Culture and competitive Advantage. Risks in international Trade.

Unit:III

The Global Trade and Investment Environment -International trade theory : Introduction -An Overview of Trade Theory - Absolute Advantage - Comparative Advantage - Heckscher - Ohlin Theory - The New Trade Theory - National Competitive Advantages - Porter's Diamond

The Revised Case for Free Trade - Development of the Multilateral Trading System - WTO & development of World trade - Regional grouping of countries and its impact.

Unit: IV

Foreign Direct Investment: Introduction - Foreign Direct Investment in the World Economy - Horizontal Foreign Direct Investment - Vertical Foreign Direct Investment. Benefits and advantages to host and home countries.

The Global Monetary System -The Foreign Exchange Market: Introduction - The Function of the Foreign Exchange Market.

Unit: V

Strategies of International Trade - - Strategy and the Firm - Profiting from Global Expansion - Pressure for Cost Reductions and Local Responsiveness - Strategic Choice. Mode of Entry and Strategic Alliances: Introduction - Entry Modes - Selecting and Entry Mode - Strategic Alliances - Making Alliances Work – International Marketing Operations.Exporting, importing and counter trade- introduction - Export and Import Finance-Export assistance.

(8) Strategic Management

Unit 1

Strategic Management-Definition, nature scope and importance of strategy; Strategic decision-making. Process of strategy Strategic management and levels at which strategy operates. Roles of strategists.

Unit II

- ***Internal Analysis:*** The internal environment, organisational capabilities in various functional areas and Strategic Advantage Profile. Value chain analysis, Financial and non financial analysis, historical Analysis. Industry standards and benchmarking, Balanced scorecard and key factor rating). Identification of Critical Success Factors (CSF).
- ***Environmental Analysis:*** Concept of environment, components of environment (Economic, legal, social, political and technological). Environmental scanning techniques ETOP, QUEST and SWOT (TOWS).

Unit III

- ***Corporate level strategies:*** Stability, Expansion, Retrenchment and Combination strategies. Corporate restructuring. Concept of Synergy.
- ***Business level strategies:*** Porter's framework of competitive strategies: Conditions, risks and benefits of Cost leadership, Differentiation and Focus strategies.

Unit IV

Strategy Implementation and Control: Resource allocation. Organization structure and systems in strategy implementation. Values: Ethics and Social responsibility Organisational systems and Techniques of strategic evaluation. Various approach to implementation of strategy - 7S model - Strategic control process - Du Pont's control model and other Quantitative and Qualitative tools - Balanced score card - M.Porter's approach for Globalization - Future of Strategic Management.

(10) Operation Management

Unit I

Production /Operations Management – Meaning – Importance-historical contributions systems View of OM- Functions Of OM- Efficiency and effectiveness- Types Of Production Systems.

UNIT II

Forecasting-Need and Importance, Qualitative and Quantitative methods of forecasting.

Unit III

Production Planning and control – meaning – functions-aggregate planning – master production schedule(MPS) – Material Requirement Planning(MRP) – BOM – Capacity Requirement planning (CRP)- Techniques – Problems in MRP and CRP – an introduction to MRPII and ERP –Facilities Planning-Work system Design-Managing Information for Production system-Scheduling and Sequencing .

UNIT IV

Materials Management- Functions –Dependent and Independent Demand System – material planning and budgeting – Value Analysis-Purchase functions and procedure – inventory control – types of inventory – safety stock-Order point – service level – inventory control systems – perpetual – periodic – JIT – KANBAN

UNIT V

Total quality Management concept – Statistical Quality control for Acceptance Sampling and Process Control – Concept of O.C.C. Curve – Concept of Type I and Type II error – Quality movement – Quality circles – ISO Quality certifications and types – Quality Assurance – Six Sigma Concept.

UNIT VI

Emerging Issues in Planning /Operations Management: Total Productive Maintenance, Advanced manufacturing system, Computers in planning /operations management.

(15) Advance Purchasing Management

Unit I

- Definition-Scope and objective-Importance of Purchasing and its impact on competitiveness.
- Purchasing Organizations
- Ethical and professional standards

Unit II

- Make or Buy or Outsourcing
- Pricing Impact
- Purchasing Cycle

Unit III

- Vendor Analysis
- Negotiations
- Contracts / Purchase Orders

Unit IV

- Purchasing practice by class of materials
- Public buying

Unit V

- Purchasing & forecasting techniques
- Purchasing strategies
- Evaluation of purchasing functions
- Modern purchase Practices

(14) Packing and Distribution Management

Unit I

Introduction - Definition, principles, role and importance of packaging.

History- Various types of packaging, historical development of packaging.

Unit II

Packing material –Various materials and forms, Packaging design, green packaging.

Physical distribution –Definition and need for physical distribution, market forces.

Unit III

Channels of distribution-Channel functions, Design of distribution channel network.

Channel management-Types, roles and evaluation of channel members

Unit IV

Transportation-Scope and methods of transportation, multimodal transport.

Procurement for transportation services-traffic regulations, transport laws.

Unit V

Distribution audit-Establishment of management parameters, monitoring.

Organization for distribution – Definition and need of distribution organization.

(18) Logistics Management

Unit I

Introduction to logistics management- Definition, scope, functions, objectives - Integrated logistics management, role of logistics in the Supply chain - Logistics & customer service. Role of logistics in competitive strategy. Logistics organization & performance measurement, ERP – SAP – ORACLE

Unit II

Inventory planning, inventory costs, classifying inventory. Nature & importance of warehousing, types of warehouses, warehousing functions. warehouse layout & design. Material handling- objectives, guidelines & principles, selection of material handling equipments. Packaging-role of packaging, packaging materials, consumer & industrial packaging, material handling efficiency.

Unit III

Transportation- role of transportation in logistics, transportation selection decision, basic modes of transportation- Rail, Road, Water, Air, Pipeline- characteristics of different modes- transport economics - Inter modal operations.

Unit IV

Containerization-concept, types, benefits, Types of carriers- indirect & special carriers. Role of intermediaries- shipping agents, brokers- freight management- route planning Role of ports, ICDs, CONCOR - Global shipping options.

Unit V

Reverse logistics- scope, design, e-logistics- logistics information system-application of IT in logistics- automatic identification technologies- bar coding, RFID, Logistics outsourcing- 3PL & 4PL, Global logistics- operational & strategic issues.

(16) Project Management

UNIT I

Project Formation-Overview – Concept of a Project – Categories of Project - Project life cycle- Definition of project management - The project as a conversion Process - project environment- complexity of projects - the relationship between project Management and line management - current issues in project management- system approach to project management - Roles and responsibilities of project manager.

UNIT II

Project planning and scheduling- project planning as a value adding activity - process of project planning - managing the planning process - communicating project plans - dealing with increased complexity through net work diagrams - Analyzing the network- Critical Path Analysis - Activity on Nodes diagramming- Dealing with the uncertainty Programme Evaluation and Review Technique- Computerized Project Management - planning with standards.

UNIT III

Project feasibility study- Market Feasibility- Technical Feasibility-Financial Feasibility Economic Feasibility-Critical Success factors- Demand forecasting techniques

UNIT IV

Project implementation and evaluation - stages - Bottlenecks in project implementation - Guidelines for effective implementation - Management techniques for project management - project monitoring - essentials - roles - tools and techniques Project management performance performance indicators performance improvement - project management environment - management reporting - report designing - project evaluation - project review.

(17) Total Quality Management

UNIT-I: ASPECTS OF QUALITY

Quality mission, policy and objectives; concepts, evolution and determinants of quality; interpretation and process of quality audits; cost of quality and economics of quality. Contribution of quality gurus -Shewhart, Juran, Figenbaum, Ishikawa, Deming and Taguchi; SPC, SQC, CWQC, TPM, TQC.

UNIT – II: TOTAL QUALITY MANAGEMENT

Definition, underlying concepts, implementation and measurement of TQM, Internal Customer-Supplier relationship, QFD, Quality Circles, Quality improvement teams, team work and motivation in TQM implementation, training and education, role of communication in implementing TQM, policy deployment. Quality culture and leadership.

UNIT – III: MANAGEMENT OF PROCESS-I

Processes in service organization and their control, simple seven tools of quality control: Check Sheet, Histogram, Scatter diagram, Process Mapping, Cause and Effect diagram, Pareto analysis. control charts and Advanced tools of quality.

UNIT-IV : MANAGEMENT OF PROCESS-II

SQC: Control Charts for variables - X, Xbar, and R charts and control charts for attributes-p, np, and c charts. Acceptance sampling plan and occurrence Vendor selection and vendor rating.

UNIT – V: MANAGEMENT OF QUALITY

Facets of quality planning, quality improvement methods, Kaizen, quality audits, medical audit, accreditation; nursing care standards, Six Sigma, JIT and NABL.

UNIT – VI: SYSTEMS APPROACH TO QUALITY

Introduction to ISO 2000, ISO 9000, ISO 14000 and ISO 18000.
Documentation of quality systems, quality manual, procedure manuals, work instruction manuals and records for ISO 2000.- Bench Marking and Business Process Reengineering Definition, methodology and design, evaluation and analysis. Environmental Management system-Management system for safety and health.

UNIT – VII: SYSTEMS APPROACH TO QUALITY

Auditing and Certification, Awards and Certification.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

MASTER OF BUSINESS ADMINISTRATION

(M.B.A.)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.B.A.

Introduction :

MBA (Master of Business Administration) is a graduate-level program that provides advanced knowledge and skills in business and management. The MBA program is designed to prepare students for leadership roles in various industries and organizations.

ODL (Open and Distance Learning) is a mode of education that allows students to study at their own pace and convenience, without the need to attend classes in a physical classroom. ODL mode of education typically makes use of technology such as online learning platforms, video conferencing, and other digital tools to deliver course content and enable interaction between students and instructors.

MBA ODL programs combine the flexibility of distance learning with the rigor and quality of a traditional MBA program. MBA ODL programs allow students to access course materials and complete assignments and exams from anywhere, at any time, and on any device with an internet connection. This makes the program more accessible to students who are working or have other commitments that may make attending a traditional classroom-based program difficult.

MBA ODL programs typically cover core business topics such as finance, accounting, marketing, human resources, and operations management. The program may also offer specializations in areas such as entrepreneurship, international business, healthcare management, and information technology.

One of the advantages of MBA ODL programs is that they allow students to customize their learning experience based on their specific interests and career goals. Students can choose to take courses and modules that are relevant to their field or industry and can complete the program at their own pace, allowing them to balance their studies with other commitments.

Overall, MBA ODL programs offer a flexible and convenient option for students who want to earn an MBA degree while balancing their work and personal life. The quality of the program is ensured through the use of modern technology, qualified faculty, and effective quality assurance mechanisms.

(i) (a) Programme's Mission: The mission of an MBA program is to provide students with advanced knowledge and skills in business and management that will enable them to become effective leaders and decision-makers in various industries and organizations. The MBA program is designed to equip students with the necessary tools and perspectives to address complex business challenges and to make strategic decisions that drive organizational success.

- The specific mission of an MBA program may vary depending on the institution and the program's focus. However, some common objectives of an MBA program include:
- Developing leadership skills: MBA programs aim to develop students' leadership skills by exposing them to real-world business scenarios and providing opportunities for them to practice decision-making and problem-solving.
- Building a strong foundation in business fundamentals: MBA programs provide a comprehensive understanding of business fundamentals such as finance, marketing, accounting, operations management, and strategy.
- Enhancing critical thinking and analytical skills: MBA programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Fostering an entrepreneurial mindset: MBA programs aim to foster an entrepreneurial mindset by encouraging students to think creatively, identify business opportunities, and take calculated risks.
- Cultivating ethical and socially responsible business practices: MBA programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the mission of an MBA program is to produce graduates who are equipped with the knowledge, skills, and perspectives to make a positive impact in their chosen field and contribute to the success of the organizations they serve.

(b) Objectives:

The objectives of an MBA (Master of Business Administration) program are to provide students with advanced knowledge and skills in business and management that will enable them to become

effective leaders and decision-makers in various industries and organizations. Some specific objectives of an MBA program may include:

- Developing business acumen: MBA programs aim to develop students' understanding of various aspects of business, such as finance, marketing, accounting, operations, and strategy.
- Enhancing leadership and management skills: MBA programs aim to develop students' leadership and management skills by exposing them to real-world business scenarios and providing opportunities to practice decision-making and problem-solving.
- Fostering critical thinking and analytical skills: MBA programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Providing global business perspectives: MBA programs aim to provide students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world.
- Encouraging innovation and entrepreneurship: MBA programs aim to encourage students to think creatively, identify business opportunities, and take calculated risks by providing them with a framework for entrepreneurship.
- Cultivating ethical and socially responsible business practices: MBA programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the objectives of an MBA program are to provide students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment. The program aims to produce graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

(ii) Relevance of the Programme with HEI's Mission and Goals: The relevance of an MBA program with a Higher Education Institution's (HEI) mission and goals depends on the specific goals of the institution. However, in general, an MBA program aligns with the mission and goals of HEIs in several ways:

Developing skilled professionals: An MBA program provides students with advanced knowledge and skills in business and management that enable them to become effective leaders and decision-makers in various industries and organizations. This aligns with HEI's goal of developing skilled professionals who can make a positive impact in their respective fields.

Fostering entrepreneurship and innovation: An MBA program encourages students to think creatively, identify business opportunities, and take calculated risks, which aligns with HEI's goal of fostering entrepreneurship and innovation.

Promoting ethical and socially responsible business practices: An MBA program cultivates ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions, which aligns with HEI's goal of promoting ethical and socially responsible practices.

Providing global perspectives: An MBA program provides students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world, which aligns with HEI's goal of providing a diverse and international education.

Advancing research and knowledge: An MBA program contributes to the advancement of research and knowledge in the field of business and management by producing graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

Overall, an MBA program aligns with HEI's mission and goals by providing students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment and by contributing to the advancement of research and knowledge in the field of business and management.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an MBA (Master of Business Administration) program can vary depending on the specific program and institution. However, in general, the MBA program

is designed for individuals who have completed a bachelor's degree and who seek to advance their knowledge and skills in business and management.

The target group for an MBA program typically includes:

Recent graduates: Graduates who have recently completed their undergraduate degrees and are seeking to gain advanced knowledge and skills in business and management to enhance their career prospects.

Early to mid-career professionals: Professionals who have been working for a few years and seek to gain a competitive edge in their careers by enhancing their leadership and management skills.

Entrepreneurs: Individuals who have started their own business or seek to start their own business and want to gain knowledge and skills in various aspects of business, such as finance, marketing, and operations.

Career changers: Individuals who are seeking to make a career change and move into the field of business and management.

International students: Individuals from around the world who seek to gain a global perspective on business and management and enhance their career prospects.

Overall, the target group for an MBA program includes individuals who are seeking to enhance their career prospects, gain advanced knowledge and skills in business and management, and develop as leaders and decision-makers in their respective fields.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

An MBA program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competencies. The ODL mode allows learners to access learning materials and resources from anywhere, at any time, and at their own pace. This makes it a flexible

and convenient mode of learning, especially for working professionals who may not have the time or resources to attend a traditional on-campus program.

Some of the ways in which an MBA program can be appropriately conducted in the ODL mode include:

Online course materials: MBA programs in the ODL mode typically provide online access to course materials, including lectures, readings, and assignments. This allows learners to access the materials from anywhere, at any time, and at their own pace.

Interactive learning: ODL MBA programs may use a range of interactive learning technologies, such as video conferencing, discussion forums, and webinars, to facilitate communication and interaction between learners and instructors.

Flexibility: ODL MBA programs allow learners to study at their own pace and on their own schedule, which makes it possible for working professionals to balance their work and personal commitments with their academic pursuits.

Assessment and feedback: ODL MBA programs typically use a range of assessment methods, including assignments, quizzes, and exams, to evaluate learners' knowledge and skills. Instructors also provide feedback and support to learners through online channels.

Overall, the ODL mode can be an appropriate and effective way to acquire specific skills and competencies through an MBA program, provided that the program is well-designed and supported by appropriate technologies and resources.

(v) Instructional Design: The M.B.A. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

First Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Financial & Management Accounting	4	100
2	Business Ethics	4	100
3	Organizational Behaviour & Management Processes	4	100
4	Computer Application in Management	4	100
5	Business Environment	4	100
6	Research Methodology and Quantitative Techniques	4	100
Total		**24**	

Second Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Human Resource Management	4	100
2	Managerial Economics	4	100
3	Marketing Management	4	100
4	Production and Operation Management	4	100
5	International Business	4	100
6	Business Communication	4	100
Total		**24**	

Third Semester			
S. No.	**Name of Subject**	**Credits**	**Total**
1	Management Information System	4	100
2	Strategic Management	4	100
3	Total Quality Management	4	100
Candidates are required to Choose 3 Subjects from Major Group of study and 1 subject each from any two Minor Group of studies.			
Group – I {Management Studies - Marketing}			
4	Advertising Management	4	100
5	Marketing Communication	4	100
6	Marketing of Services	4	100
Group – II {Management Studies - Sales}			
4	Sales & Distribution Management	4	100
5	Marketing Planning & Control	4	100
6	Marketing Research	4	100
Group – III {Management Studies – Finance}			
4	Corporate Taxation Planning	4	100
5	Financial Engineering	4	100

6	Security Analysis & Portfolio Management	4	100
Group – IV {Management Studies – Human Resource Management}			
4	Management of Industrial Relations	4	100
5	Compensation Management	4	100
6	Human Resources Planning and Development	4	100
Group – V {Management Studies – Information Technology}			
4	Management Support System	4	100
5	Business Process Re-Engineering	4	100
6	System Analysis and Design	4	100
Group – VI {Management Studies – Environment Management & Auditing}			
4	Climate Change & Development	4	100
5	Environmental Assessment	4	100
6	Environmental Auditing & Management System	4	100
Group – VII {Management Studies – Project Monitoring & Evaluation}			
4	Project Administration	4	100
5	Project Assessment	4	100
6	Project Execution	4	100
Group – VIII {Management Studies – Project Management}			
4	Production & Operation Improvement	4	100
5	Production & Operation Strategy	4	100
6	Project Assessment	4	100
Group – IX {Management Studies – Organizational Development}			
4	Corporate Social Responsibility & Diversity in HRM	4	100
5	Employment Relations	4	100
6	Leadership	4	100
Total		**32**	

Fourth Semester			
S. No.	**Name of Subject**	**Credit**	**Total Marks**
1	Environmental Management	4	100
2	Financial Management	4	100
3	Project	4	100
Candidates are required to Choose 3 Subjects from Major Group of study same as Semester Third, and total 3 subjects from any two Minor Group of studies.			
Group – I {Management Studies – Marketing}			
4	Agricultural and Rural	4	100
5	MarketingConsumer Behaviour	4	100
6	Industrial Marketing	4	100
Group – II {Management Studies - Sales}			

4	Principles and Practice of Selling	4	100
5	Marketing Strategies and Advertisement	4	100
6	Marketing Communication	4	100
Group – III {Management Studies – Finance}			
4	Management of Financial Services	4	100
5	Corporate Restructuring	4	100
6	Global Financial Marketing	4	100
Group – IV {Management Studies – Human Resource Management}			
4	International Human Resource Management	4	100
5	Management of Training & Development	4	100
6	Organizational Change and Development	4	100

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional

pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.B.A. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.B.A. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree from a recognised university.

Fee Structure: M.B.A. Previous & M.B.A. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i"

registered and successfully completed by the student to the sum of Ci for all “i”. That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade “U” until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the

student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.
The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.B.A.	10,00000/-	5,00000/-	15,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are important aspects of any educational program, including M.B.A.. Here are some quality assurance mechanisms and expected program outcomes of M.B.A.:

Quality assurance mechanisms are critical in ensuring that an MBA program delivers on its expected outcomes and meets the needs of learners and the industry. The following are some of the quality assurance mechanisms that can be put in place for an MBA program:

- Accreditation: MBA programs can be accredited by recognized bodies to ensure that they meet certain standards of quality. Accreditation can also provide assurance to learners, employers, and other stakeholders that the program meets industry standards.

- Curriculum design and review: MBA programs should have a well-designed and up-to-date curriculum that aligns with industry needs and trends. Regular curriculum reviews can ensure that the program remains relevant and up-to-date.
- Faculty qualifications and development: The faculty teaching in an MBA program should have appropriate qualifications and experience in the field of business and management. Regular professional development opportunities can also ensure that faculty remain up-to-date with the latest developments in their field.
- Student support: MBA programs should provide appropriate student support services, such as academic advising, career counseling, and access to resources such as libraries and technology.
- Assessment and evaluation: MBA programs should use appropriate assessment methods to evaluate learners' knowledge and skills. Evaluation can also be used to gather feedback from learners and other stakeholders to improve the program.

Expected program outcomes for an MBA program typically include:

- Mastery of business and management concepts and practices: Learners should demonstrate a deep understanding of the fundamental concepts and practices of business and management.
- Advanced critical thinking and problem-solving skills: MBA learners should be able to apply advanced critical thinking and problem-solving skills to complex business problems.
- Effective communication and interpersonal skills: Learners should be able to communicate effectively in a range of business contexts and demonstrate strong interpersonal skills.
- Leadership and management skills: MBA learners should demonstrate advanced leadership and management skills, including the ability to lead and manage teams and organizations.
- Ethical and socially responsible decision-making: Learners should demonstrate an understanding of ethical and socially responsible decision-making and be able to apply this knowledge in a range of business contexts.

First Semester

First Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Financial & Management Accounting	4	100
2	Business Ethics	4	100
3	Organizational Behavior & Management Processes	4	100
4	Computer Application in Management	4	100
5	Business Environment	4	100
6	Research Methodology and Quantitative Techniques	4	100
Total		**24**	

Subject Name: FINANCIAL & MANAGEMENT ACCOUNTING

1. **Introduction:** Financial Objectives- Profit and Wealth Maximization, Finance Functions, Role of Finance Manager.
2. **Capitalization:** Basics of Capitalization, Estimation of Annual Net Earnings, CapitalizationRate, Overcapitalization, Undercapitalization.
3. **Capital Structure:** Principles of Capital Structure, Management, Factors Affecting Capital Structure.
4. **Capital Structure and Cost of Capital:** Concept of Cost of Capital- Importance, Calculation,Composite, Leverage, Theories of Capital Structure.
5. **Time Value of Money:** Compounding and Discounting Techniques, Present Value of Cash Flows, Techniques of Evaluation of Capital Expenditure Proposals.
6. **Sources of Working Capital:** Meaning and Concept of Working Capital, Optimum Working Capital, working of- Capital Cycle, Capital Forecasts, Capital

Management, Management Policies and Various Elements, Cash Management- Nature, Planning Aspect, Control Process, Models, Cash Budgets, Playing and Kinds of Floats.

Subject Name: BUSINESS ETHICS

Unit 1: BUSINESS ETHICS

Introduction – Meaning - Scope – Types of Ethics – Characteristics – Factors influencing Business Ethics – Importance of Business Ethics - Arguments for and against business ethics- Basics of business ethics - Corporate Social Responsibility – Issues of Management – Crisis

Management

Unit 2: PERSONAL ETHICS

Introduction – Meaning – Emotional Honesty – Virtue of humility – Promote happiness –

karma yoga – proactive – flexibility and purity of mind.

Unit 3: ETHICS IN MANAGEMENT

Introduction – Ethics in HRM – Marketing Ethics – Ethical aspects of Financial Management – Technology Ethics and Professional ethics.

Unit 4: ROLE OF CORPORATE CULTURE IN BUSINESS

Meaning – Functions – Impact of corporate culture – cross cultural issues in ethics

Unit 5: CORPORATE GOVERNANCE

Meaning, scope, composition of BODs, Cadbury Committee, various committees, reports on corporate governance, scope of Corporate Governance, Benefits and Limitations of CorporateGovernance with living examples.

SKILL DEVELOPMENT

1. State the arguments for and against business ethics
2. Make a list of unethical aspects of finance in any organization
3. List out ethical problems faced by managers
4. List out issues involved in Corporate Governance.

5. List out unethical aspects of Advertising

BOOKS FOR REFERENCE

1. Murthy CSV: Business Ethics and Corporate Governance, HPH
2. Bholananth Dutta, S.K. Podder – Corporation Governance, VBH.
3. Dr. K. Nirmala, Karunakara Readdy: Business Ethics and Corporate Governance, HPH
4. H.R.Machiraju: Corporate Governance
5. K. Venkataramana, Corporate Governance, SHBP.
6. N.M.Khandelwal : Indian Ethos and Values for Managers
7. S Prabhakaran; Business ethics and Corporate Governance
8. C.V. Baxi: Corporate Governance
9. R. R. Gaur, R. Sanghal, G. P. Bagaria; Human Values and Professional ethicsB O B Tricker, Corporate Governance; Principles, Policies and Practices
10. Michael, Blowfield; Corporate Responsibility
11. Andrew Crane; Business Ethics
12. Ghosh; Ethics in Management and Indian ethos.

Subject Name: ORGANIZATIONAL BEHAVIOR & MANAGEMENT PROCESSES

1. **Introduction:** Emergence, Concepts, Importance, Nature, Characteristic, Models,Cognitive, Behaviorist, Social Cognitive Framework, Relationship with Other Fields.
2. **Perception:** Nature, Concept, Process and Importance.
3. **Attitude:** Concept, Process, Importance, Attitude Measurement.
4. **Personality:** Concept, Nature, Types and Theories.
5. **Learning:** Concept and Theories.
6. **Work Motivation:** Concept, Application, Principles Theories Involvement, Theories ofMotivation: Maslow's Need Hierarchy, Herzberg Theory of Motivation.
7. **Group Dynamics:** Definitions Types of Groups, Stage of Group Development, Group Characteristics, Group Structure, Groups Norms and Group Cohesiveness, Group Decision- Making.
8. **Leadership:** Definition and Framework of Leadership Perspectives, Leadership Theories and Models: Traits Theories, Behavior Theories, Leadership Styles,

Nature of Conflict, Reactions of Conflict, Managing Conflict.

9. **Organizational Change:** Forces of Change, Process for Planned Organizational Culture, Globalization and Organizational Cross Cultures, the Emergence of Global Organization.

Subject Name: COMPUTER APPLICATION IN MANAGEMENT

Unit- I -Fundamentals of Computers:

1. **Data, Information and EDP**: Data, Information Need and Concept of Data and Information; Levels of Information from Data: Data Processing: Electronic Data Processing; Electronic Machines;
2. **Numbers Systems and Codes:** Different Numbers Systems- Binary, Octal, Decimal, Hexagonal, and their Conversion from Used in Computers; BCD, EBCDIC, ASCII, Gray and Conversions.
3. **Computer Arithmetic and Gates:** Binary Arithmetic, Complements, Addition and Subtraction; Conversion from One System to Another; Logic Gates, Their Truth Table andApplication Minimization, and K-Maps.
4. **Computer Processing Systems:** Definition of Computer, Hardware/ Software Concepts; Generation of Computers; Types of Computers; Elements of Digital Computer, CPU and its Functions; Various Computer Systems.
5. **I/O Devices:** Basics Concepts of I/O Devices; Various Input Devices-Keyboard, Mouse; MICR, OCR, Microphones.
6. **Various Output Devices:** VDU, Printer, Plotter, Spooling, LS.
7. **Storage Devices:** Primary and Secondary Memory; Types of Memories; Memory Capacityand its Enhancement; Memory Devise and Their Comparisons; Auxiliary Storage, Type of Disks (Magnetic and Optical); Various Devices and Their Comparison.
8. **System Software:** Role of Software, Different System Software: O.S., Utilities, Element of O.S.- its Types and Variations; DOS and Windows.
9. **Computer and Networks:** Need of Communication; Data Transmission; Baud; Bandwidth; Communication Channel; Multiplex, Basic Network Concepts; O.S.I. Model; Types of Topologies; LAN, WAN; Client Server Concept.

Unit-II: Computer Based Business Application:

1. **Word Processing:** Meaning and Role of Word Processing in Creating of Documents, Editing, Formatting and Printing Documents, Using Tools Such as Spelling Check, Thesaurus, etc. in Word Processors (MS-Word);
2. **Electronic Spreadsheet:** Structure of Spreadsheet and its Applications to Accounting, Finance and Marketing Functions of Business, Creating a Dynamic/Sensitive Worksheet, Concept of Absolute and Relative Cell Reference; Using Built-in Functions, Goal Seeking and Solver Tools; Using Graphics and Formatting of Worksheet; Sharing Data With Other Desktop Applications; Strategies of Creating Error-Free Worksheet (MS-Excel, Lotus 123).
3. Practical Knowledge of Wings Accounting (Software), Tally etc.
4. **Programming under a DBMS Environment: The Concept of Database Management Systems:** Data Fields, Records and Files, Sorting and Indexing Data; Understanding Programming Environment in DBMS; Developing Menu Driven Applications Query Language (MS-Access).

Unit-III: Electronic Data Interchange (EDI)

Introduction to EDI;EDI Standards; Financial EDI (FEDI); FEDI for International Trade Transactions; Applications of EDI; Advantages of EDI; Future of EDI.

Unit-IV: The Internet and its Basic Concepts:

Internet-Concept, History, Development in India; Technological Foundation of Internet; Distributed Computing; Client-Server Computing; Internet Protocol Suite; Application of Distributed Computing; Client-Server Computing; Internet Protocol Suite in the Internet

Environment; Domain Name System (DNS); Domain Name Service (DNS); Genetic Top- Level Domain (gTLD); Country Code Top-Level (ccTLD);- India; Allocation of Second-Level Domain; IP Addresses; Internet Protocol; Applications of Internet in Business, Education, Government,etc.

Unit- V: Information System Audit:

Basic Idea of Information Audit; Difference with the Traditional Concepts of Audit;Conduct and Applications of IS Audit in Internet Environment.

Subject Name: BUSINESS ENVIRONMENT

1. **Indian Business Environment:** Concept, Components and Importance.
2. **Economic Trends (Overview):** Income; Savings and investments; industry; Trade andBalance of Payments; Money, Finance, Prices.
3. **Problems of Growth:** Unemployment; Poverty; Regional imbalances; Social Injustice;Inflation; Parallel Economy; Industrial Sickness.
4. **Role of Government:** Monetary and Fiscal Policy; Industrial Policy; Industrial Licensing, Privatization; Devaluation; Export Import Policy; Regulation of Foreign Investment; Collaboration in the Light of recent Changes.
5. **The Current Five Year Plan: Major Policies; Resource Allocation.**
6. **International Environment:** International Trading Environment (Overview); Trends in World Trade and the Problems of Developing Countries; Foreign Trade and Economic Growth; International Economic Grouping; International Economic Institutions- GATT, WTO, UNCTAD, World bank, IMF, GSP, GSP; Counter Trade.

Subject Name: RESEARCH METHODOLOGY AND QUANTITATIVE TECHNIQUES

1. **Introduction:** Concept, of Research and its Applications, Scientific Method; Identification and Formulation of Research Problem. Survey of Literature. Process of Research: Steps Involved in Research Process. Research Design-Meaning, Purpose andPrinciples.
2. **Data Collection and Hypothesis:** Observation, Questionnaire, Interview and Case Study. Hypothesis and Testing of Hypothesis; Exploratory, Descriptive and Causal Research Designs; Basic Principles and Types of Sampling, Precision and Accuracy of Sample

   Based Research; Sampling and Non-Sampling Errors, Sampling Distribution.
3. **Presentation and Analysis of Data;** Classification, Tabulation and Graphical Representation of Data. Statistical Techniques; Measures of Central

Tendency and Variability. Statistical Estimation, Interval and Point Estimation; Chi-Square Test and t-test. Linear Programming Analysis of Variance: One Way and Two Way, Factor Analysis; Regression Analysis, Data Analysis Using Software Packages.

4. **Report Writing:** Components and Characteristic; Types of Reports; Precautions and Principles of Report and References Writing.

Second Semester

Second Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Human Resource Management	4	100
2	Managerial Economics	4	100
3	Marketing Management	4	100
4	Production and Operation Management	4	100
5	International Business	4	100
6	Business Communication	4	100
Total		**24**	

Subject Name: HUMAN RESOURCE MANAGEMENT

1. **Introduction:** Meaning, Definition, Scope, Evolution, Objectives of HRM Qualities of HR/ Personnel Manager, Role of Human Resource Manager, Development of HRM in India, Distinction between HRM and PM.
2. **Human Resources Planning:** Meaning, Objectives, Benefits of Human Resources Planning, Process and Problems in Human Resources Planning, Recent Implication in HRP, Staffing, Recruitment, Types of Tests.
3. **Training and Development:** Meaning, Definition, Need, Advantages, Objectives, Importance of Training, Types of Training, Difference between Training and Development, Education Classification of Training Methods, Executive Development, and Knowledge Management.
4. **Trade Unions:** Meaning, Characteristics, Functions and Role of Trade Unions, Unions Structure, Wages and Salary Administration, Wage Boards and Pay Commissions, Wage Incentives, Quality Circles, Industrial Democracy, Socio Technical Systems.
5. **Performance Evaluation:** Performance Appraisal, Promotions, Transfer, Demotions, Separation, Grievance.

Subject Name: MANAGEMENT SCIENCE

Unit-1

1. **Management Concepts:** Principles, History, Principles of Scientific, Functions ofManagement, Scientific Theories, Functions of Manager.
2. **Management Thoughts:** Administration and Levels of Management, Development of Management Thoughts.
3. **Planning:** Definition, Importance, Types of Plans, Strategies, Policies and Planning Premises,Principles and Limitations of Planning.
4. **Objectives:** Defining Objectives, Characteristic of Organizational, Importance, Areas Needingand Criteria of Good Objectives, Management by Objectives (MBO).
5. **Forecasting:** Elements of the Forecasting Process, Features, Planning, Advantages, Limitationsof Forecasting, Types of Forecast, Forecasting Techniques.
6. **Decision- Making:** Definition, Importance, Types of Decisions, Factors Involved and CommonDifficulties in Decision-Making, Guidelines for Effective Decision Making.

Unit-2

1. **Organization:** Definitions Formal and Informal Organizations, Classical Principles of GoodManagement.
2. **Departmentation:** Need, Importance, Advantages, Principles of Departmentation.
3. **The Concept of Authority:** Meaning, Characteristics, Distinction between Authority and Power,Sources of Authority.
4. **Delegation of Authority:** Meaning, Types of Delegation-Principles, Advantages, Importance,Effective, Limits.
5. **Centralization and Decentralization:** Types, Advantages, Disadvantages, Distinction betweenDelegation and Decentralization.
6. **Line and Staff:** Concept and Differentiation, Line and Staff Relationship, Conflicts and Types ofStaff.
7. **Nature and Purpose of Staffing:** Staffing, Responsibility for Staffing, Manpower Planning(MRP), Human Resource Planning (HRP), Aims and Objectives of HRP.
8. **Staffing:** Selection Process & Techniques, Types of Tests, Limitations of Selections Tests,Interview, Principles of Interviewing.
9. **Human Resource Management:** Scope and Objectives of Personnel Management, Training-Need, Objectives Importance, Responsibility.
10. **Directing/ Directions:** Definitions, Features, Importance, Principles and Elements, Managingand Human Factor, Creativity and Innovation.
11. **Leadership:** Meaning, Nature, Need, Importance, Functions and Qualities, Leadership Theories.
12. **Motivation:** Definitions, Importance, Process, Elements, Nature or Characteristics, and Theoriesof Motivation
13. **Communication:** Definitions, Process Principles and Methods, Barriers,

TenCommandments.

Unit-4

1. **Control Process:** Definitions, Importance, Limitations, Characteristics, Elements and TypesControl.
2. **Control Techniques:** Traditional and Modern Techniques of Controlling.
3. **Information Technology in Controlling:** IT, Uses and Challenges of IT.
4. **Productivity and Operations Management:** An Overview of Production Management TechniquesEmployed in Planning and Controlling Operations Managements.
5. **Overall and Preventive Control:** Overview and Assumption of Direct Control System, Principleand Assumption, Advantages of Preventive Control System.
6. **Globalization and Liberalization:** Globalization, Essential Conditions, Globalization in IndianBusiness, Obstacles, Factors Favoring Globalization.
7. **International Management:** Introduction Unified Global Management Theory.

Subject Name: MARKETING MANAGEMENT

1. **Introduction to Marketing:** Marketing: Definition, Key Concepts and Trends; Marketing Environment; Marketing Strategy: Market Segmentation, Target Marketing Selection and Marketing Mix.
2. **Consumer Behavior:** Consumer Behavior: Customer Decision Making Framework, Buying Process; Customer Satisfaction; Customer Relationship Marketing; The Product: Meaning, Levels, Product Mix Decisions, Product Life Cycle, New Product Development; Pricing: Objectives and Strategies.
3. **Promotion and Distribution:** Marketing Information System and Marketing Research; Promotion: Meaning, Types and Strategies; Channel Management, Supply Chain Management, Sales- Force Management and Process of Personal Selling.
4. **Global Marketing:** Contemporary Issues in Marketing: Green Marketing; Global Marketing; Retailing in India; Brand Management; Competitive Strategies; Customer Loyalty.

Subject Name: PRODUCTION AND OPERATION MANAGEMENT

1. **Work Study:** Method Study-Process Chart, Flow Process Chart, Flow Diagram, Man and Machine Chart and Two Handed Chart. Work Measurement- Time Study, Tools and in Time Study, Performance Rating, Allowance and Use of Some Time Standards, Time and Motion Study. Principles of Human Motion Economy (Introduction to Ergonomics).
2. **Plant Layout and Material Handling:** Concept of Plant Layout. Types of Layout (Process, Product and Combination Type); Their Characteristic; Merits and Demerits.

Factors Affecting Plant Layout. Work Station Design; Factors Considered in Designing a Work Station. Introduction and Functions of Material Handling. Selection of Material Handling Equipment for Different Equipment.

3. **Production Planning and Quality Control:** Types of Production: Job, Batch and Mass Production. Material Planning and Allocation. Process Planning and Process Sheet Inventory Control: Need and Advantages of Inventory Control.
4. **Inspection and Quality Control:** Inspection. Need and Planning for Inspection. Types of
   Inspection. Role of Operator and Inspector in Inspection. Quality Control and Quality Assurance. Meaning and Need for Quality Control. Statistical Quality Control. Acceptance Sampling (Single and Sequential Sampling Plans). Control Charts for Variables and Attributes, Interpretation of Patterns in Control Charts, O.C. Curves. Concept of TQM. Machine Capability Studies.
5. **Standards and Codes:** National and International Codes. ISO-9000, Concept and its Evolution and Implications.
6. **Repair and Maintenance:** Objectives and Importance of Maintenance. Different Types of Maintenance. Nature of Maintenance Problem. Range of Maintenance Activities. Schedules of Preventive Maintenance. Advantage of Preventive Maintenance.
7. **Cost Estimation:** Introduction and Functions of Cost Estimation. Estimation Procedure. Estimation of Costs and Ladder of Costs. Depreciation, Methods of Calculating Depreciation. Overhead Expenses and Distribution of Overhead Expenses Calculation of Cost of Machining and Metal.
8. **Value Engineering:** Concept of Value Engineering and Techniques.

Subject Name: INTERNATIONAL BUSINESS

1. **Marketing Basics:** Marketing Versus Sales, Effective Marketing, Role of the Marketing Plan, Marketing Potential, The Role of Marketing in Business, Marketing Functions, The Hierarchy of Effects, Common Marketing Mistakes, Found Versus Created Markets.
2. **Elements of the Marketplace:** Elements of Domestic Marketing, Elements of Export Marketing, Decision Making for Entering International Markets, Commonality and Conflict.
3. **The Dimensions of International Marketing:** Defining Market Conditions, the Dawn of Exchange Rates, International Business.
4. **International Trade:** Growth of International Markets, Pride, Prosperity and National Industries, Absolute and Comparative Advantage, Coproduction and Trade, Trade AmongNations.
5. **The Role of Government:** Sovereignty, Prestige and Security, Host Government Trade

Barriers, Home Government Intervention, Formal and Informal Restrictions, Trading Blocs, the WTO and International Intervention, Overseas Risk Management.

6. **The Role of Cultural Forces:** Language, Local Customs, History, Education, Religion, Family, Climate, Xenophobia, Cultural Adaptation, Guidelines for Cultural Analysis, Profile of an International Marketer.
7. **Developing Products for the Foreign Market:** Carrying an Established Product Across Borders, When to Make New Products, the Product Cycle, Resistance to Old Product, Meeting the New Demands for Quality, Financing & Product Development, Research.
8. **Market Research:** Defining Research Objectives, Designing Your Research Process, Sources for International Commercial Research, Collecting Information, Effective Competition Studies, the Value of Objectivity, Interpretation of Research, Guidelines for Cultural Research, Commercial Research, Competition Profiles.
9. **Preparing for Market Entry:** Segmentation, Differentiation, Positioning, Public Relations, Problems to Avoid in New Markets, Matching Goods to Market, the Pricing Process, Product Life Cycle, Warranty and Service Considerations, Matching Services to Market, Commercial and Consumer Services Pricing, Financing Strategies, Transaction Settlement, Brand Selection and Equity, Gaining Market Share.
10. **Developing Distribution:** Controlling the Channels, Distributions Strategies, Managing Logistics, Channel Options and Problems, Selecting Teammates.
11. **Advertising and Promotions:** Challenges of the Foreign Market, Standard versus Adapted Advertising, Agency Selection, Media Planning, Being Believable.
12. **Making Contact: Different Products and Promotions:** Personal Selling, Industrial Sales, Sponsorships, Direct Marketing, Push versus Pull.
13. **Staffing the New Market:** Personnel Restrictions, Selection Guidelines, Overall Management, Operations Management, Cultural Training, Motivating the Overseas Team, International Specialists, and International Divisions.
14. **Evaluating Performance:** Sales Analysis, Market Share Growth, Tracking Satisfaction, and Marketing Audit.
15. **The Marketing Plan:** Guideline for Marketing Success.
16. **The Marketing Audit:** The Marketing Audit.

Subject Name: BUSINESS COMMUNICATION

1. **Basics of Communication:** Introduction, Why Communication, Meaning and definition of Communication, Importance of Communication, Elements Of Communication Process, Communication Process Models, Basics Forms Of Communications, Effective Communication.
2. **Communication Theories:** Assumptions about Communication, Communication Theory, Communication Models, Uses of theories and models.
3. **Audience Analysis:** Introduction, Types of Audience, Importance of Audience

Analysis, Analyzing Individual and Members of Audience.

4. **Self-Development:** What is self-development, Objectives of self- development, How Self- Development Improves Communication, How Communication Leads to Self-Development, How to Development Oneself.
5. **Developing Positive Attitude:** Impact of Positive Attitude on Communication, How to Develop Positive Thinking.
6. **Corporate Communication:** Corporate Communication, Corporate Communication and Marketing Communication, Types of Corporate Communication.
7. **Formal vs. Informal Communication Network:** Formal Communication Network, Informal Communication.
8. **Barriers to Communication:** Semantic Barriers, Physical Barriers, Organizational Barriers, Psychological Barriers, How to Overcome Communication Barriers.
9. **Practices in Business Communication:** Group Communication, Group Discussion, Seminar, Mock Interview, Presentations, Listening.
10. **The Essentials of Effective Communication:** 7c's of Communication, Other Principles of Communication.
11. **Non Verbal Communication:** Kinesics, Proxemics, Physical Context.
12. **Writing Skill:** Writing Skill, Business Writing, You- Attitude, Steps In Effective Writing.
13. **Letter and Memo Writing: Formats:** Functions of Business Letters, Types of Letters, Parts of Business Letters, Format Of Business Letters, How to make Business Letters Effective.
14. **Request Letters:** Approaches to request Letters.
15. **Good News Letters:** Purpose of Good news letters, Organization of Good news letters.
16. **Bad News Letters:** What is bad news letter, purpose of writing bad news letters, the right Attitude, Drafting news message.
17. **Persuasive, Sales and Collection Letters:** Types Of Persuasive Letters, Purpose Of Persuasive Letters, How to Persuade Others, Approach to Persuasive letters, Most Common Forms Of Persuasive Letters, Letters Applying Or Offering For Agency.
18. **Memo Writing:** Memo, Memo Format, How to write effective Memos.
19. **Report Writing:** Meaning of Business Report, Types of Reports, Importance of Reports, Essentials of Good Business Report, Steps in Business Report Writing, Structure of Reports.
20. **Speeches and Presentations:** Characteristics of a good speech, How to make Effective Speech, Presentations, Support, Speech, Sales Presentation.
21. **Listening:** Importance of Listening, Types of Listening, and Barriers to effective Listening.
22. **Interviewing Skill:** Types of Interview, Staging and conducting effective interviews,

conducting the Interview, Information Gathering Interviews, Selection Interview.

23. **Resumes and Job Application:** Job Application Letters, Writing Solicited Letters, ResumeWriting.
24. **Modern Forms of Communication:** Facsimile (FAX), Video Conferencing, Electronic, ElectronicMail (E-Mail).
25. **SWOT Analysis:** SWOT Analysis and Communication, use of SWOT analysis byorganizations

Third Semester

Third Semester			
S. No.	**Name of Subject**	**Credits**	**Total**
1	Management Information System	4	100
2	Strategic Management	4	100
3	Total Quality Management	4	100
Candidates are required to Choose 3 Subjects from Major Group of study and 1 subjecteach from any two Minor Group of studies.			
Group – I {Management Studies - Marketing}			
4	Advertising Management	4	100
5	Marketing Communication	4	100
6	Marketing of Services	4	100
Group – II {Management Studies - Sales}			
4	Sales & Distribution Management	4	100
5	Marketing Planning & Control	4	100
6	Marketing Research	4	100
Group – III {Management Studies – Finance}			
4	Corporate Taxation Planning	4	100
5	Financial Engineering	4	100
6	Security Analysis & Portfolio Management	4	100
Group – IV {Management Studies – Human Resource Management}			
4	Management of Industrial Relations	4	100
5	Compensation Management	4	100
6	Human Resources Planning and Development	4	100
Group – V {Management Studies – Information Technology}			
4	Management Support System	4	100
5	Business Process Re-Engineering	4	100
6	System Analysis and Design	4	100
Group – VI {Management Studies – Environment Management & Auditing}			
4	Climate Change & Development	4	100
5	Environmental Assessment	4	100
6	Environmental Auditing & Management System	4	100

Subject Name: MANAGEMENT INFORMATION SYSTEM

1. **Introduction to Information System in Business:** Organization, Management and Network Enterprises Information system in enterprises, Information system, Organization, Management and Strategy: The changing role of Information system in organization, Decision making, business strategy.
2. Computer Hardware and Computer software, Telecommunications, Categories of computer and Computer system, what is software, System software telecommunication and Networks.
3. **Information System for Managerial Decision Support, Managing Knowledge:** Knowledge Management in organization, Information and Knowledge work system. Group Discussion Support System(GDSS), What is GDSS, Characteristics of GDSS.
4. **Enterprise and Global Management:** Redesigning the Organization with Information System: Business Process reengineering and Total Quality Management. Management international Information system: The Growth of international information system, Organizing international information system, Managing global system.

Subject Name: STRATEGIC MANAGEMENT

1. Introduction, Strategic Management, Business Policy, Corporate Strategy, Basic Concept of Strategic Management, Mission, Vision, Objectives, Impact of Globalization, Basic Model of Strategic Management, Strategic Decision Making, Impact of Internet and E-Commerce, Role of Strategic Management in Marketing, finance, HR and Global Competitiveness.
2. Environment Scanning, Industry Analysis, Competitive Intelligence ETOP Study, OCP, SAP Scanning, Corporate Analysis, Resource Based Approach, Value-Chain Approach, Scanning Functional Resources, Strategic Budget and Audit.
3. SWOT Analysis, TOWS Matrix, Various Corporate Strategic Stability, Retrenchment and Combination Strategy. Process of Strategic Planning, Stages of Corporate Development, Corporate Restructuring, Functional Strategy, BCG Model, GE 9 Cell, Porters Model: 5 Force and Porters Diamond Model, Strategic Choice.
4. Strategy Implementation through Structure, through Human Resource Management: through value and ethics. Mc Kinsey's 7S Model, Organization Life Cycle, Management and Control, Activity Based Costing, Strategic Information Systems, Case Study related to the Entire Syllabus.

Subject Name: TOTAL QUALITY MANAGEMENT

1. **Introduction:** Definition of Quality, Dimension of Quality, Quality Planning, Quality Cost- Analysis Techniques for Quality Costs, Basic Concepts of Total Quality Management, Historical

   Review, Principles of TQM, Leadership - Concepts, Role of Senior Management,

Quality Council, Quality Statements, strategic Planning, Deming Philosophy, Barriers to TQM Implementation.

2. **TQM Principle:** Customer satisfaction- Customer Perception of Quality, Customer Complaints, Service Quality, Customer retention, Employee Involvement - Motivation, Empowerment, Terms, Recognition and Reward, Performance Appraisal, Benefits, Continuous Process Improvement - Juran Trilogy, PDSA Cycle, 5S, Kaizen, Supplier Partnership - Partnering Sourcing, Supplier Selection, Supplier rating, Relationship Development, Performance Measures- Basic Concepts, strategy, Performance Measure.
3. **Statistical Process Control(SPC):** The Seven toils of Quality, Statistics Fundamentals - Measure of Central Tendency and Dispersion, Population and Sample, Normal Curve, Control Charts for Variables and attributes, Process Capability, Concept of six Sigma, New Seven Management Tools.
4. **TQM Tools:** Benchmarking - Reasons to Benchmark Process, Quality function Deployment(QFD) - House of Quality, QFD Process, Benefits, Taguchi Quality Loss Function, Total productive Maintenance (TPM) - Concept, Improvement Needs. FEMA - Stages of FEMA.
5. **Quality System:** Need for ISO 9000 and other quality Systems, ISO 9000:2000 Quality System-Elements, Implementation of Quality System, documentation, Quality Auditing QS9000, ISO14000 - Concept, Requirements and Benefits.

Management Studies – Marketing Group

Subject Name: ADVERTISING MANAGEMENT

1. **Advertising Strategy:** Strategies Role of Advertising, Advertising and Brand Advertising, Brand Concept, Segmentation and Advertising Strategy, Advertising and Non-Profit Marketing, Positioning and Consumer Benefit, Advertising and Repositioning Strategies Advertising Communication for Brands.
2. **Advertising Research:** Types of Advertising Research, Role of Research in Advertising, Development of Professional Advertising research, Uses of Advertising Research, Meaning or Measurement in Advertising Research.
3. **Advertising Brands:** Advertising Promotion and Cultural Interpretation, Differing Cultural Practices of Communication, Internationalization of Marketing, Cultural Difference and Business Behavior, Converging Cultures Debate, Economic Scope and Control of Brand Image, Marketing Communication, Role of Advertising, Standardized Global Advertising Campaigns, Advertising in Asian Economies, Advertising and Promotion in Malaysia, Japanese ads Consumer Individualism, Advertising in Thailand, Promotional Management in a Global Context.
4. **Advertising and Ethics:** Advertising and Ethical Controversy, Controversial Advertising, Advertising's Economic Function, Infantilism in Brand Advertising, Social Role of Brand Recognition, Historical Status of Advertising, Theorizing

Advertising and Promotion, Strong and Weak Theories of Advertising Concept, Advertising Text and Context, Advertising and Semiotics.

5. **Advertising and Promotion:** Advertising Agencies and Professional Disciplines of Marketing

Communication, Evolution of Advertising Agencies, Character of Advertising agency Work, Agency Brands, Account Team Roles, The Client and the Agency, Creative Advertising Development Process, Strategy: Marketing and Communication Issues, Tracking Campaign Effectiveness, Prompted and Unprompted Awareness Surveys.

Subject Name: SALES AND DISTRIBUTION MANAGEMENT

1. **Sales Setting:**

- Environmental Factors
- Environmental and Managerial Forces that Impact

Sales
- Globalization of Markets
- Fragmentation of

Markets
- Sales Channels
- Industrial/Commercial/Public Authority

Selling
- Selling for Resale
- Selling

Services
- Sales

Promotions
-

Exhibitions

- Public Relations

2. **Sales Strategies:**

- Sales and Marketing

Planning
- The Planning

Process

- Establishing Marketing Plans
- Place of Selling in the Marketing Plan

3. **Consumer and Organizational Buyer Behavior:**

- Difference between Consumer and Organizational

Buying
- Consumer Buyer Behavior
- Factors Affecting the Consumer Decision-Making

Process
- Organizational Buyer Behavior
- Factor Affecting Organizational Buyer

Behavior
- Development Purchasing

Practice

- Relationship Management

4. **Organization and Compensation:**

- Organizational Structure
- Geographical Structure
- Mixed Organization
- Determining the Number of Salespeople
- Establishing sales Territories

5. **Sales Responsibilities and Preparation:**
   - The Relationships between sales and Marketing
   - Sales and Marketing Alignment and Integration
   - Sales Responsibilities
   - Implementing Sales and Marketing
   - StrategiesPreparation

Subject Name: MARKETING SERVICES

1. **Understanding services marketing:** Introduction, services in the modern economy, Classification of services, marketing services Vs. Physical services, services as a system.
2. **Customer Relationship Marketing:** Relationship Marketing, the nature of service consumption understanding customer needs and expectations, Strategic responses to the intangibility of service performances.
3. **Services market segmentations:** The process of market segmentation, selecting the appropriate customer portfolio, creating and maintaining valued relations, customer loyalty.
4. **Creating value in a competitive market:** Positioning a service in the market, value addition to the service product, planning and branding service products, new service development.
5. **Pricing strategies for services:** Service pricing, establishing monetary pricing objectives foundations of pricing objectives, pricing and demand, putting service pricing strategies into practice.
6. **Service promotion:** The role of marketing communication. Implication for communication strategies, setting communication objectives, marketing communication mix.
7. **Planning and managing service delivery:** Creating delivery systems in price, cyberspace and timeThe physical evidence of the service space. The role of intermediaries, enhancing value by improving quality and productivity.
8. **Marketing plans for services:** The marketing planning process, strategic context, situation review marketing strategy formulation, resource allocations and monitory marketing planningand services.

Management Studies – Finance Group

Subject Name: CORPORATE TAXATION PLANNING

1. **Tax Planning:** Strategy, Value-Adding, Tax Management in Action.
2. **Legal Entity:** Strategy, Anticipation and Timing Issues, Value-Adding, Negotiating, Transforming,Entity Choice, Specialized Legal Forms.
3. **New Venture:** Internal Financing, Debt Versus Equity, Value Adding for Risk, Negotiating, Anticipation, Transactions Cost Effects on Value-Adding.
4. **New Products:** New Products and Product Improvement, Strategy, Anticipation Savant and Research and Development.
5. **Employee Tax Planning:** Executive Compensation, Non-Executive Employee Compensation, Perquisites, Pension and Profits Sharing Plans, Current and Deferred Compensation, Limits on Deductibility on Executive Compensation, Stock options, Management Bonus Plans, Consultant Interview.
6. **Market Penetration:** State and Local Taxation, Manipulation of Plant, Production Platforms,Sales and Use Taxes Abatements, Subsidies, and Other Local Costs.
7. **Operations Management:** Design and Process, Inventory Methods, Plant versus People.
8. **Financing and Tax Planning:** Operating Earning, Sale of Operating Assets, Sale of Investment,Short-Term Borrowing, Accounts Receivable, Decrease in Dividends, Stock Dividends, Stock Buy Backs, Using Employee Stock Ownership Plans, Receipt of Dividends from Subsidiaries.

Subject Name: FINANCIAL ENGINEERING

1. **Concepts of Financial Engineering:** Markets, Market Makers, Mechanics of Deals, MarketConventions, Instruments, Positions, the Syndication Process.
2. **Cash Flow and Forward Contracts:** What is a Synthetic?, Forward Contracts, CurrencyForwards, Synthetic and Pricing, A Contractual Equation, Applications, Futures.
3. **Swap Engineering:** Applications, the Instrument Swaps, Type of Swaps, Uses of Swaps,Mechanics of Swapping new Issues, Some Conventions, and Currency Swaps Versus Fx-Swaps.
4. **Repo Market Strategies:** What is Repo? , Types of Repo, Repo Market Strategies, SyntheticUsing Repos.
5. **Pricing Tools:** Pricing Approaches, Framework, an Application, Implications of the Fundamentals Theorem Using Repos.
6. **Fixed Income:** A Framework for Swaps, Team Structure Modeling, Term Structure Dynamic, Measure Change Technology, an Application, In arrears Swaps and Convexity, Cross-CurrencySwaps, Differential (Quanto) Swaps.

Subject Name: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

1. **Asset Allocation:**
- Individual Investor Life Cycle
- Life Cycle Net worth and Investment Strategies
- Life Cycle Investment Goals
- The Portfolio Management Process
- Need for a Policy Statement
- Input to the Policy Statement
- Importance of Asset Allocation

2. **Securities Markets:**
- What is a Market
- Functions of Security Market
- Specific Functions of Security Market
- Primary Market
- Characteristics of a Good Market
- Primary Capital Market

Secondary Financial Market
- Regional Exchange and the Over the Counter Market
- Detailed Analysis of Exchange Markets
- Change in the Securities Markets
- Evidence and Effect of Institutionalization

3. **Securities Markets Indicator Series:**
- Uses of Security Market Indexes
- Stock Market Indicator Series
- Price-Weighted Series
- Market Value Weighted Series
- Un-weighted Price Indicator Series
- Annual Security Risk-Returns and Correlations

4. **Portfolio Management:**
- Some Background Assumptions
- Markowitz Portfolio Theory

5. **Analysis of Financial Statements:**
- Major Financial Statements

- Purpose of Financial Statement Analysis
- Analysis of Financial Ratios
- Computation of Financial Ratios
- Evaluating Internal Liquidity
- Evaluating Operating Performance
- Risk Analysis
- Financial Risk
- Analysis of Growth Potential
- Comparative Analysis of Ratios
- Analysis of Non-u. S. Financial
- StatementThe Quality of Financial
- Statement Specific Uses of Financial Ratios

Management Studies – HRM Group

Subject Name: MANAGEMENT OF INDUSTRIAL RELATIONS

1. **Introduction to Industrial Relation Management**
   - Industrial Relations
   - Causes of Industrial Disputer results in Bad Industrial Relation
   - Improvement of Industrial Relations
   - Definition of industrial relation
   - Some important terms used in Industrial Relations
2. **Concepts and Determinants of Industrial Relations**
   - Concepts determinates of Industrial Relation
   - Determination of Good Industrial Relation
   - Industrial Relation Development
   - Industrial Relations in India
3. **Managing Industrial Relations Changes and Productivity**
   - P.M and H.R.M - Industrial Relation
   - Status of Trade Unions
   - Industrial Relation and productivity
   - Productivity
4. **Industrial Relation and Technology**
   - Effective Communication System and I.R Management

5. **Industrial Relation and Labor Organization**
   - International Labor Organization
6. **Trade Union**
   - Characteristics of Trade unions
   - Nature and Scope of Trade unions
   - Purpose of Trade unions
   - Historical evolution of Trade union in India
   - Trade unions Growth
   - Functions of Trade Unions
   - Structure of Trade unions in India
7. **Industrial Relations, Trade unions and its Conflicts**
   - Registration of Trade unions
   - Penalties and Procedure
   - Unionization in India Context
   - Recognition of a union
   - Right and Responsibilities of Register unions
   - Multiplicity of Trade union
   - Causes of Conflicts
   - Industrial Relation
8. **Counseling- Methods and Problem**
   - Employee Counseling
   - Counseling in Industry
   - Objectives
   - Need for Counseling
   - Functions of Counseling
   - Types, Methods and Process of Employee
   - CounselingTypes of Problem For Employee Counseling
9. **Industrial Relations and Strategy**
   - Factors affecting employee relations strategy
   - IR-strategy
   - Collective bargaining
10. **Worker Development and Worker's Participation**
    - At one Extreme

- At the other extreme
- Human Resource development approach
- Workers Participation in Management
- Need of Worker's Participation
- Objective of Workers

Workers Participation in management in India

Subject Name: COMPENSATION MANAGEMENT

1. **Introduction:** Compensation meaning, objectives, nature of compensation, types of compensations, compensation responsibilities, Compensation system design issues: Compensations Philosophies, compensation approaches, decision about compensation, compensation- base to pay, individual Vs team rewards, Perceptions of pay Fairness, legal constraints on pay systems.
2. **Managing Compensation:** Strategic Compensation planning, determining compensation-the wage mix, Development of a Base Pay System: Job evaluation systems, the compensation structure- Wage and salary surveys, the wage curve, pay grades and rate ranges, preparing salary matrix, government regulation on compensation, fixing pay, significant compensation issues, Compensation as a retention strategy.
3. **Variable Pay and Executive Compensation:** Strategic reasons for Incentive plans, administering incentive plans, Individual incentive plans-Piecework, Standard hour plan, Bonuses, Merit Pay, Group incentive plans- Team compensation, Gain sharing incentive Plans, Enterprise incentive plans- Profit Sharing plans, Stock Options, ESOPs, executive compensation elements of executive compensation and its management, International compensation Management.
4. **Managing Employee Benefits:** Benefits- meaning, strategic perspectives on benefits-goals for benefits, benefits need analysis, funding benefits, benchmarking benefit schemes, nature and types of benefits, Employee benefits programs- security benefits, retirement security benefits, health care benefits, time-off benefits, benefits administration, employee benefits required by law, discretionary major employee benefits, creating a work life setting, employee services-designing a benefits package.

Subject Name: HUMAN RESOURCES PLANNING AND DEVELOPMENT

1. Macro Level manpower Planning and Labor market Analysis - Organizational Human Resource

   Planning -- Stock Taking -- Work Force Flow mapping -- Age and Grade Distribution mapping.

2. Models and Techniques of manpower demand and supply forecasting-- Behavioral Factors in HRD -- Wastage Analysis . Retention -- Redeployment and Exit Strategies.
3. Career Management, Career Planning and Career Development.
4. Performance Planning -- Potentials Appraisal -- HRD Climate.
5. Human Resource Information System -- Human Resource Accounting.

Management Studies – HRM Group

Fourth Semester

Fourth Semester			
S. No.	**Name of Subject**	**Credit**	**Total Marks**
1	Environmental Management	4	100
2	Financial Management	4	100
3	Project	4	100
Candidates are required to Choose 3 Subjects from Major Group of study same as Semester Third, and total 3 subjects from any two Minor Group of studies.			
Group – I {Management Studies – Marketing}			
4	Agricultural and Rural Marketing	4	100
5	Consumer Behaviour	4	100
6	Industrial Marketing	4	100
Group – II {Management Studies - Sales}			
4	Principles and Practice of Selling	4	100
5	Marketing Strategies and Advertisement	4	100
6	Marketing Communication	4	100
Group – III {Management Studies – Finance}			
4	Management of Financial Services	4	100
5	Corporate Restructuring	4	100
6	Global Financial Marketing	4	100
Group – IV {Management Studies – Human Resource Management}			
4	International Human Resource Management	4	100
5	Management of Training & Development	4	100
6	Organizational Change and Development	4	100
Group – V {Management Studies – Information Technology}			
4	Data Base Management	4	100
5	Software Engineering	4	100
6	Internet & E-commerce	4	100
Group – VI {Management Studies – Environment Management & Auditing}			
4	Environmental Economics & Policy	4	100
5	Environmental Service Management	4	100
6	Sustainable Land Management	4	100
7	Waste Management	4	100

Group – VII {Management Studies – Project Monitoring & Evaluation}			
4	Project Planning & Control	4	100
5	Project Risk Management	4	100
6	Project Scope Management	4	100
7	Stakeholders Management	4	100
Group – VIII {Management Studies – Project Management}			

4	Project Planning & Control	4	100
5	Quality Planning & Control	4	100
6	Supply Chain Planning & Control	4	100
7	Work Study & Measurement	4	100
Group – IX {Management Studies – Organizational Development}			
4	Management of Change	4	100
5	People in Organisation	4	100
6	Performance & Reward Management	4	100
7	Recruitment, Training & Skills Development	4	100
Group – X {Management Studies – Finance Services, Security Analysis}			
3	Financial Security Analysis	4	100
4	Investment Security Analysis	4	100
5	Secured Banking Practices	4	100
Total		**32**	

Subject Name: ENVIRONMENTAL MANAGEMENT

Unit 1: Study of Nature, Resources and Ecosystem

1. **Environment Studies - Scope and Importance:** Objectives, Environment, Types of Environment, Need for Public Awareness, Environment Ethics, Environmental Education, Multidisciplinary Nature of Environmental Education, Scope of Environmental Education.
2. **Natural Resources:** Objectives, Introduction, Classification of Natural Resources, Principal Natural Resources and their Problems- Forest Resources, Water Resources, Mineral Resources, Food Resources, Energy Resources, Land Resources**.**
3. **Ecosystem:** Objectives, Types of Ecosystem, Ecosystem Components, Ecosystem-Structure and Function, Food Chain and food Web. Ecological Pyramids, Major Ecosystems, Ecological Succession (Changes in Biotic Community).

Unit 2: Biodiversity and Pollution Control

1. **Biodiversity and ITS Conservation:** Objectives, Levels of Biodiversity, Bio Geographical Classification of India, Value of Biodiversity, Man-Wildlife Conflicts, Conservation of Biodiversity, Hot Spots of Biodiversity, Biodiversity Conservation of India.
2. **Environment Pollution:** Objectives, pollutions, Types of Pollution, Atmospheric or Air pollution, Water pollution, Soil pollution, Radioactive pollution, Noise pollution, Solid Waste Management, Role of Individual in Prevention of Pollution, Environmental Disasters and TheirManagement.

3. **Social Issues and The Environment:** Objectives, Sustainable Development, Water Conservation, Resettlement and rehabilitation of People Environmental Ethic and Resource Use, Global Environmental Changes, Greenhouse Effect, Relative Contribution and Effects of Greenhouse, Wasteland Development.

Unit 3: Study of Population Growth and Case Studies

1. **Human Population and The Environment:** Objectives, human Population Growth, Maximum Carrying Capacity, Environment and Human Health, Family welfare Programme, Human Rights, Women and Child Welfare, role of Information Technology in Environment and Human Health.
2. **Field Work:** Introduction Visit to a Local Area to Document environmental Assets-River, Forest, Grasslands, Hill Mountains, A Visit to Local Pollution Sites-Urban Site Rural Site,

   Agricultural Site, Study of Common Plants, Insects and Birds, Study of Simple Ecosystem - PondEcosystem, River, Hill Slope.

Subject Name: FINANCIAL MANAGEMENT

1. **Stock Exchange:** Definition, Market Participants, The Role of Stock Exchanges, Corporate Governance, Trading in stock Exchanges, AMEX, NASDAQ, LSE, NYSE, FSE, PSE, TSE, SSE, Madrid Stock Exchange.
2. **Indian Stock Exchange:** Bombay Stock Exchange: BSE Sensex, Sensex Milestones, National Stock Exchange: Innovations, Indices, Mission, Logo, Corporate Structure, Board of Directors, Committee on Trade Issues(COTI), Capital Market Segment.
3. **Capital Market:** Types of Market, The Primary Stock Market, Beneficial Effects of Primary Market, Secondary Stock Market, Process of Purchase/ Sales of Shares, Bodies Regulating Share Market, what is SEBI? Advantages of Listing on stock Exchange.
4. **Investment Management:** Investment Concepts, Investment objectives, Investment Alternatives, Investment Process, Equity, Investment Strategies, Fundamental Analysis/Equity analysis, Industry Cycle, The Annual Report, Profit and Loss Rations, Stock Utilization.
5. **Technical Analysis:** Introduction, DOW Theory, Basic Principles of Technical Analysis, Different types of Charts, Charting: Support and Resistance, Trading Guidelines, Uptrend and Downtrend Psychology, ELLIOT's Wave Principle, Moving Averages, Trading with MovingAverages.
6. **Analysis of any listed company:** Company Background, shareholding Pattern, Corporate Announcement.

Management Studies – Marketing Group

Subject Name: AGRICULTURAL AND RURAL MARKETING

1. Concept & scope of rural market, Rural development as a core area, Efforts put for Rural development in Fiveyears plans. Rural markets' Characteristics, Rural markets. Environmental factors.
2. Rural Consumer Behaviour, Rural Consumer Vs Urban Consumers – a comparison, Relevanceof Marketing mix for Rural market/Consumers. Problems in rural market.
3. Segmentation, Targeting & Positioning for rural market, Market forces, components of different ProductStrategies, Pricing Strategies, Promotional Strategies & Distribution Strategies for Rural consumers.
4. Understanding Agricultural Markets, Nature & scope, Objectives of Agriculture Marketing, Challenges inAgriculture Marketing, Agriculture Marketing & its Economic importance, Agricultural Produces and theirmarket.
5. Export potential for agri-products, Major of Government and Non-Govt. Agencies in the development of Ruraland Agricultural, Sector Marketing Strategies for Seed; Fertilizers; Pesticides; Farm equipment. Role.

Subject Name: CONSUMER BEHAVIOR

1. **Fundamentals of Consumer Behavior:** Decision Making Process, Marketing Strategy.
2. **Consumer Behavior:** Braking Culture into Subcultures, Understanding the Power of Culture, How Culture Affects People and Their Purchasing Behavior, How Cultural Understanding Increases Marketing Effectiveness, seeing Cultural Conditioning in Action and in Effect, Applying Cultural Perspective to Your Marketing Strategy.
3. **Household Structure and its Role:** A Primer on Household Structures, Defining an Individual's Household Role, Variables that Change the House Structure, Examining Traditional House Stages and Their Buying Influences, Familiarizing Yourself With Common, Identifying new Structures that have Emerged, Targeting your Marketing to Specific Household Types and Roles, Factoring in Family Dynamics and Disagreements, Dealing withInterests and Responsibilities.
4. **Group Influences:** Power of Groups, Major Types of Groups, Influence of Group, MarketingOpportunity Groups, Members Attraction and Commitment to the Group, Assessment of Group, Determining how you can Appeal to Group.
5. **Consumer Misbehavior:** Definition of Consumer Misbehavior, Consumer Misbehavior, Difference between Misbehavior and Problem Behavior, Pathological Socialization, Decision-Making Process Leads to Misbehavior.
6. **Discover New Market Opportunities:** Finding new Areas of Opportunities, Types of Opportunities Sources of new Areas of opportunities, Untapped Market.

Subject Name: INDUSTRIAL MARKETING

1. **Industrial Market:** Types of Marketing Entities, Industrial Marketing, Types and Forms, Demand Forces, Relationship Marketing, Cross- Functional, Impact of

Current Developments on Industrial Firms, Types of Actions by Industrial Companies, Major Differences in Supplier-Customer Interaction.

2. **Marketing Environment:** Business Environment, Micro-Environment, Macro-Environment, Government Influences, Competitive Forces, the International Environment, Modern Trends in Industrial Marketing, and Trend towards Increased Globalization.
3. **Industrial Buyer Behavior:** The Buying Process, Purchase Objectives and Goals, Types of Industrial Organizations and Industrial Buying Characteristics, E-Procurement.
4. **Marketing Research:** Definition and Nature of Marketing Research, the Marketing Research Process, Marketed Demand Analysis, Scope of Industrial Marketing Research, Types of Marketing Research, the Marketing Information System, and Marketing Intelligence System.
5. **Targeting and Positioning:** Purpose of Industrial Marketing Segmentation, Needs of Market, Segmentation Evaluation, Process of Segmentation, Market Segmentation Evaluation, Target Segments, Positioning, Communicating the Company Positioning.
6. **Planning and Development:** Types of Product Lines, Product Policy and Strategy, Industrial Product Life Cycle, Delivering Superior Value, Value Added Process, Product/Market

   Strategic Development, New Product Development, Managing Product in High Deployment.
7. **Integrated Marketing Integrated:** Definition of IMC, Role of Advertising, Decision Stages in Developing Advertising Program, Direct Marketing Using Direct Mail, the Communications Mix, Media Selection, Personal Selling, Relationship-Building Process, Internet Marketing Communications, Sales Promotion, Publicity and Public Relations, Industrial Product Brand Promotion.
8. **Distribution Channels and Logistics:** Nature of Industrial Distribution Channels, Industrial Channel Structure, Functions of Intermediaries, Types of Intermediaries, Channel Design, Logistics Management, Supply Chain Management (SCM) Concepts, IT System in SCM.

Management Studies – Finance Group

Subject Name: MANAGEMENT OF FINANCIAL SERVICE

1. **Introduction to Management of Financial Service**

- Services
- importance of Financial

Management
- Responsibilities of the

Financial manger

- Objectives and Concepts of Financial Services
- Functions of Financial Management
- HRM in a Service Culture

2. Service Management

- Global Significance of Services
- The Concept, nature and Structure of Services
- Management Concepts and Theory
- Strategic Management of Services

3. Service Environment

- The Global trade in Service
- Globalization and Services
- Regionalism and the Services Environment
- The National Service Environment

4. Influence on service

- Types of Stakeholder
- Who are The Stakeholder
- origins and Ethic of Stakeholder
- Stakeholder Theory
- Stakeholder and the Quality Movement
- Environmental Waste Management

Stakeholder and Service

- Stakeholder Theory and the issues of Business
- ethics Stakeholder Frameworks
- Stakeholders and Service

Subject Name: CORPORATE RESTRUCTURING

1. **Takeover:** Transactions and Restructuring, Supermajority and Fair Price, Compulsory Redemption Charter Provisions, Recapitalization, Control Clauses, Stock Repurchases, Non- Discriminatory, Impediment Charter Provisions, Shareholders Opportunities, Written Consent, Shareholders Meetings, General Shareholders Meetings, Post-Bid Measures, Future Avenues.
2. **Targeted Stocks:** Forces Driving Restructuring Initiatives, Shareholder

Activism, Failure of Internal Control System, Capital Structure, Managerial Myopia, Valuation and Performance, Emerging Markets, Beecham, Types of Restructuring, Analyst Coverage, Empirical Evidence on Spin-offs, Long-Run Performance of Spun-Off Firms, Equity Carve-Outs, Rationale for Carve-Outs, Empirical Evidence on Carve-Outs, Advantages and Disadvantages of Targeted Stocks.

3. **Bankruptcy and Reorganization:** Distress, Control Systems, Capital Structure, Currency and Interest Rate, Comparisons, Bankruptcy Code.
4. **Ownership Plans:** Employee ownership, Ownership Models, Legislation Approaches, Non- Legislated Approaches, Stock Options, Restricted Stock, Stock Appreciation Rights, Purchase Plans, ESOP, ESOP Applications, ESOP Loans, Selling Shareholder, Financial Issues, Determining ESO P, Stock Option Procedures, Tax Implications of ISOs, Ownership and Motivation.

Subject Name: GLOBAL FINANCIAL MARKETING

1. **Commercial Banks**

- The Role of Commercial Banks
- Types of Loans Granted by Commercial banks
- What makes a bank limited Liability Company
- Deposit Lending
- Iceland Banks

2. **Banking Service**

- Shadow banking
- Banking Secrecy

Building Societies

- Saving and loan
- Credit unions

3. **Central Banks**

- Naming of Central Banks
- An Overview

- Measures in the Credit Crisis of 2007-09
- Efficient Market Fallacy

4. **Stock Market**

- Importance of Market
- Relation of The stock market to the Modern financial System
- The Behavior of The Stock Market
- Irrational Behavior
- Shares
- investment adviser
- Equities
- Inflation and Deflation

5. **Money Market**

- Interest- Rate Derivatives
- Domestic bonds
- Types of Bond
- International Debt Securities

6. **Banking Investment**

- The Business
- International debt Securities
- Public offering

7. **Asset Backed Securities**

- Advantage and Disadvantages
- Securitization
- Investors
- Regulation and Transparency
- Types of reinsurance
- The Credit Crunch

8. **Corporate Governance**

- Principles of Corporate Governance
- Interests of Other stakeholders
- Disclosure and transparency
- An Overview
- Enron

Management Studies – HRM Group

Subject Name: INTERNATIONAL HUMAN RESOURCE MANAGEMENT

1. **Organization Structure**

- IHRM and Organization Design
- Global Organization Structure
- Types of Global Organization Structure
- Global Matrix Structure

- Network

- The Global Learning Organization : The TIE that Binds

2. **Role and Future of HRM**

- Organization advancement
- Involvement
- Staffing the department
- IHR research
- Relocation and orientation

Administrative Services

- Role of IHRM

3. **Law and Labor Relations**

- Global employment law and enforcement
- Discrimination, Harassment and Victimization

4. **Global Enterprise**

- International Assignees
- Process of Selection
- Repatriation
- Immigration Laws

5. **International Performance**

- International Performance management
- International performance management system

Managing the IPM system
Overcoming IPM challenges

Subject Name: MANAGEMENT OF TRAINING AND DEVELOPMENT

1. **The Importance of Training**

- Types of Training
- What do we mean by Training
- Benefits of the organization

Individual Benefits

- Manager Benefits

Alternative

2. **Training Cycle**

Implement the Plans

3. **Identifying Training Needs**

- Types of Training Need
- Organization needs
- Work team need

individual Need

- Using Documentation

Using Discussion

- observing the job holder
- Diff-rating Scales

- Appraisal interviews
- Agreeing Training needs
- Recording Training needs

4. **Planning Successful Training**

- What are we trying to achieve?
- Participative Learning method
- Learning Styles
- Training on or off the job?
- Choosing the best method
- Overhead Projectors
- Flipcharts

Handouts

- Planning the training

Course Content

- timing
- Deciding on review and Evaluation processes

5. **Reflect and Review**

- Introduction

Subject Name: ORGANIZATIONAL CHANGE AND DEVELOPMENT

1. Nature of planned change.
2. Diagnosing organizations.
3. Collecting and analyzing information.
4. Designing interventions.
5. Leading & managing change.
6. Evaluating and institutionalizing OD.
7. Interpersonal group processes.
8. Organization process approaches.
9. Restructuring organizations.
10. Employee involvement.
11. Organization transformation.
12. Organizational development in global settings.
13. OD in healthcare, schools, and public sector.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.Sc. Physics

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.Sc. Physics

Introduction :

M.Sc. Physics in Open and Distance Learning (ODL) is a postgraduate program that provides students with the opportunity to pursue their studies in physics, but with the flexibility of studying at their own pace and in their own time. ODL programs are designed for students who are unable to attend regular classroom-based programs due to various commitments.

The M.Sc. Physics program in ODL covers a wide range of topics such as classical mechanics, quantum mechanics, electromagnetism, thermodynamics, astrophysics, and cosmology. The program is designed to provide students with a strong foundation in theoretical and applied physics, which can be applied to various fields such as science, engineering, and technology.

The program typically lasts for two years and is delivered through online platforms, study materials, and periodic contact sessions with instructors. This provides students with the flexibility to learn at their own pace, and they can interact with instructors and fellow students through online platforms and attend periodic contact sessions for clarification of doubts and guidance.

The M.Sc. Physics program in ODL is ideal for working professionals, individuals residing in remote areas, or those who have other commitments that make it difficult to attend regular classroom-based programs. Graduates of this program can pursue careers as physicists, researchers, educators, and consultants in various industries.

Overall, an M.Sc. Physics program in ODL provides students with the opportunity to develop their physics skills, deepen their knowledge of physics concepts, and prepare for a wide range of careers in various industries while offering the flexibility to study from any location.

(i) (a) Programme's Mission: The mission of an M.Sc. Physics program is to provide students with a comprehensive understanding of the fundamental principles and theories of physics. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research and contribute to the advancement of the field of physics.

The curriculum of the program is designed to cover a broad range of topics, including classical mechanics, quantum mechanics, electromagnetism, thermodynamics, statistical mechanics, and condensed matter physics. Through coursework, research projects, and practical experiences, students develop a deep understanding of the fundamental concepts of physics and their applications in various fields.

The M.Sc. Physics program also aims to develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively. Graduates of the program are prepared for careers in academic research, industry, and many other fields related to physics.

Ultimately, the mission of an M.Sc. Physics program is to foster a deeper understanding and appreciation of the natural world and the laws that govern it, and to prepare students to make meaningful contributions to the scientific community and society as a whole.

(b) Objectives:

The objective of an M.Sc. Physics program is to provide students with a comprehensive understanding of the fundamental principles, concepts, and theories of physics. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research, development, and management of new and advanced technologies based on the principles of physics.

The program's objectives are as follows:

1. To provide students with a strong foundation in the fundamental concepts and theories of physics, including classical mechanics, quantum mechanics, electromagnetism, thermodynamics, statistical mechanics, and condensed matter physics.
2. To develop students' skills in conducting research in physics, including designing experiments, collecting and analyzing data, and presenting research findings.
3. To provide students with practical experiences through laboratory work, research projects, and internships to develop their skills in experimental physics and data analysis.
4. To develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively.
5. To prepare students for careers in academia, research institutions, government agencies, and other industries related to physics, including high technology industries such as nanotechnology, materials science, and renewable energy.

Ultimately, the objective of an M.Sc. Physics program is to provide students with a strong foundation in the theoretical and practical aspects of physics, which will enable them to contribute to the advancement of the field of physics and to apply their knowledge to the development of new technologies that can improve the quality of life for people around the world.

(ii) Relevance of the Programme with HEI's Mission and Goals: The M.Sc. Physics program in Open and Distance Learning (ODL) is highly relevant to the mission and goals of higher education institutions (HEIs) that offer distance education. Here are some ways in which the M.Sc. Physics program in ODL is aligned with the mission and goals of HEIs:

1. Providing access to education: The M.Sc. Physics program in ODL provides access to higher education for students who may not have the opportunity to attend a traditional brick-and-mortar university. This aligns with the mission of many HEIs to provide education to a diverse student body and to ensure that education is accessible to all.
2. Offering flexibility: The M.Sc. Physics program in ODL is designed to be flexible, allowing students to study at their own pace and in their own time. This aligns with the goal of many HEIs to provide flexible education options that accommodate the needs of non-traditional students, such as working professionals or individuals with family obligations.
3. Promoting lifelong learning: The M.Sc. Physics program in ODL promotes lifelong learning by providing students with opportunities to continue their education and professional development, even after they have completed their degree. This aligns with the mission of many HEIs to promote lifelong learning and to provide education that prepares students for the challenges of the future.
4. Fostering critical thinking and problem-solving skills: The M.Sc. Physics program in ODL is designed to develop students' critical thinking and problem-solving skills, which are essential for success in any field. These skills enable students to analyze complex problems, evaluate evidence, and develop creative solutions to real-world challenges.
5. Contributing to scientific advancement: The M.Sc. Physics program in ODL prepares students for careers in academia, research institutions, and other industries related to physics. By providing students with the necessary knowledge and skills, the program is contributing to scientific advancement and helping to solve the most pressing challenges facing our world today.

Overall, the M.Sc. Physics program in ODL is highly relevant to the mission and goals of HEIs. It provides access to education, offers flexibility, promotes lifelong learning, fosters critical thinking and problem-solving skills, and contributes to scientific advancement.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an M.Sc. Physics program can include individuals who have a strong background in physics or related fields and are interested in pursuing advanced studies in the field. Some of the potential target groups of learners for this program are:

1. Students with a Bachelor's degree in physics or related fields: This group of learners may have completed their undergraduate degree in physics, engineering, or another related field and are interested in furthering their knowledge and skills in physics.
2. Working professionals in the field of physics: This group of learners may already be working in the field of physics or related industries, such as technology, research, or manufacturing, and are interested in pursuing advanced studies to enhance their knowledge and skills.
3. Individuals interested in research: This group of learners may be interested in pursuing a career in research and are looking for a program that will provide them with the necessary knowledge and skills to pursue advanced research in physics.
4. Educators: This group of learners may be educators who are interested in enhancing their knowledge in physics and related fields, and are looking for a program that will help them better prepare their students for careers in physics.
5. Aspiring physicists: This group of learners may be individuals who are interested in pursuing a career in physics and are looking for a program that will provide them with the necessary knowledge and skills to pursue their career goals.

Overall, the prospective target group of learners for an M.Sc. Physics program can be diverse and include individuals from various educational and professional backgrounds who are interested in pursuing advanced studies in physics.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The M.Sc. Physics program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence. Here are some reasons why:

- Flexibility: The ODL mode provides flexibility in terms of time, pace, and place of learning, which is especially important for learners who are already working or have other commitments. This mode allows learners to design their own study schedules and access course materials at their convenience, which can help them to balance their work, family, and educational commitments.
- Access to learning resources: ODL mode can provide access to a wide range of learning resources, including digital textbooks, audio and video lectures, interactive simulations, and virtual laboratories. This mode allows learners to access these resources from anywhere, which

can help them to deepen their understanding of key concepts and develop specific skills and competencies.

- Personalized learning: ODL mode can provide personalized learning experiences to learners by using adaptive learning technologies, providing individual feedback, and offering personalized tutoring. This mode can help learners to focus on their specific needs and interests and acquire the skills and competence they need to succeed in their chosen field.
- Cost-effective: ODL mode can be a cost-effective option for learners who are unable to attend traditional, on-campus programs. This mode can reduce the cost of tuition, accommodation, and transportation, making it more accessible to learners from diverse socioeconomic backgrounds.
- Practical components: Although some practical components of the M.Sc. Physics program may require access to laboratory equipment, there are still many theoretical components of the program that can be delivered effectively through the ODL mode. Furthermore, some universities offer online laboratories and simulations that can be used to supplement or replace the practical components of the program.

Overall, the M.Sc. Physics program can be appropriately conducted in the ODL mode, providing learners with the opportunity to acquire specific skills and competence in a flexible, accessible, personalized, and cost-effective manner.

(v) Instructional Design: The M.Sc. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

Year	Course Code	Courses	Marks		
			Term End Exams	Continuous Evaluation/IA	Total
	56921	Course 1: Mathematical Methods& Classical Mechanics	85	15	100
	56922	Course 2: Quantum &Statistical	85	15	100

Previous Year		Mechanics			
	56923	Course 3: Solid State Physics	85	15	100
	56924	Course 4: Electronics	85	15	100
		Practical I : Experiments in General physics	55	*20	75
		Practical II: Experiments in Electronics	55	*20	75
		Total marks	**450**	**100**	**550**
Final Year	56931	Course 5: Electrodynamics, Optics & Molecular Spectroscopy.	85	15	100
	56932	Course 6:Nuclear Physics, Cosmic raysand Elementary particles.	85	15	100
	56933	Course 7:Solid State Physics- I	85	15	100
	56934	Course 8:Solid State Physics- I I	85	15	100
		Practical III : Experiments in nuclearPhysics	55	*20	75
		Practical IV: Experiments in Solid StatePhysics	55	*20	75
		Total marks	**450**	**100**	**550**
		Total Marks Previous and Final Year	**900**	**200**	**1100**

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has

been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.Sc. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.Sc. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: B.Sc. with Physics

Fee Structure: M.Sc. Previous & M.Sc. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of theconcerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods

2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the

award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree if he/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in thecurriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.Sc. Physics	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are important aspects of any educational program, including M.Sc. Physics. Here are some quality assurance mechanisms and expected program outcomes of M.Sc. Physics:

Quality Assurance Mechanisms:

- Regular review and revision of the curriculum to ensure that it remains current, relevant, and aligned with industry standards.
- Regular monitoring of teaching methodologies and assessment procedures to ensure that they are effective in achieving the program's learning outcomes.
- Regular evaluation of faculty members to ensure that they are qualified, experienced, and effective in delivering high-quality instruction.
- Periodic external reviews by experts in the field to provide feedback on the quality and relevance of the program.
- Implementation of a feedback system that enables students to provide constructive feedback on the quality of the program and the teaching methods used.

Expected Program Outcomes:

- Thorough understanding of the fundamental principles of physics, including classical mechanics, electromagnetism, quantum mechanics, thermodynamics, and statistical physics.
- Ability to apply mathematical and computational tools to solve complex problems in physics.
- Knowledge and skills in laboratory techniques, data analysis, and research methodologies related to physics.
- Ability to design and conduct independent research projects in the field of physics, analyze and interpret data, and communicate research findings effectively.
- Effective communication skills, both written and verbal, to effectively present scientific information to diverse audiences.

By implementing these quality assurance mechanisms and ensuring that the program achieves these expected outcomes, M.Sc. Physics can provide high-quality education and prepare learners for successful careers in various fields related to physics.

M.Sc. PREVIOUS.

CORE SUBJECT: Course 1:MATHEMATICAL METHODS AND CLASSICAL MECHANICS:

UNIT-1COMPLEX VARIABLE: Functions of a complex variable, analyticity and Cauchy-Riemann relations. Conjugate and harmonic nature of the real and imaginary parts of an analytic function. Cauchy's- theorem and integral formulae, Tayler and Laurent's series, zero isolated singular points, simple pole, m th order pole, evaluation of residues- Cauchy residue theorem. The Cauchy principle value, Evaluation of different forms of definite integrals.

UNIT-2 SPECIAL FUNCTIONS: Beta &Gamma functions, Separation of the Helmoholtz and Poisson equations in spherical and cylindrical polar coordinates. Series solutions of the equations of Bessel, Legendre, Hermite and Laguerre. Some recurrence relations andorthogonality properties of these functions. A brief discussion of associated Legendre polynomials and Laguarre's polynomials, spherical harmonics.

UNIT-3 VECTOR ANALYSIS: Concept of Gradient, divergence and curl, Integration of Vectors- Line, Surface and volume integrals- Gauss's divergence theorem. Green's theorem and Stock's theorem- their application to hydrodynamics(Equation of continuity and Euler's equation). Orthogonal curvilinear Co-ordinates- Laplacian operator in Cylindrical polar and spherical polar co-ordinate.
25 hours(03 questions)

UNIT-4 MATRICES: Addition and multiplication of rectangular matrices. Equality and zero.Definition of the inverse of a non-singular matrix.Inversion of simple 2x2 and 3x3 non-singular matrices.Definitions of normal, Hermitian, Skew-Hermitian, Unitary, Symmetric, Skew-symmetric and Orthogonal matrices. The notion of eigen values and eigen vectors. Construction of the eigen values and eigen vectors of simple 2x2 and 3x3 matrices such as the Pauli matrices. Statement of the Cayley Hamilton theorem(no proof expected) Statement of the Schur theorem on triangularisation of arbitrary square matrices and diagonalisation of normal matrices. Explicit diagonalisation of some simple 2x2 and 3x3 real asymmetric matrices.

UNIT-5 TENSOR ANALYSIS: Cartesian tensors- Law of transformation of first and second order tensors. Additions, substraction and multiplication (inner and outer) of tensor. Symmetric and antisymmetric tensors- Quotient law of tensors. Tensor form of gradient, divergence and Curl.Kronecker tensor.

UNIT-6 Application of Tensor: Occurrence of tensors in Physics- Tensors in elasticity, Hook's law; strain and elastic constant tensor. Piezoelectric, polarisability and moment of inertia tensors. Symmetry and reduction in number of independent components of elastic constant tensor.

UNIT-7 INTEGRAL TRANSFORMS : A review of Fourier series, Fourier integral, Fourier transforms- definition, special form of Fourier integral and properties, convolution theorem involving Fourier transform- application of Fourier transforms, Laplace transform , convolution theorem involving Laplace transform- application of Laplace transforms.

25 hours (3 questions).

UNIT-8 CLASSICAL MECHANICS: Mechanics of a Particle & system of particles, D'Alembert's principle, Inertial frames, Galilean principle of relativity, Generalized co-ordinates. The principle of least action.Lagrange's equations of motion of the second kind.TheLagrangian for a system of interacting particles.The example of the simple pendulum. Conservation laws for energy and momentum. Centre of mass. Angular momentum and its conservation. Motion in a central field treated by the Lagrangian method. Application to Kepler problem and Rutherford scattering.

UNIT-9 Hamilton's equations.Poissonbrackets.Canonicaltransformations.A brief introduction to the Hamilton-Jacobi equations.Kepler's problems in angle variables.

25 hours(3 questions).

BOOKS FOR REFERENCE:

1. Mathematical Methods for Physicists- G. Arfken(Academic press 1968).
2. Vector Analysis- M. Speigel (Tata-McGraw Hill 1973).
3. Tensor Calculus- J.L. Synge and A. Schild(University of Toronto Press 1969),
4. The Rotation and Lorentz Groups and their representations for Physicists- K.N. SrinivasaRao (Wiley-Eastern, 1988).
5. Matrices- F.ayres Jr.(Tata-McGraw Hill, 1973).
6. Group Theory- M. Hamermesh (Addison-Wesley, 1964).
7. Applied Mathematics for Engineers and Physicists, L.A. Pipes, Harvil, McGraw Hill Publication
8. Introduction to Mathematical Physics- C. Harper. PrinticeHall .
9. The Mathematics of Physics and Chemistry- Murphy and Margenau.
10. Mathematical Physics, Satyaprakash, Sultan Chand & Sons, New Delhi, 1985.
11. Mechanics- L.D. Landau and E.M. Lifshitz.
12. Theoretical Physics- G. Joos.
13. Classical Mechanics – H. Goldstein, Addison wesley, 1980.
14. Introduction to classical mechanics-R.G. Takwale& P.S. Puranik, TMH ,New Delhi, 1983.
15. Classical Mechanics, N.C.Rana and P.S. Joag, TMH, 1991.

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CORE SUBJECT: Course 2: QUANTUM & STATISTICAL MECHANICS:

UNIT-1 Mathematical preliminaries : A brief review of finite and infinite dimensional vector spaces, linear operators over an n- dimensional vector space V_n, Matrix representation of a linear operator in a given basis of V_n, The algebra of linear operators, effect of change of basis, invariant subspace and the eigen value problem of the linear operator, inner product, examples- function spaces,

UNIT-2 Definition of Hilbert space, Hermitian and Unitary operator and matrices, Properties of the eigen value and eigen vectors of these operators, Theorem of commuting and common set of eigen vectors. Properties of the Dirac delta function.

UNIT-3 Fundamental Concept of Quantum Mechanics: Schrodinger equation, Born's interpretation of the wave function, normalization, superposition principle, qualitative discussion of a wave packet, Heisenberg position and momentum uncertainty relation. Postulates of quantum mechanics kets, bras and operators, matrix representations.

UNIT-4 Mathematical definition of an observable, commuting and non-commuting observable and uncertainty relations. Eigen values and expectation values of observable and their relations with measurements, reduction of state, Ehrenfest theorem, wave functions in position and momentum space.

One dimensional potential barriers: Finite potential barrier, tunneling resonance.

25 hours.(03 questions)

UNIT-5 Harmonic oscillator: Schrodinger equation and its solution in terms of Hermite polynomials. Energy basis and solution using creation and annihilation operators.Passage from one basis to another.Concept of zero-point energy.

Hydrogen atom: Reduction of the two-body problem, reduced mass of the electron, separation of variables. Solution of the Schrodinger equation,
Orbital angular momentum, communication relations, spherical harmonics as eigen states, parity, Energyeigen states, degeneracy.

UNIT-6 Spin:- Stern-Gerlach experiment spin of the electron. Eigen states of angular momentum operators. Addition of two angular momenta. Product coupled bases, singlet and triplet states of two electrons, identical particles, exchange degeneracy symmetric and antisymmetric states, Slater determinant, Pauli exclusion principle. A brief discussion of the Pauli wave mechanics.

UNIT-7 Approximation methods:- Time independent perturbation theory, First order perturbation for non-degenerate case, example of Zeeman effect. Variation method, ground state of Helium atom.

Time dependent perturbation theory: First order perturbation: mention of higher orders. periodic perturbation, Transition probability, Fermi Golden rule.
25 hours.(03 questions)

UNIT-8 STATISTICAL MECHANICS: Macroscopic and Microscopic states of a system. Systems of Identical particles.Criterion for distinguishability and indistinguishability.The postulate of equal a priory probability. phase space, Liouville theorem, ensemble, statistical equilibrium, Gibb's paradox , Sackur-Tetrode equation. Equilibrium energy distribution of fermions and bosons obtained by the elementary method of statistics. The distribution formula in differential notation.The Maxwell-Boltzmann tail of the quantum distribution formulae. The Maxwell distribution.

UNIT-9 Boltzmann equipartition theorem. Application to lattice specific heats- DulongandPetit's law Maxwell velocity distribution. Statistical interpretation of entropy.

Degenerate Bose gas.Bose condensation-application to Superfluidity.Plank's law of black body radiation.Degenerate Fermi gas.The specific heat of a Fermi gas at absolute zero.

25 hours(3 questions).

BOOKS FOR REFERENCE:

1. Quantum Mechanics- PAM Dirac.
2. Advanced Quantum Theory- T. Roman.
3. A text book of Quantum Mechanics- P.M. Mathews and K. Venkatesan. TMH, 1976.
4. Quantum Mechanics- V.K. Thankappan, Wiley Eastern, 1985.

5. Quantum Mechanics- E. Merzbacher.
6. Quantum Mechanics- A. Messiah.
7. Quantum Mechanics- A.S. Davydov.
8. Quantum Mechanics- L.D. London and E.M. Lifshitz.
9. Quantum Mechanics- L.I. Schiff, McGraw Hill publishers, 1955.
10. Quantum Mechanics- J.L. Powell & B. Crasemann, Addison wesley, 1961.
11. Introduction to Quantum Mechanics- L. Pauling & E.B. Wilson, McGraw Hill, 1935.
12. Introduction to Quantum Mechanics- Pitt. Dicke& J.P. Wittke.
13. Principles of Quantum Mechanics- R. Shankar, II Ed. 1984, Plenum ,NY.
14. Modern Quantum Mechanics J.J.Sakurai , Addison-wesley , 1999.
15. Quantum Mechanics- F. Schwabl, Narosa Publishing House, New Delhi.
16. Quantum Mechanics- B.K. Agarwal&Hariprakash ,PHI, New Delhi, 1997.
17. Statistical Mechanics- K. Huang, Wley Eastern Ltd., 1986.
18. Statistical Mechanics- L.D. Landau & E.M. Lifshitz.
19. Statistical Mechanics- B.K.Agarwal& M. Eisner, Wiley Eastern, 1989.
20. Statistical Mechanics and properties of matter – E.S.R. Gopal ,Macmillian, 1976.

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CORE SUBJECT: Course 3: SOLID STATE PHYSICS

UNIT-1 CRYSTAL STRUCTURE: Lattice points and space lattice, lattice transnational vector, basis and crystal structure, primitive and non-primitive cells, fundamental types of lattices, Miller indices, symmetry elements, concepts of point groups and space groups, examples of simple crystal structures.

UNIT-2 X-RAY DIFFRACTION: Scattering of x-rays by an electron, atom., atomic scattering factor. Geometrical structure factor. Laue conditions and Bragg's law, Brillouin Zones, Reciprocal lattice and its properties. Ewald's sphere and its construction.Systematic absences of lines in the case of cubic crystals.Structure factor calculations of NaCl, KCl and diamond.

UNIT-3 EXPERIMENTAL METHODS: Laue, Rotation and powder photographs.

CRYSTAL BINDING: Metallic, ionic, valence and Van der waal's types of binding.

MAGNETIC PROPERTIES OF SOLIDS: Classification, Diamagnetism and its origin, Langevin theory of diamagnetism, Paramagnetism, quantum theory of paramagnetism, Brillouin function. Ferro-magnetism.Weiss molecular field theory.

25 hour(03 questions)

UNIT-4 SUPERCONDUCTIVITY: Experimental facts. Phenomenological theory.Londonequations.Thermodynamics of superconductors.specific heat in superconducting stage.Qualitative ideas of theories of superconductivity.

DIELECTRIC PROPERTIES: Introduction, Review of basic formula, microscopic concepts of polarization Local electric field in solids, Clausius- Mosotti relation and Lorentz-Lorenz relation.

UNIT-5 FREE ELECTRON THEORY OF METALS: failures of classical theory.

(Sommerfeld's simple model. Free electron gas. Density of energy states.Fermienergy.Average energy of electrons.Variation of Fermi energy and average energy with temperature.Electronic specific heat.Paramagnetism of free electrons.Thermionic emission from metals. Electrical conductivity- simple model. Drift velocity and relaxation time. Thermal conductivity.Wiedemann Franz law. Hall effect.)

25 hour (03 questions)

UNIT-6 BAND THEORY OF SOLIDS: Elementary ideas of formation of energy bands. Bloch function. Kronig-penney model, number of states in a band ,Energy gap. Distinction between metals, insulators and intrinsic semiconductors.concept of holes, equation of motion for electrons and holes, effective mass of electrons and holes.

UNIT-7 SEMICONDUCTORS: Introduction to semi conductors, band structure of semi conductors, Intrinsic semiconductors, conductivity and temperature, statistics of electrons and holes in Intrinsic semiconductors, electrical conductivity.

UNIT-8 IMPERFECTIONS IN CRYSTALS: - Discovery and classification of imperfections, point defects – Frenkal&Schottky defects, concentration of point defects. Line defects; dislocation types , dislocation theory.

UNIT-9 CRYSTAL GROWTH: Solution methods, Czekrolski ,Bridgeman, melt and Zone refining techniques.

ELECTRON AND NEUTRON DIFFRACTION: Techniques and applications to the study ofthin films and the crystal structure respectively.

25 hours(03 questions)

TEXT BOOKS:

1. Solid State Physics- A. J. Dekker, Macmillan India Ltd., Bangalore, 1981.
2. Solid State Physics- C. Kittel, V Ed., Wiley Eastern Ltd., 1976.
3. Elementary Solid state physics,- M.A. Omar, Addissonwesley, New Delhi,2000.
4. Solid state Physics- S.O. Pillai. New age international publication. – 2002.
5. Solid state Physics- M.A. Wahab, Narosa publishing house, New Delhi.- 1999.

BOOKS FOR REFERENCE:

1. Modern theory of Solids- Seitz.
2. Semiconductors Devices-Physics and Technology- S.M. Sze.
3. Introduction to Solids – L. Azoroff.
4. Solid State Physics- H.C. Gupta- Vikas publishing house, New Delhi.-2002.

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CORE SUBJECT: Course 4:ELECTRONICS:

UNIT-1 NETWORK ANALYSIS: Method of solving networks. Mesh current and node voltage equations. Transfer and driving point impedance and admittance.Thevenin's and Norton's theorem and its applications. Maximum power transfer theorem. Network topology.Tie-set and Cut-set matrices.Transformation of matrices. Two port networks, □

and T equivalents. Laplace transformation techniques for network analysis.

UNIT-2 FILTERS: Types of filters, Conditions for pass band and stop band. Low, high and band pass filters ((□ and T sections), Characteristic impedance. constant K type and M-derived filters, applications, Active filters, advantages of active filters over passive filters.

UNIT-3 TRANSMISSION LINES: Propagation of voltage and current on the lines, line attenuation, characteristic impedance. Reflection coefficient, standing wave ratio, Infinite, short-circuited and open- circuited lines. Transmission line as a circuit element.impedance matching.

25 hours (03 questions).

UNIT-4 DEVICES AND CHARACTERISTICS: Junction diodes. Zenerdiodes.Tunneldiodes.Transistors., FET, MOSFET, UJT, SCR, photo- diodes, Opto-isolators, Regulated power supplies: series and shunt regulators, current regulators.

UNIT-5 Transistor amplifiers: Frequency response, CE, CB and CC amplifiers- biasing methods-comparison of the three basic configurations- multistage amplifiers, methods of coupling (qualitative)

UNIT-6 Transistor Oscillators: Feedback requirements, criteria for oscillations, basic feedback equation, phase shifts oscillator, Wien bridge oscillator, Hartley and colpitts oscillator. Multivibrators: Astable, monostable and bistablemultivibrators.

25 hours (03 questions).

UNIT-7 Operational amplifiers: Ideal op-amp characteristics, inverting and non inverving amplifiers, input and output impedance, CMRR, PSRR closed loop gain, adder and substractor circuits, voltage followers, differential amplifier ,differentiator and integrator, First order low pass and high pass filters- Op amp oscillators- Wien bridge and phase shift oscillators.

UNIT-8 Digital electronics: Number systems and codes: Binary, hexadecimal and octal, BCD, Grey codes and Excess-3 codes, Logic gates : AND , OR , NOR, NOT, NAND, XOR gates, truth tables,

UNIT-9 De-Morgan's theorems, Boolean algebra, Boolean functions, Simplification of Boolean functions using Karnaugh maps, arithmetic circuits, HALF ADDER, FULL ADDER, Flip-flops, counters. 25 hours (03 questions)

BOOKS FOR REFERENCE:

1. Linear Circuits - part-II – P.E. Scott.
2. Modern network analysis- E.M. Reza and S. Seely.
3. Networks, Lines and Fields- J.D. Ryder.
4. Theory of A.C. Circuits- S. Fich and J.L. Patter.
5. Operational amplifiers- S.V. Subramanyam.
6. Transistor circuit- Analysis and Design – F.C. fitchen Van Wostrand (Reinhold Co., 1966).
7. Electronics fundamentals and applications ,- J.D. Ryder, PHI, 1981.
8. Network analysis (III Ed.)- Van valkenberg, PHI 1990.
9. Electronic Circuits- Millman and Halkias.

10. Electronic principles- A.P. Malvino, TMH, 1983.
11. Digital principles and applications- A.P. Malvino and Leach., TMH, 1979.
12. Operational amplifier and linear integrated circuits- R.A. Gaekwad, PHI, 1991.
13. Introduction to semi conductors devices: M.S. Tyagi.

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M.SC. FINAL

CORE SUBJECT:

Course5: ELECTRODYNAMICS, OPTICS AND MOLECULAR SPECTROSCOPY:

UNIT-1 ELECTRODYNAMICS:-ELECTROSTATICS;Coulomb'slaw.Electrostatic field intensity, Electrostatic potential.Equations of Poisson and Laplace. Electrostatic potential due to an arbitrary charge distribution (dipole and quadruple moments). Multipole moments.

UNIT-2 MAGNETOSTATICS: Magnetic forces. Biot –Savart law. Lorentz force. Amperes circuital law.Magnetic scalar potential.Magnetic dipole moment of a current loop.

Maxwell's field equations and material equations(setting up) E-H symmetry. Lorentz lemma.Wave equation. Propagation of plane electromagnetic wave in free space.nature of the plane wave.Poynting vector. Propagation of plane waves in a conducting medium. propagation of plane wave in Ionised gases. Conductivity of ionisedgases.Plasma angular frequency.

UNIT-3 Electromagnetic potentials Scalar and vector potentials.Lorentz condition. Gauge transformations of the potentials. Lorentz and solenoidal gauge conditions.Wave equation for scalar and vector potentials and their retarded solutions.Radiation from an electric and magnetic dipole.Fields of moving charges.Lienardwiechertpotentials.Radiation from an accelerated charge at high velocities.

25 hours(03 questions)

UNIT-4 OPTICS:-REFLECTION AND REFRACTIONS: Boundary conditions at a surface ofdiscontinuity (no derivation). Laws of reflection and refraction.Fresnel's formulae for reflection and refraction.Graphicaldiscussion.Polarization by reflection.Brewster'slaw.Total internal reflection.Fresnel's Rhomb.

ELECTROMAGNETIC THEORY OF DISPERSION.Lorentz-Lorentz relation.Normal and anomalous dispersion.Sellmeir-Drudefromula.Complex refractive index.

INTERFERENCE: General theory of interference of two monochromatic waves. Multiple beam interference with plane parallel plate.Fabry-perotinterferometer.Resolving power.

DIFRACTION: General formulation of Kirchhoff's theory of diffraction. Fraunhofer and Fresnel diffraction at a circular aperture.

UNIT-5 PROPAGATION OF ELECTROMAGNETIC WAVES IN AN ISOTROPIC MEDIUM:

Structure of the plane waves in an anisotropic medium. Wave surface, wave velocity surface and ray velocity surface. Dielectric and index tensors. Solution of wave propagation (Geometrical method) using index ellipsoid Fresnel's equation for normal. Optical classification of crystals, Light propagation in uniaxial and biaxial crystals.Interference with crystal plates. Interference figures in uniaxial crystals. Pattern in biaxial crystals.

UNIT-6 LASERS:- General considerations and properties of laser radiation Rate equations and principles of laser. Ruby He-Ne &Nd-YAG lasers.Elements of non-linear optics.Opticalrectification.Second harmonic generation.frequencymixing.Applications of laser in spectroscopy & Holography (Principle and applications).

25 hours (03 questions).

UNIT- 7 MOLECULAR SPECTROSCOPY:

ELECTRONIC SPECTROSCOPY: Electronic spectra of diatomic molecules. P.O & R branches.Rotational fine structure.Band head and shading.Fortrat diagram evaluation of I, r and Band origin. Dissociated energy.Isotope shift, Franck- Condon principle and parabola.Electronic spectra of polyatomic molecules.

UNIT-8 PHOTOELECTRON SPECTRA: Basic principles. Outline of experimental method. Application to the determination of Ionization potential. Mossbauer spectroscopy-Principles, instrumentation. Isomer shift and biological applications.

SPIN RESONANCE SPECTROSCOPY: Spin and applied field resonance condition. Relaxation processes. NMR spectroscopy. Outline of chemical shift and spin-spin interaction. Block diagram of NMR spectrometer .Structural determination. NMR imaging.

UNIT-9 ESR SPECTROSCOPY: Systems of unpaired electrons. G-factor.Fine structure and hyperfine structure. Block diagram of ESR spectrometer. spin labeling of molecules.

RAMAN SPECTROSCOPY: Rotational and vibrational Raman spectra. Correlation with IR spectra. Polarization of Raman lines. Molecular structure. Laser Raman spectroscopy and its applications (qualitative).

25 hours (03 questions)

BOOKS FOR REFERENCE:

1. Electromagnetic fields and waves- D. Corson and P. Lorrain, CBS publishers, 1986.
2. Classical Electrodynamics- J.D. jackson, Wiley Eastern Ltd., 1983.
3. Electrodynamics- Sommerfeld.
4. Electromagnetic theory- Panofsky and Phillips.
5. Optics-Max Born.
6. Geometrical and Physicsl Optics- Longhurst.
7. Optics- A. Ghatak, TMH, 1977.
8. Light- Ditchburn.
9. Laser Physics- L.V. Tarasov.
10. Lasers and their applications- M. Beesley.
11. Optics and Lasers- Young.
12. Fundamentals of Molecular spectroscopy- C.N. Banwell, TMH, 1984.
13. Basic principles of spectroscopy- Chang.

14. Spectroscopy – S.Walker&B.P.Straugan, vol.,1,2,3, Chapman & Hall, 1976.
15. Introduction to electrodynamics- D.J. Griffiths, PHI, 1991.
16. Electromagnetics- B.B. Laud.
17. Optics- Matveev.
18. Lasers and Nonlinear optics(II ed) - B.B. Laud, Wiley Eastern.
19. Elements of Spectroscopy- by Gupta and Kumar.,PragathiPrakashan, 1984.

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CORE SUBJECT:

Course 6:NUCLEAR PHYSICS, COSMIC RAYS AND ELEMENTARY PARTICLES.

UNIT-1 PROPERTIES OF THE NUCLEUS:

Nuclear radius. Determination by – alpha decay, mirror nuclei, mesic x-rays, electron scattering and nuclear scattering methods. Nuclear moments: Spin, electric and magnetic moments. Relation between J and on the basis of single particle model. Determination of nuclear spin by molecular beam experiment. Anomalous magnetic moment of the neutron, experimentaldetermination. Parity, Isospin and statistics.

UNIT-2 PASSAGE OF CHARGED PARTICLES AND GAMMA RAYS THROUGH MATTER:

Energy loss due to ionization for proton and the charged particles and electrons. Range energy relations. Radiation loss of the fast electrons. External and Internal bremsstrahlung, (Interaction of gamma rays with matter, Photo effect, Compton effect, pair production.).

DETECTORS: Gas filled counters, scintillation counters, cerenkov counter, nuclear emulsions.

UNIT-3 PARTICLE ACCELERATORS: Microtron, Betatron, Betatron oscillation in cyclic accelerators. Electron and proton synchrotron. AG accelerators storage rings.

NUCLEAR REACTIONS: Relativistic and non-relativistic kinematics Lab and C.M. systems. Transformation of energy, momentum, angles solid angle, etc., from one system to another. Q-values, experimental determination. Threshold for the creation of new particles, types of reactions. Nuclear cross section. Total and differential. Relation between cross section and mean free path.

25 hours(03 questions).

UNIT-4 (NUCLEAR DECAY: □ -ray spectra, Fine structure and long range □ - particles. Geiger-Nuttallaw.Theory of □ - decay.□- decay spectrum.Neutrino hypothesis. Fermi theory of□- decay , neutrino mass from □ - ray spectral shape, Curie plot, ft-values and forbidden transitions. Theory of K-electron capture Neutrinos. Double □- decay) anti-neutrino, helicity, interaction cross section. Methods of excitation of nuclei, multipole transitions and internal conversion(Qualitative treatment only) Nuclear Isomerism, Islands of isomerism. Resonance scattering of gamma rays. Mossbauer effect. Mass of the photon.Atomic phenomena following electron capture and internal conversion.characteristic x- rays.Auger effect. Fluorescence yields.

UNIT-5 NUCLEAR FORCES: General features of nuclear forces. Spin dependence. Charge independence. Exchange character, etc., Meson theory of nuclear forces(Yukawa's theory only). Qualitative explanation of anomalous magnetic moments of neutron.

NUCLEAR MODELS: Liquid drop model, semi empirical mass formula Its applications to: (1)stability of isobars (2) fission process. Shell model. Single particle potentials.Spin orbit coupling

& level scheme. The Fermi gas model, Estimation of well depth. Leveldensity.Nuclearevaporation.Effect of Fermi momentum in particle production.

25hours (03 questions).

UNIT-6 REACTOR PHYSICS: Slowing down of neutrons. Moderators, condition for controlled chain reactions in a homogeneous reactor, critical size, effect of reflector, Breeder reactor

UNIT-7 COSMIC RAYS: Primary cosmic rays. Origin, composition and energy spectrum.Fermi mechanism of acceleration.cosmicray showers: types of showers and their experimental study. Elements of cascade theory.geomagneticeffects.Motion of a charged particle in earth's magnetic field.Latitude, altitude and azimuthal effects.Stormer's cone. Van Allen belts.

UNIT-8 ELEMENTARY PARTICLES: Discovery and properties. Antiparticles production and decay kinematics. Outline of methods of determining mass, spin and life time.Fast production and slow decay, T- puzzle, Strange particles.Gell-Mann and Nishijimascheme.Non-conservation of parity in decay interactions.Experiments with Co-60.

UNIT-9 classification of elementary particles and their interactions.Hyper nuclei, neutral kaons and their mixed strangeness.Mesic atoms, Muon catalysis, electron and muon neutrinos, neutrino astronomy.Resonance particles, symmetry in particles interactions.Eight-fold way, Quarks. 25 hours (3 questions).

BOOKS FOR REFERENCES

1. Introductory Nuclear Physics- Halliday.
2. Nuclear Physics-Green.
3. Nuclear Physics-Kaplan.
4. Introduction to Nuclear Physics-Enge., H. Addison-Wesley Ltd., NY 1971.
5. Nuclei and Particles- Segre.
6. The atomic nucleus-Evans. R.
7. Cosmic ray and Nuclear Physics- Janossy.
8. High Energy particles- Rosei.
9. Modern Physics- Leighton.
10. Cosmic rays- Wilson.
11. The fundamental particles- C.E. Swartz.
12. The study of elementary particles by the photographic method. C.F. Powell, P.H. Fowler and d.H. Perkins.
13. Elementary particles- C.N. Yanga.
14. Elementary particles- Thorndike and Frisch.

15. Fundamental particles- K. Nishijima.
16. Nuclear Radiation detectors- S.S. Kapoor&V.S.Ramamurthy, Wiley Eastern, New Delhi,1986.
17. The Atomic Nucleus - Evans R.D. TMH, 1955.
18. Nuclear Physics - I. Kaplan
19. Nuclear Physics -Halliday.
20. Introduction to elementary particles- D. Griffiths- John Wiley. 1987.
21. Nuclear Physics- R.R. Roy & B.P. Nigam, Wiley Eastern Ltd., 1983.
22. Introductory Nuclear Physics- Kenneth S. Krane- John Wiley & Sons, 1987.

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Course 7:- SPECIAL SUBJECT: SOLID STATE PHYSICS-I:

UNIT-1 Lattice dynamics:- Introduction, dynamics of the chain of identical atoms, Dynamics of diatomic linear chain, dynamics of identical atoms in three dimensions, experimental measurement of dispersion relation, Anhormonicity and thermal expansion.

Transport properties:-

UNIT-2 Electrical conductivity of metals: Simple model, ideas of drift velocity and relaxation time. Boltzmann transport equation, Sommerfeld theory of electrical conductivity. Temperature dependence of resistivity of metals at high, low and at very low temperatures.electron- phonon collision, Matthiesson's rule, residual resistivity, Hall effect, electronic specific heat.

UNIT-3 Thermal conductivity of Insulators and Metals:-Phonon-Phonon interactions-Normal and umklapp process, Thermal conductivity of insulators at high and low temperatures. Effect of impurities and imperfections on the thermal conductivity. Effect of finite size of the specimen Derivation of the expression for thermal conductivity of metals. comparison of (i) thermal conductivity of metals due to electrons and phonons and (ii) Thermal conductivity of metals and dielectrics.

25 hours (03 questions).

UNIT-4 Dielectric Prperties: Macroscopic snd microscopic views of dielectric response, complexdielectrics constant & dielectric losses, dielectric relaxation in solids, Debye equations, electronic , ionic and orientation polarisabilities. PolarisationCatastrophe,.The classical theory of electronic polarization and optical absorption. Experimental determination of dielectricconstant and relaxation time

UNIT-5 Ferroelectrics: - General properties, classifications and properties, dipole theory of ferroelectricity, objections against the dipole theory, ionic displacements and the behaviour of Barium Titanate above the curie temperature, theory of spontaneous polarisation of Barium Titanate, Thermodynamics of ferroelectrics, ferroelectric domains, Antiferroelectricity and Ferrielectricity.

UNIT-6 Luminescence: General remarks, excitation & emission, Franck- Condon principle, Decay mechanisms, temperature dependent & independent decays. Thermoluminescence and glow curve Electro luminescence, Gudden- Pohl effect, theDestrian effect. carrier injection luminescence.

25 hours(3 questions)

Ionic conductivity :- Lattice defects in ionic crystals, the hydration energy of ions, The activation energy for the formation of defects in ionic crystals, Ionic conductivity in pure and with divalent impurity alkali halides.

UNIT-7 Atomic Diffusion in solids ;- First and second Fick's law. Solution to the Fick's second law. Some applications of diffusions, diffusion measurements, Random walk treatment of diffusion, The Kirkendall effect, diffusion in alkali halides, diffusion and ionic conductivity, Nernst –Einstein .

UNIT-8 Optical Properties of materials:- Absorption processes, photo conductivity, photo conductivity in crystals containing excess metal, photo electric effect, photo electric effect in alkali halides.

UNIT-9 photovoltaic effect, colour centers: types of colour centers, other electronic centers, transformation of F centers into F^1 centers and vice-versa. Colour centers resulting from excess halogen, colour centers produced by irradiation with x-rays.

25 hours(03 questions)

TEXT BOOKS:

1. Charles Kittel, Introduction to solids state Physics, Wiley, 5thedition(1976).
2. A.J. Dekker, solid state Physics, Macmillan India . Ltd., Bangalore ,1981.
3. M.A. Omar, Elementary solid state Physics- Addison- Wesley, 2000.
4. H.C. Gupta,' Solid state Physics' Vikars publishing house, New Delhi, 2001.
5. S.O. Pillai, solid state Physics, V edition, New age international publishers, 2002

BOOKS FOR REFERENCE:

1. S. Mrowec, Defects and diffusion in solids- an introduction ,Elseviewr Scientific (1980).
2. J.P. Poirier, Physics of defects, North Holland(1980).
3. A.M. Stoneham, Theory of defects in solids , Oxford University Press(1985).
4. J.S. Blakemore, Solid state Physics, II edition, Cambridge University Press, (1974).
5. M.A. Wahab , Solids state Physics, Narosa Publishing house, New Delhi 1999.

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Course 8: SPECIAL PAPER:SOLID STATE PHYSICS- II

UNIT-1 Magnetic properties of solids:

Ferromagnetism:- Weiss theory, spontaneous magnetisation and its variation with temperature, Heisenberg exchange interaction, ferromagnetic domains, domain theory,Spin waves in one dimension, quantisation of spin waves, thermal excitation of magnons, Bloch's T3/2 law **.**

UNIT-2 Antiferromagnetism ; two sublattice model, Neel temperature, susceptibility, Neutron diffraction. **Ferrimagnetism:** structure of ferrite, saturation magnetisation, elements of Neel's theory.

UNIT-3 Paramagnetic relaxation: Phenomenological description, complex susceptibility,

casimir and Dupre'sthermodynamical theory of spin lattice relaxation, spin-spin relaxation, magnetic resonance (ESR & NMR). Bloch equations and their steady solutions, line width, ESR and NMR experiments.

UNIT-4 Superfluidity: Permanent liquids, the melting curve, liquid ^{3}He and liquid ^{4}He., liquid ^{3}He; specific heat susceptibility, transport co-efficient, perfect Fermi gas , liquid ^{3}He as a Fermi gas, properties of , liquid ^{3}He zero sound, solutions of ^{3}He in liquid ^{4}He, the melting curve.

25 hours (03 questions)

UNIT-5 Impurity Semiconductors: Carrier concentration, effect of temperature and impurity concentrations on the carrier concentrations, electrical neutrality condition, Fermi energy, variation of Fermi energy with temperature and impurity density. Effect of impurity density and temperature on Fermi energy at very low temperature, mobility of current carries,

Effect of temperature and doping on mobility, electrical conductivity, variation of electrical conductivity with respect to band gap. Impurity band conductivity.

UNIT-6 Hall effect in Intrinsic and extrinsic semiconductors:

Expression for Hall coefficient in terms of mobility and carrier densities, Hall mobility and Hall factor: Effect of temperature, impurity concentration and magnetic field on Hall mobility. Magneto- resistance phenomenon(qualitative).

Excess carriers in semiconductors: Generation and recombination rates, transport behaviour of excess carriers, continuity equation for excess carriers, Einstein's equations, expression for the diffusion length.

25 hours (03 Questions)

UNIT-7 High field transport :- Expression for drift velocity and electron temperature, Gunn effect space charge domains, expression for the space charge density, super lattice and Bloch oscillators.

Metal- Semiconductor contacts.Schottky barrier, P-N junctions: theory of carrier transport in P-n junctions, characteristics of potential junctions and deviations from ideality. Capacitance effects: Space charge and diffusion capacitance. Impurity profiling through capacitance measurements.TunnelandZener diode and applications.

UNIT-8 Photo conductivity: Role of traps and recombination. Photo voltaic devices for solar cells and radiation detection. Luminescence; light emitting diodes and laser action in P-n junction diodes.

UNIT-9 Superconductivity: Type –I & Type-II super conductors, superconductor in AC fields, BCS theory, flux quantisation. Quantum tunneling, Josephson's junction, theory of DC and AC Josephson effect, High T_C superconductors, applications of super conductors.

25 hours (03 questions)

TEXT BOOKS:

1. Charles Kittel, Introduction to solids state Physics, Wiley, 5thedition(1976).
2. A.J. Dekker, solid state Physics, Macmillan India Ltd, Bangalore, 1981.
3. M.A. Omar, Elementary solid state Physics- Addison- Wesley, New Delhi, 2000.
4. H.C. Gupta,' Solid state Physics' Vikars publishing house, New Delhi, 2001.
5. S.O. Pillai, solid state Physics, V edition, New age international publishers, 2002

BOOKS FOR REFERENCE:

1. S. Mrowec, Defects and diffusion in solids- an introduction ,Elseviewr Scientific (1980).
2. J.P. Poinier, Physics of defects, North Holland(1980).
3. A.M. Stonecham, Theory of defects in solids , Oxford University Press(1985).
4. J.S. Blakemore, Solid state Physics, II edition, Cambridge University Press, (1974).
5. Solid State and semiconductor Physics, II edition, J.P. Mckelvey, 1966, Harper & Row, NY.
6. Physics of semiconductor devices, Dilip K. Roy, University Press, 1992, Hyderabad.

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

PROGRAMME PROJECT REPORT

for

Bachelor of Education (Special Education) Programme

Submitted to
UGC, DISTANCE EDUCATION BUREAU (DEB)
New Delhi

PROGRAMME PROJECT REPORT (PPR)

Bachelor of Education (Special Education) Programme

1. Introduction About the Programme

The Bachelor of Education (B.Ed.) Special Education Programme fulfils the mission of MPBOU i.e. to serve the marginalized section of the society across state by providing educational opportunity at the learners' doorstep to get a profession degree in teacher education. This programme is a judicious blend of both theoretical and practical courses throughout the academic years prepare and strengthen the professional in the field of teacher education. Its main thrust is to prepare competent teacher at school level. The two years B.Ed. distance mode programme is designed and developed in accordance with the Rehabilitation Council of India (RCI) guidelines for both working teachers at elementary levels who wish to upgrade their knowledge in self paced manner or fresh trained elementary teaching diploma holders who wish to enhance their professional qualification to broaden their job opportunities. The target groups of the programme are diploma holders from University, RCI, SCERT, DIETS, and from State Boards Certified trained teaching professionals like BTC, STC etc.

2. Objectives of the Programme

The programme aims to achieve the following objectives

a. To systematize experience and strengthen the teaching competencies.
b. To acquire knowledge and develop understanding of various methods and approaches of teaching.
c. To help teachers in understanding the nature of the learners and the learning process.
d. To develop skills involved in dealing with the academic and personal problems of the learners.
e. To understand the various procedures and techniques of evaluation at school level.

3. Procedures of Admission, Evaluation and other details

Admission to this programme is provided to the eligible candidates through an entrance examination conducted by DME, Madhya Pradesh Bhoj Open Universityat the various places throughout the country.

The curriculum is transacted though the Print Self Learning Materials (SLM) and Face to Face Counselling Session supplimented by audio-video programme.

The duration of the programme for success completion is minimum two years

and maximum five years.

The programme is transacted through the RCI approved Study Centres across the country strictly as per the RCI norms and standard. All the study centres where the

programme is offered have qualifed and trained teacher educators and required staffs to facilitate learner centric qualitiful teaching learnings as per prescribed curriculum.

Counselling sessions are held at the study centre normally on weekends within the general academic scheduled of the Programme. Five counselling sessions are organized in all theory courses seperatly. The counselling duration will be of 2 hours in each of the five sessions. Besides, couselling sessions, there are other compulsory activities like workshops as well as teaching practices in both the academic years.

The evaluation of the admitted students to this programme is done on the basis to their tutor marked assignments (30% weightage in the curriculum), performance in the annual tearm-end-examination as well as in the workshop and teaching practice by the competent teacher educators.

Annual examination is the major component of the evaluation system and it carries 70%weightage in a final result. You must fill in the Annual Examination form.

Generally the study centres happens to be the examination centre but in some cases where examination centres are alloted at some other institutions by giving the prior information to the appearing students.

All the study centres offering B.Ed. (Distance Mode) programme have sufficient library resources for the distance learners.

The total cost of the programme is Rs. 36000 (thirty Six thousands) payble in two equal annual instalments in both the academic years of the programme.

Quality assurance mechanism and expected programme outcomes is analysed strictly on the RCI Parameters/guidelines by the DME, Madhya Pradesh Bhoj Open Universityannualy

Examination date sheets (schedule which indicates the date and time of examination for each course) are sent to all the study centres approximately 1 month in advance.

Programme Structure

The Programme of B.Ed. Spl. Ed. (Disability Specialization & Inclusive Education) will consist of 40 Courses, 19 Theory Courses and 21 Practical Courses. Different components of the programme in theory and practical courses are given below under Group A to Group G. These consist of two major components: (1) the courses in the area of non-disability and Foundation component in Disability area will be compulsory for all candidates, and (2) the others will be any of the Four specialized streams in the areas of Visual Impairment, Mental Retardation, Learning Disability and Hearing Impairment.

Group A - Core Pedagogy Theory Courses: There will be following 3 Pedagogy Courses which are all compulsory and the students' time required for each of the courses is 60 hours.

SECP-01	Human Growth & Development
SECP-02	Contemporary India and Education
SECP-03	Learning, Teaching and Assessment

Group B - Methodology Courses: Choosing one from each of the following two sub-groups any 2 courses have to be offered by the students. The students' time required for each of the courses is 60 hours.

Sub-Group B-1: Any one course from the following

SECM-01	Teaching of English (Special Reference to Disability)
SECM-02	Teaching of Hindi. (Special Reference to Disability)

Sub-Group B-2: Any one course from the following

SECM-04	Teaching of Science (Special Reference to Disability)
SECM-05	Teaching of Mathematics (Special Reference to Disability)
SECM-06	Teaching of Social Studies (Special Reference to Disability)

Group C – Cross Disability & Inclusion Courses: There will be following 6 Courses first 4 are all compulsory and the students' time required for each of the courses is 30 hours. Choosing one from each of the following two sub-groups (5 & 6) any 2 courses have to be offered by the students. The students' time required for each of the courses is 30 hours.

SECD-01	Inclusive Education
SECD-02	Introduction to Sensory Disabilities (VI, HI, Deaf-Blind)
SECD-03	Introduction to Neuro Developmental Disabilities (LD, MR (ID), ASD)
SECD-04	Introduction to Locomotor & Multiple Disabilities (CP, MD)

Sub-Group C-1: Any one course from the following

SECD-05 Skill-based Optional Course (Cross Disability and Inclusion) ANY ONE

SECD 05 GC	Guidance and Counselling
SECD 05 EC	Early Childhood Care & Education
SECD 05 ABA	Applied Behavioural Analysis
SECD 05 CBR	Community Based Rehabilitation
SECD 05 ICT	Application of ICT in Classroom
SECD 05 GD	Gender and Disability
SECD 05 BSD	Braille and Assistive Devices

SECD-06 Skill-based Optional Course (Disability Specialization) ANY ONE

SECD 06 O&M	Orientation & Mobility
SECD 06 CO:ORA	Communication Options: Oralism
SECD 06 CO:MO	Communication Options: Manual Options (Indian Sign Language)
SECD 06 AAC	Augmentative and Alternative Communication
SECD 06 MLD	Management of Learning Disability
SECD 06 VR	Vocational Rehabilitation & Transition to Job Placement

Group D – Specialized Theory Courses in Disability Areas: Any one of the following specialized streams will be available for offer. The students' time required for each of the courses is 60 hours.

Speciality Sub-Group:

- **Visual Impairment**
- **Mental Retardation**
- **Hearing Impairment**
- **Learning Disability**

SES HI/VI/MR/LD -01	Assessment and Identification of Needs
SES HI/VI/MR/LD -02	Curriculum Designing, Adaptation and Evaluation
SES HI/VI/MR/LD -03	Intervention and Teaching Strategies
SES HI/VI/MR/LD -04	Technology and Disability
SES HI/VI/MR/LD -05	Psycho Social and Family Issues

Group E – Enhancement of Professional Capacities (EPC) : There will be following 3 Courses which are all compulsory and the students as per specialized stream time required for each of the courses is 60 hours.

SEPC-RRT-VI/MR/HI/LD -01	Reading and Reflecting on Texts
SEPC-DAE-VI/MR/HI/LD -02	Drama and Art in Education
SEPC-SEPC-BR & BS -VI/MR/HI/LD -03	Reading and Reflecting on Texts

Group F - Practical Courses: There will be 21 Practical Courses out of which 7 from non-disability area and 1 for foundation in Disability area will be compulsory for all candidates. The other 7 courses

would be chosen from one of the four different specialized streams & 6 from cross disability & Inclusion.

F-1 Non-Disability Area

Course Code: A 1 (SEPG 01-01) Human Growth & Development

Course Code: A 2 (SEPG 01-02) Contemporary India and Education

Course Code: A 3 (SEPG 01-03) Learning, Teaching and Assessment

Course Code: B 1/2 (SEPG 01-04) Pedagogy of Teaching (Special Reference to Disability) (Hindi / English)

Course Code: B 3/4/5 (SEPG 01-05) Pedagogy of Teaching (Special Reference to Disability) (Science / Math's / Social Studies)

Cross Disability and Inclusion

Course Code: C 6 (SECD 01-06) Inclusive Education

Course Code: C 7 (SECD 01-07) Introduction to Sensory Disabilities (VI, HI, Deaf-Blind)

Course Code: C 8 (SECD 01-08) Introduction to Neuro Developmental Disabilities (LD, MR (ID), ASD)

Course Code: C 9 (SECD 01-09) Introduction to Locomotor & Multiple Disabilities (CP, MD)

PROJECT (Cross Disability & Inclusion)

Course Code: C 10 (SECD 01-10) Skill Based Optional Course (Cross Disability and Inclusion)

Course Code: C 11 (SEPG 01-11) Skill Based Optional Course (Disability Specialization)

Disability Areas: Specialized Streams

F-2-1: Foundation

Course Code: D (SEPB 01) Adaptive Skills & Aids & Appliances

: Specialization

PRACTICAL

Disability Area Specialization

Course Code: D 12 (SEP VI/MR/HI/LD 01) Assessment & Identification of Needs
Course Code: D 13 (SEP VI/MR/HI/LD 02) Curriculum Designing, Adaptation & Evaluation
Course Code: D 14 (SEP VI/MR/HI/LD 03) Intervention & Teaching Strategies
Course Code: D 15 (SEP VI/MR/HI/LD 04) Technology & Disability
Course Code: D 16 (SEP VI/MR/HI/LD 05) Psycho Social & Family Issues

Group G - Teaching Practice Courses: There will be two Practical Courses in Teaching Practice. Out of these, one in non-disability area and another on *Basic Teaching Practice in Inclusive Schools* will be compulsory for all. The other one would be chosen from the three different specialized streams.

Non-Disability Area

SETG-01 Teaching Practice in Non-disability Area (NDA).

Course Code: B 1/2 (SETG-01-01) Pedagogy of Teaching (Hindi / English)

Course Code: B 3/4/5 (SETG-01-02) Pedagogy of Teaching (Science / Math's / Social Studies)

Disability Areas: Specialized Streams

: Teaching Practice in Special Education in Inclusive School

Course Code: D (SETB -01) Teaching Practice in Inclusive School

: Teaching Practice in Special Area (Disability Area)

Course Code: D (SET VI/MR/HI/LD -01) Teaching Practice in Disability Area

Scheme of Evaluation

The Scheme of Evaluation will consist of **two main components**:

- **Continuous Internal Assessment.**
- **Term End Examination.**

Course-wise distribution of marks: See Table 2.

- For each of the courses in Groups A, B, C, D and E the ratio of marks between continuous assessment and term end examination will be 20:80.
- In each Practical course in Groups F and G, the ratio of marks between continuous assessment and term end examination will be 60:40.

Methodology of continuous internal assessment

- The continuous internal assessment in each of the theory courses under Groups A, B, D and E will be based on One Assignment and One Internal Test of 10 marks each per Course during the contact programmes with a total Weightage of 20 marks & for C One Assignment and One Internal Test of 5 marks each per Course during the contact programmes with a total Weightage of 10 marks

Medium of Instruction

The medium of instruction is in Hindi/English.

Faculty and Support Staff Requirements:

The following faculty and support staff is required for this programme.

Staff Category	Required
Core Faculty	06 As per RCI Norms
Laboratory Assistant	3

Clerical Assistant	3

Instructional Delivery mechanisms

The instructional delivery mechanisms of the programme includes SLM- Study materials, Lab instruction manual, Personal contact session for both theory and practical courses of the programme, e-version of the course materials in the form of Video Lectures, e- book, e-tutorials, Webinars, Massive Open Online Courses (MOOC) Courses, Open Educational Resources(OER) and Virtual lab.

Identification of media

The printed version of SLM – study material shall be given to the learners in addition to MOOC, e-tutorial and Virtual lab.

Student Support Services

The student support services will be facilitated by the Directorate of Distance Education, Madhya Pradesh Bhoj Open University, Bhopal and its approved learning centres located in various parts of Madhya Pradesh.

The pre-admission student support services like counseling about the programme including curriculum design, mode of delivery, fee structure and evaluation methods will be explained by the staff at DME or Learning centres. The post - admission student support services like issuing Identity card, study materials will be provided thru Directorate or Learning centres. The face to face contact sessions of the programme for both theory and practical's will be held at the MPBOU. The student support regarding the conduct of examinations, evaluations, publication of results and certificates done by the Office of the Controller of Examinations, Madhya Pradesh Bhoj Open University, Bhopal.

LEARNER SUPPORT CENTRE

The Learner Support Centre to which you have been admitted will remain your Learner Support Centre till you have cleared all components of the programme within the maximum time allowed. No student would be permitted to change his/her Learner Support Centre at any point of time. All the activities related to Counseling, Assignments and Annual Examinations will be held at the Learner Support Centre only. However, the DME, MPBOU reserves the right to discontinue/change the Examination/Learner Support Centre at any point of time as it deem appropriate.

EVALUATION SYSTEM

Assignments

Assignments are the part of continuous evaluation system. The submission of assignments in eachcourse is compulsory. Assignments of a programme carry about 30% weightage.

Annual Examinations

Annual examination is the major component of the evaluation system and it carries 70% weightage in a final result.

Requirement of the laboratory support and library resources

Laboratory Support

A well- equipment Computer Laboratory was established in the Madhya Pradesh Bhoj Open University, Bhopal with necessary software's as per the practical's syllabi for conducting face to face contact sessions for practical courses of this programme.

Library Resources

The Directorate of Distance Education, Madhya Pradesh Bhoj Open University provides library facility with number of books and Self Learning materials for Computer Science Programmes. The library of Madhya Pradesh Bhoj Open University provides the collection of volumes of Self Learning Materials, Printed books, Subscriptions to printed periodicals and Non-book materials in print form for the learner's references. All these library resources are meant for learner's reference purpose only.

Cost estimate of the programme and the provisions:

Expense details	**Amount in (Rs.) Approx.**
Programme development (Single time Investment)	15,00,000/-
Programme delivery (per year)	5,00,000/-
Programme maintenance (per year)	5,00,000/-

Quality assurance mechanism and expected programme outcomes:

University's Moto: to promote education that reaches the unreached through the Open and Distance Learning system and the motto of the University is "reaching the un-reached".

University's Vision and Mission

Vision

Achieving Excellence in all spheres of Education, with particular emphasis on ' PEARL' - Pedagogy, Extension, Administration, Research and Learning.

Mission

Affording a High Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

University Objectives

1. Providing for instructions and training in such branches of Learning at the university may determine.
2. Fostering Research for the Advancement and Dissemination of Knowledge and Application.

Quality Policy

Attaining Benchmark Quality in every domain of 'PEARL' to assure Stakeholder Delightthrough Professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

Quality Quote : Quality Unleashes Opportunities Towards Excellence (QUOTE).

Course benchmarks

The benchmark qualities of the programme may be reviewed based on the performance of students in their end semester examinations and number of enrolments of students. Feedback from the alumni, students, parents, stakeholders and employers will be received to analyze the benchmark qualities for the further improvement of the programme.

Course Code: A 1(SECP 01)

Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

This course exposes student-teachers to the study of child and human development in order togain a better understanding about variations and the influence of socio-cultural-political realities on development. A critical understanding of theoretical perspectives of development would aid in their application in teaching learning process. Through close observation of children in their natural environments the teacher trainee would be able to situate their theoretical knowledge within realistic frames. This course would also be able to equip themto reflect and critique the normative notions of childhood and adolescence.

Objectives

After studying this course the student- teachers will be able to

- *explain the process of development with special focus on infancy, childhood andadolescence.*
- *critically analyze developmental variations among children.*
- *comprehend adolescence as a period of transition and threshold of adulthood.*
- *analyze different factors influencing child development.*

Block 1: Approaches to Human Development

Unit 1:Human development as a discipline from infancy to adulthoodUnit 2:Concepts and Principles of development

Unit 3:Developing Human- Stages (Prenatal development, Infancy, Childhood, Adolescence, Adulthood)

Unit 4:Nature vs Nurture

Unit 5:Domains (Physical, Sensory- perceptual, Cognitive, Socio-emotional, Language & communication, Social relationship)

Block 2: Theoretical Approaches to Development

Unit 1:Cognitive & Social- cognitive theories (Piaget, Vygotsky, Bruner, Bandura)Unit 2:Psychosocial Theory (Erikson)

Unit 3:Psychoanalytic Theory (Freud)

Unit 4:Ecological Theory (Bronfrenbrenner) Unit 5:Holistic Theory of Development (Steiner)

Block 3: The Early Years (Birth to Eight Years)

Unit 1:Prenatal development: Conception, stages and influences on prenatal development

Unit 2:Birth and Neonatal development: Screening the newborn - APGAR Score, Reflexes and responses, neuro-perceptual development

Unit 3:Milestones and variations in Development

Unit 4:Environmental factors influencing early childhood developmentUnit 5:Role of play in enhancing development

Block 4: Early Adolescence (From nine years to eighteen years)

Unit 1:Emerging capabilities across domains of physical and social emotional

Unit 2:Emerging capabilities across domains related to cognition - metacognition, creativity, ethics

Unit 3:Issues related to puberty

Unit 4:Gender and development

Unit 5:Influence of the environment (social, cultural, political) on the growing child

Block 5: Transitions into Adulthood

Unit 1:Psychological well-being

Unit 2:Formation of identity and self-concept

Unit 3:Emerging roles and responsibilities Unit 4:Life Skills and independent living Unit 5:Career Choices

Engagement with the field as part of course as indicated below

Hands on Experience

- Observe children in various settings and identify milestones achieved.
- Seminar on human development
- Writing Journal for reflection and case study

Suggested Readings

- Berk, L. E. (2000). *Human Development*. Tata Mc.Graw Hill Company, New York.
- Brisbane, E. H. (2004). *The developing child*. Mc.Graw Hill, USA.
- Cobb, N. J. (2001). *The child infants, children and adolescents*. Mayfield Publishing Company, California.
- Hurlocl, E. B. (2005). *Child growth and development*. Tata Mc.Graw Hill Publishing Company, New York.
- Hurlocl, E. B. (2006). *Developmental Psychology- A life span approach*. Tata Mc.Graw Hill Publishing Company, New Delhi.
- Meece, J. S., & Eccles J. L (Eds) (2010). *Handbook of Research on Schools,Schooling and Human Development.* New York: Routledge.
- Mittal. S. (2006). *Child development- Experimental Psychology*. Isha Books, Delhi.
- Nisha, M. (2006). Introduction to child development, Isha Books, Delhi.

- Papalia, D. E., & Olds, S. W. (2005). *Human development*. Tata Mc.Graw Hill Publishing Company, New York.

- Santrock. J. W. (2006). *Child Development*., Tata Mc.Graw Hill Publishing

CONTEMPORARY INDIA AND EDUCATION (SECP 02)

Course Code: A2 (SECP 02)

Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

This course will enable student-teachers to explore education from philosophical and sociological perspective and hands on experience of engaging with diverse communities, children and schools. It also traces the educational developments in the historical context leading to contemporary India. The course also includes various commissions and policies and issues and trends in the field of education, special education and inclusive education.

Objectives

After completing this course the student-teachers will be able to

- *Explain the history, nature and process and Philosophy of education*
- *Analyse the role of educational system in the context of Modern Ethos*
- *Understand the concept of diversity*
- *Develop an understanding of the trends, issues, and challenges faced by the contemporary Indian Education in global context*

Block 1: Philosophical Foundations of Education

Unit 1:Education: Concept, definition and scope

Unit 2:Agencies of Education: School, family, community and media

Unit 3:Philosophies of Education: idealism, naturalism, pragmatism, existentialism, humanism, constructivism and connectionism

Unit 4:Classical Indian Perspective (Budhism, Jainism, Vedanta Darshan, Sankya Darshan)

Unit 5:Indian Philosophers (Aurobindo, Gandhi, Tagore, Krishna Murthy)

Block 2: Understanding Diversity

Unit 1:Concept of Diversity

Unit 2:Types of Diversity: Gender, linguistic, cultural, socio-economic anddisability

Unit 3:Diversity in learning and play Unit 4:Addressing diverse learning needs

Unit 5:Diversity: Global Perspective

Block 3: Contemporary Issues and Concerns

Unit 1:Universalisation of School Education, Right to Education and Universal Access
Unit 2:Issues of a) Universal enrolment b) Universal retention c) Universal learning Unit 3:Issues of quality and equity: Physical, economic, social, cultural and linguistic, particularly w.r.t girl child, weaker sections and disabled

Unit 4:Equal Educational Opportunity: (i) Meaning of equality and constitutional provisions (ii) Prevailing nature and forms of inequality, including dominant and minority groups and related issues

Unit 5:Inequality in Schooling: Public-private schools, rural-urban schools, single teacher schools and other forms of inequalities such as regular and distance education system

Block 4: Education Commissions and Policy (School Education)

Unit 1:Constitutional provisions on education that reflect National Ideals: Equality,liberty, secularism, and social justice
Unit 2:National Commissions and Policies: Education Commission (1964), NPE andPOA (1986, 1992), National Policy for Persons with Disabilities (2006)
Unit 3:National Acts: RCI Act, 1992, PWD Act, 1995, NT Act, 1999, RTE Act (2009 &2012).
Unit 4:Programmes and Schemes: IEDC (1974, 1983), SSA (2000, 2011), RMSA, 2009, IEDSS, 2009
Unit 5:International Conventions and Policies: Salamanca Declaration and Framework,1994; UNCRPD, 2006; MDG, 2015; INCHEON strategies

Block 5: Issues and Trends in Education

Unit 1:Challenges of education from preschool to senior secondaryUnit 2:Inclusive education as a rights based model
Unit 3:Complementarity of inclusive and special schoolsUnit 4:Language issues in education
Unit 5:Community participation and community based education

Some Suggested Activities on contemporary issues

- Comparative study of different settings
- Conflicts and social movements in India: Women, Dalit, Tribal and Disabled
- Educational debates and movements
- First generation learners
- Children with disabilities
- Inclusive education
- RTE act in the context of disadvantaged
- Linguistic and religious diversity
- Human rights, minority rights
- Educational status of various groups

- Special and inclusive schools
- Analysis of contemporary debates

Essential Readings

- Guha, R. (2007). India after Gandhi: The History of the World's Largest Democracy. Macmillon: Delhi.
- National Education Commission. (1964-66). Ministry of Education, Government of India, New Delhi
- National Policy on Education. (1986 & 92). Ministry of Human Resource Development Government of India, New Delhi.
- Right to Education Act. (2009). Ministry of Human Resource Development, Government of India, New Delhi.

Suggested Readings

- Aggarwal. J. C. (1992). Development and Planning of Modern Education: New Delhi Vikas Publishing House Pvt. Ltd.
- Ain, L. C. (2010). Civil Disobedience, Book Review Literary Trust: New Delhi. Select chapters.
- Anand, S. P. (1993).The Teacher & Education in Emerging Indian Society, New Delhi: NCERT.
- Bhat. B. D. (1996). Educational Documents in India, New Delhi: Arya Book Depot.
- Bhatia, K. & Bhatia, B. (1997). The Philosophical and Sociological Foundations, New Delhi Doaba House.
- Biswas. A. (1992). Education in India, Arya Book Depot. New Delhi
- Biswas. A., & Aggarwal, J.C. (1992). Education in India, Arya Book Depot New Delhi.
- Chakravarty, S. (1987). Development Planning: The Indian Experience, Oxford University press: New Delhi.
- Chandra, B. (1997). Nationalism and Colonialism, Orient Longman: Hyderabad.
- Choudhary. K.C., & Sachdeva, L. (1995). Total literacy by 2000: New Delhi: IAE Association.
- Deaton A., & Dreze, J. (2008-2009). Poverty and Inequality in India in Raj Kapila and Uma Kapila (Ed.) in Indian Economy since Independence. Oxford University Press: New Delhi.
- Deshpande, S. (2004). Contemporary India: A Sociological View. Penguin: NewDelhi.
- Dubey, S. C (2001). Indian Society, National Book Trust: New Delhi.
- Famous Speeches of Gandhi ji: Speech on the Eve of The Last Fast, January 12, 1948.

- http://unesdoc.unesco.org/images/0023/002322/232205e.pdf
- http://www.gandhi-manibhavan.org/gandhicomesalive/speech8.htm
- http://www.mkgandhi.org/speeches/speechMain.htm
- Jain, L.C. (2010). Civil Disobedience, Book Review Literary Trust, New Delhi.
- Jagannath. M. (1993). Indian Education in the Emerging Society, New Delhi Sterling publishers Pvt. Ltd.

- Jangira, N.K. (2012). NCERT Mmother of Inclusive Eeducation Address on Golden Jubilee of NCERT at RIE, Ajmer on 01 Sept. 2012.
- Kashyap, S. C. (2009). The Constitution of India, National Book Trust: New Delhi.
- Sapra. C. L., & Aggarwal, A. (1987): Education in India some critical Issues. NewDelhi: National Book Organisation.
- Saraswathi, T. S. (1999). Culture, Socialization and Human Development, NewDelhi: Sage Publications.
- Sen, A., & Dreze, J. (1997). India: Economic Development and Social Opportunity, Oxford India: Delhi.
- Speeches of Gandhi ji: Speech on the Eve of The Last Fast, January 12, 1948. Government of India.
- Steven, B. (1998). School and Society, New Delhi: Sage Publications.
- Suresh, D. (1998). Curriculum and Child Development, Agra: Bhargava.
- Taneja. V.R. (1998). Educational Thoughts and Practice, Delhi University Publications.
- Vaidyanathan, A. (1995). The Indian Economy: Crisis, Response and Prospects.Tracts of the Times. Orient Longman Publications: New Delhi.
- Weber. O.C. (1990). Basic Philosophies of Education, New York Holt, Rinehart and Winston.

LEARNING, TEACHING AND ASSESSMENT (SECP 03)

Course Code: A 3 (SECP 03)

Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

This Course will initiate student-teachers to understand learning theories and as these translate into teaching and learning actions. Assessment of learning as a continuous process is also focused. The course also needs to focus on the PwD as Learner and their special education needs that teacher needs to address in diverse education settings.

Objectives

After completing this course the student-teachers will be able to

- *Comprehend the theories of learning and intelligence and their applications for teaching children*
- *Analyse the learning process, nature and theory of motivation*
- *Describe the stages of teaching and learning and the role of teacher*
- *Situate self in the teaching learning process*
- *Analyze the scope and role of assessment in teaching learning process in order to introduce dynamic assessment scheme for educational set up towards enhanced learning*.

Block 1: Human Learning and Intelligence

Unit 1:Human learning: Meaning, definition and concept formationUnit
2:Learning theories:
- Behaviourism: Pavlov, Thorndike, Skinner
- Cognitivism: Piaget, Bruner
- Social Constructism: Vygotsky, Bandura

Unit 3:Intelligence:
- Concept and definition
- Theories: Two-factor, Multifactor, Triarchic Theory (Robert Steinberg)

Unit 4:Creativity: Concept, Definition and Characteristics

Unit 5:Implications for Classroom Teaching and Learning

Block 2: Learning Process and Motivation

Unit 1:Sensation: Definition and Sensory Process Unit
2:Attention: Definition and Affecting FactorsUnit
3:Perception: Definition and Types

Unit 4:Memory, Thinking, and Problem Solving

Unit 5:Motivation: Nature, Definition and Maslow‘s Theory

Block 3: Teaching Learning ProcessUnit 1:Maxims of Teaching

Unit 2:Stages of Teaching: Plan, Implement, Evaluate, Reflect

Unit 3:Stages of Learning: Acquisition, Maintenance, GeneralizationUnit 4:Learning Environment: Psychological and Physical

Unit 5:Leadership Role of Teacher in Classroom, School and Community

Block 4: Overview of Assessment and School System

Unit 1: Assessment: Conventional meaning and constructivist perspective

Unit 2: ‗Assessment of Learning' and ‗Assessment for Learning': Meaning and difference

Unit 3: Comparing and contrasting assessment, evaluation, measurement, test andexamination

Unit 4: Formative and summative evaluation, Curriculum Based Measurement

Unit 5: Revisiting key concepts in school evaluation: filtering learners, marks, credit, grading, choice, alternate certifications, transparency, internal-external proportion, improvement option

Block 5: Assessment: Strategies and Practices

Unit 1: Strategies: (Oral, written, portfolio, observation, project, presentation, group discussion, open book test, surprise test, untimed test, team test, records of learning landmark, cloze set/open set and other innovative measures) Meaningand procedure

Unit 2: Typology and levels of assessment items: Multiole choice, open ended and close ended; direct, indirect, inferential level

Unit 3: Analysis, reporting, interpretation, documentation, feedback and pedagogic decisions

Unit 4: Assessment of diverse learners: Exemptions, concessions, adaptations and accommodations;

Unit 5: School examinations: Critical review of current examination practices and their assumptions about learning and development; Efforts for exam reforms: Comprehensive and Continuous Evaluation (CCE), NCF (2005) and RTE(2009)

Engagement with the field as part of course as indicated below:

I. Report submission: observation of children belonging to any three stages of development and describing applications of development in teaching-learning contexts
II. Preparation of Self study report on individual differences among learners
III. Prepare a leaflet for parents on better emotional management of children
IV. Compilation of 5 CBM tools from web search in any one school subject
V. Team presentation of case study on assessment outcome used for pedagogic decisions
VI. Report on community participation in school assessment or study recent ASAR reportto understand school independent assessment

Transaction and Evaluation

This concepts and theoretical precepts included in this course should be explained with reference to children with and without disabilities. The effort of transaction should be to enhance the understanding of how learning occurs and what are the suitable means of its assessment. Evaluation may be done by asking student-teachers to children with and without disabilities and present a report of the same.

Essential Readings

- Amin, N. (2002). Assessment of Cognitive Development of Elementary School Children. A Psychometric Approach, Jain Book Agency, New Delhi.
- Chauhan, S.S. (2013). Advanced Educational Psychology. Jain Book Agency, Delhi.
- King-Sears, E. M. (1994). Curriculum Based Assessment in Special Education. Singular Publishing Group, San Diego, CA.
- Panch, R. (2013). Educational Psychology: Teaching and Learning Perspective, McGraw Hill Education (India) Private Limited, New Delhi.
- Paul, P. (2009). Language and Deafness. Singular publication.
- Salvia, John, Ysseldyke, James, E. And Bolt, Sara. (2007). Assessment in Special and Inclusive Education. Houghton Mifflin Company, Boston.
- Whitcomb, S., & Merrell, K.W. (2012). Behavioral, Social, and EmotionalAssessment of Children and Adolescents, Routledge, New York.
- Woolfolk, A., Misra, G., & Jha, A.K.(2012). Fundamentals of EducationalPsychology, 11thedn, Pearson Publication, New Delhi.

Suggested Readings

- Geisinger, K.F. (2013). APA Handbook of Testing and Assessment in Psychology. Available at American Psychological Association, USA.
- Guskey, T. R., & Bailey. J (2000). Grading and Reporting. Thousnad Oaks, CA: Corwin King.
- Howell, K. W., & Nolet, V. (2000). Curriculum-Based Evaluation: Teaching and decision making.Scarborough, Ontario, Canada, Wadsworth.
- McMillan, J. H. (2001). Classroom Assessment: Principles and Practice for Effective Instruction. Allyn and Bacon, London.
- Nevo, D. (1995). School based Evaluation. Pergamon Publishing, Kidlington, Oxford.
- Salvia, J., & Ysseldyke. J.E.(1998). Assessment. (7th ed) Houghton Mifflin, Boston.

PEDAGOGY OF TEACHING ENGLISH (SECM 02)

Course Code: B 4 (Part V) (SECM 02)

Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

This course will enable the student-teachers to gain a strong knowledge base in nature of English language & literature, instructional planning and evaluation. It will help in applying theory to practice to design your own materials and plan lessons in preparation for teaching real classes.The course offers you the opportunity to explore in-depth aspects of english andto find out about the approaches and current practices of language teaching in relation to indian and international contexts. The course also equips you with analytical and investigative skills and povides a foundation in issues related to English language teaching, second language pedagogy and language acquisition.

Objectives

After completing the course the student-teachers will be able to

- *Explain the principles of language teaching, and evolution and trends in English literature.*
- *Prepare an instructional plan in English.*
- *Adapt various approaches and methods to teach English language.*
- *Use various techniques to evaluate the achievement of the learner in English.*

Block I: Nature of English Language & Literature

Unit 1: Principles of Language Teaching

Unit 2: Language Proficiency: Basic Interpersonal Communication Skills (BICS) andCognitive Academic Language Proficiency(CALP)

Unit 3: English Language in the school context: An Evolutionary PerspectiveUnit 4: Current Trends in Modern English Literature in Indian context

Unit 5: Teaching as second language in Indian context.

Block II: Instructional Planning

Unit 1: Aims and objectives of Teaching English at different stages of schoolingUnit 2: Instructional Planning: Need and Importance

Unit 3: Block and lesson plan: Need and Importance

Unit 4: Procedure of Block and Lesson Planning

Unit 5: Planning and adapting Blocks and lessons for children with disabilities

Block III: Approaches and Methods of Teaching English

Unit 1: Difference between an approach and a method

Unit 2: Task based approach, co-operative learning, language across curriculum, communicative language teaching, Bilingual, Eclectic and Constructive approach

Unit 3: Method Teaching of Prose, Poetry, Drama, Grammar and Vocabulary- i) Translation method. ii) Structural – Situational method. iii) Direct method

Unit 4: Development of four basic language skills: Listening, Speaking, Reading, and Writing

Unit 5: Accommodation in approaches and techniques in teaching children with disabilities

Block IV: Instructional Materials

Unit 1: Importance of instructional material and their effective use

Unit 2: The use of the instructional aids for effective teaching of English: Smart boards, Chalk Board, Flannel Board, Pictures/ Picture-cut-outs, Charts, Tape- records, Radio, Television, Films & Filmstrips, Overhead Projector, Language Laboratory, Language games, reading cards, Worksheets, Handouts, and Power Point Presentation

Unit 3: Construction of a teacher made test for English proficiencyUnit

4: Teaching portfolio

Unit 5: Adaptations of teaching material for children with disabilities

Block V: Evaluation

Unit 1: Evaluation - Concept and Need

Unit 2: Testing Language skills and Language elements (Vocabulary, Grammar and Phonology)

Unit 3: Adaptation of Evaluation Tools for Children with DisabilitiesUnit

4: Individualized assessment for Children with Disabilities

Unit 5: Error analysis, Diagnostic tests and Enrichment measures

Transaction

This course should be taught through a series of workshops, seminars and presentations. Lectures, demonstrations and discussions for theory based topics. Students should be encouraged to use instructional material in their practice of teaching lessons. Adaptations in pedagogy, material and evaluation should be taught through workshops and specific case studies

Course Work/ Practical/ Field Engagement

- Design teaching programme based on error analysis
- Develop an Action Research Plan for measuring the effectiveness of a given teachingapproach in English
- Develop work sheet (interactive including language games)
- Prepare worksheets to enrich vocabulary among secondary students with disabilities
- Develop lesson plans for the teaching of prose and poetry

- Critically analyze any one poem or essay of a well known poet or writer

Essentital Readings

- Allen, H., & Cambell, R. (1972). Teaching English as second Language, McGraw Hill, New York.
- Bharthi, T., & Hariprasad, M. (2004). Communicative English, Neelkamal Publications, Hyderabad.
- Bhatia, K.K. (2006). Teaching and Learning English as a Foreign Language. Kalyani Publishers, New Delhi.
- Grellet, F.(1980). Developing Reading Skills, Cambridge University Press, New York.
- IGNOU CTE – 02 Certificate in Teaching of English (1989). The Structure of English, IGNOU, New Delhi.
- IGNOU EEG – 02 Elective Course in English (1989). The Structure of Modern English Blocks (1 to 7), IGNOU, New Delhi.

Suggested Readings

- Agnihotri, R.K., & Khanna, A.L. (Ed.) (1996). English Grammar in context, Ratnasagar, Delhi.
- Bhatia, K.K., & Kaur, N. (2011). Teaching and Learning English as a Foreign Language. Ludhiana: Kalyani Publishers.
- Bindra, R. (2005). Teaching of English. Jammu: Radha Krishan Anand and Co.
- Brumfit, C.J., & Johnson (Ed.) (1979). The communicative Approach to Language Teaching, Oxford University Press, Oxford.
- Bryne, D. (1988). Teaching Writing Skills, Longman, England.
- Krashen, D. (1992). Principles and Practice in Second Language Acquisition, Pergamum Press Oxford.
- Krishna Swamy (2003). Teaching English: Approaches, Methods and Techniques, Macmillan Publication, New Delhi.
- Sachdeva, M. S. (2007). Teaching of English. Patiala: Twenty First Century Publications.
- Sahu, B. K. (2004). Teaching of English. Ludhiana: Kalyani Publishers.
- Shaik, M. & Gosh, R.N. (2005). Techniques of Teaching English, NeelkamalPublications, Hyderabad.
- Sharma, P. (2011). Teaching of English: Skill and Methods. Delhi: Shipra Publication.

Course Code: B 5 (Part I) (SECM 04)

Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

The course will help the student-teachers to generate their student's interest for learning science and develop a scientific attitude. It is designed to equip the student-teachers to teach science using innovative methods, techniques and teaching learning material to students with & without disabilities.

Objectives

After completing the course the student-teachers will be able to

- *Explain the role of science in day to day life and its relevance to modern society.*
- *Describe the aims and objectives of teaching science at school level.*
- *Demonstrate and apply skills to select and use different methods of teaching thecontent of sciences.*
- *Demonstrate competencies of planning for teaching sciences, organizing laboratoryfacilities and equipment designing pupil centered teaching learning experiences.*
- *Demonstrate skills to design and use various evaluation tools to measure learnerachievement in sciences.*

Block 1: Nature and Significance of Science

Unit 1: Nature, Scope, Importance and Value of ScienceUnit
2: Science As An Integrated Area of Study
Unit 3: Science and Modern Indian Society: Relationship of Science and Society Unit 4: Impact of Science with Special Reference to Issues related with Environment, Industrialization and Disarmament
Unit 5: Role of Science for Sustainable Development

Block 2: Planning for Instruction

Unit 1: Aims and Objectives of Teaching Science in Elementary and Secondary School
Unit 2: Bloom's Taxonomy of Educational Objectives and Writing Objectives in Behavioural Terms
Unit 3: Lesson Planning – Importance and Basic Steps. Planning Lesson for an Explanation, Demonstration, and Numerical Problem in Teaching of Sciences
Unit 4: Block Planning – Format of A Block Plan
Unit 5: Pedagogical Analysis: Meaning and Need. Guidelines for Conducting Pedagogical Analysis

Block 3: Approaches and Methods of Teaching Sciences

Unit 1: Process Approach, Direct Experience Approach, Inductive-Deductive Approach

Unit 2: Lecture, Demonstration, Discussion, Problem-solving, Concept-mapping,Programmed Instruction, Team Teaching, Seminar, Computer AssistedLearning (CAL)

Unit 3: Project Method and Heuristic Method

Unit 4: Creating Different Situations of Learning Engagement: Group Learning, Individual Learning, Small Group, Cooperative (Peer-Tutoring, Jigsaw, etc.), Situated/Contextual Learning with reference to Children with Disabilities

Unit 5: Constructivist Approach and its Use in Teaching Science

Block 4: Learning Resources with reference to Children with Disabilities for TeachingScience

Unit 1: Teaching Learning Aids – Need, Importance, Selection, Use and Classification of Aids Based on Type of Experience, Audio Visual Aids, Multimedia, Charts, and Models (Tactile and Visual)

Unit 2: Importance of Co-Curricular Activities-Science Club, Science Exhibition,Science Text Books-Characteristics and Significance with reference to Children with Disabilities

Unit 3: The Science Laboratory-Planning Organization of Lab, Storage, Record Keeping and Safety of Scientific Equipments with reference to Children with Disabilities

Unit 4: Aquarium, Vivarium – Role in Teaching with Setting & MaintainingUnit 5:
Museum, Botanical And Zoological Garden: Role In Teaching

Block 5: Evaluation

Unit 1: Evaluation- Concept, Nature and Need

Unit 2: Norm Referenced & Criterion Referenced Evaluation, Comprehensive and Continuous Evaluation: Concept and Significance, Scholastic and Co- Scholastic Assessment

Unit 3: Tools and Techniques for Formative and Summative AssessmentsUnit 4:
Preparation of Diagnostic Test and Achievement Test

Unit 5: Adaptations of Evaluation Procedure With Reference To Children With Disabilities

Practical/ Field Engagement/Project WorkAny one

of the following

I. Pedagogical analysis of a Block from Science content.

II. Preparation of a multimedia presentation on a topic from Science content keepingstudents with disabilities in view.

III. Devloping an Action Research Plan on a problem related to teaching and learning of Sciences to students with disabilities to students with disabilities.

IV. Construction of a diagnostic test for Block along with a remedial plan.

V. Comparative analysis of prescribed syllabus and textbooks of different Boards Curricular innovations in respective subject areas

VI. Curricular adaptations for teaching Sciences to students with disabilities.

Essential Readings

- Brown, R. (1978). Science instruction of visually Impaired Youth. New York: AFB.
- Buxton, A. C. (2010). Teaching Science in Elementary and Middle School**.** NewDelhi: Sage Publications.
- Bybee, R. (2010b). The teaching of science: 21st-century perspectives. Arlington, VA: NSTA Press,USA.
- Fensham, P.J. (1994). The content of Science: A constructive Approach to its Teaching and Learning**.**Washington, D.C: The Falmer Press.
- Gupta, V. K. (1995). Teaching and lLearning of Science and Technology. New Delhi: Vikas Publishing House Pvt. Ltd.
- Henninen, K. A. (1975). Teaching of Visually Handicapped, Ohio: Charles E. Merrill Publishing Company.
- Joshi, S. R. (2005). Teaching of Science.New Delhi: A.P.H Publishing Corporation.
- Kelley, P., & Gale, G. (1998). Towards Excellence: Effective education for students with vision impairments, Sydney: North Rocks Press.
- Lawson, E. A. (2010). Teaching Inquiry Science in Middle School, New Delhi: Sage Publications.
- Layton, D. (1989). Innovations in Science and Technology Education, New Delhi: Sterling Publishers.
- Mani, M. N. G. (1992). Techniques of teaching blind children, New Delhi: Sterling Publishers.
- Mukhopadhyay, S., Jangira, N. K., Mani, M.N. G., & Raychowdhary, N. (1987). Sourcebook for training teachers of visually impaired, New Delhi: NCERT.
- Murray, L. J. (1988). Basic Skills – Science, Boston: John Murrey.
- NCERT (1982). Teaching Science in secondary schools, New Delhi: NCERT.
- NIVH (1992). Handbook for the teachers for the visually handicapped, Dehradun
- Scholl, G.T. (1986). Foundations of education for blind and visually handicapped children and youth, New York: American Foundation for the blind.
- Sharma, R. C. (2005). Modern Science teaching, Delhi: Dhanpat Rai & Sons.
- Siddiqui, H. M. (2007). Teaching science, New Delhi: Balaji offset.
- Siddiqui, N.N., & Siddiqui, M. N. (1994). Teaching of science today & tomorrow, Delhi: Doaba House.
- Starin, A., & Sund, B. (1983). *Teaching science through discovery*. Ohio: Charles E. Merril Publishing Company.
- Tripathi, S. (2004). Teaching of Physical Science, Delhi: Dominant Publications.
- UNESCO (1966). Source Book for Science Teaching, Paris: UNESCO.Vaidya, N. (2003).

Science Teaching in Schools, New Delhi: Deep & DeepPublishers.

- Vanaja, M. (2006). Teaching of Physical Science, Hyderabad: Neelkamal Publications.

Suggested Readings

- Gupta, S. K. (1983). Technology of Science Education, Delhi: Vikas PublishingHouse Pvt. Ltd.
- Gupta, V. K. (1995). Readings in Science and Mathematics Education, Ambala: The Associated Press.
- Mangal S. K., & Shubhra (2005). Teaching of Biological Sciences, Meerut: International Publishing House.
- Rao, V.K. (2004). Science Education, APH Publishing Corpn. New Delhi.

PEDAGOGY OF TEACHING MATHEMATICS (SECM 05)

Course Code: B 5 (Part II) (SECM 05)
Contact Hours: 60 **Marks: 100 (IA 20 + TEE 80)**

Introduction

The course will help the student-teachers to generate their student's interest for learning maths and develop dispositions towards the subject. It is designed to equip the learners to teach maths using innovative methods, techniques and teaching learning material for childrenwith & withought disabilities.

Objectives

After completing the course the student-teachers will be able to

- *Explain the nature of Mathematics and its historical development with contribution ofMathematicians.*
- *Describe the aims and objectives of teaching Mathematics at school level.*
- *Demonstrate and apply skills to select and use different methods of teaching Mathematics.*
- *Demonstrate competencies of planning for teaching Mathematics, organizing laboratory facilities and equipment designing pupil centered teaching learning experiences.*
- *Demonstrate skills to design and use various evaluation tools to measure learner achievement in Mathematics.*

Block 1: Nature of Mathematics

Unit 1: Meaning, Nature, Importance and Value of Mathematics

Unit 2: Axioms, Postulates, Assumptions and Hypothesis in MathematicsUnit 3:

Historical Development of Notations and Number Systems

Unit 4: Contribution of Mathematicians (Ramanujam, Aryabhatta, Bhaskaracharya,Euclid, Pythagoras)

Unit 5: Perspectives on Psychology of Teaching and Learning of Mathematics- Constructivism, Enactivism, Vygotskyian Perspectives, and Zone of Proximal Development

Block 2: Objectives and Instructional Planning in Mathematics

Unit 1: Aims and Objectives of Teaching Mathematics in Elementary and SecondarySchools.

Unit 2: Bloom's Taxonomy of Educational Objectives and Writing Objectives inBehavioural Terms.

Unit 3: Lesson Planning– Importance and Basic Steps. Planning Lesson of Arithmetic,Algebra and Geometry.

Unit 4: Block Planning – Format of A Block Plan

Unit 5: Pedagogical Analysis: Meaning and Need and Procedure for Conducting Pedagogical Analysis. Classification of Content, Objective, Evaluation, etc

Block 3: Strategies for Learning and Teaching Mathematics

Unit 1: Concept Formation and Concept Attainment: Concept Attainment Model for Learning and Teaching of Concepts

Unit 2: Learning By Exposition: Advanced Organizer Model

Unit 3: Methods of Teaching- Lecture, Discussion, Demonstration, Inductive- Deductive, Analytic-Synthetic, Problem-Solving, And Project

Unit 4: Techniques of Teaching Mathematics: Oral Work, Written Work, Drill-Work, Brain-Storming and Computer Assisted Instruction (CAI)

Unit 5: Creating Different Situations of Learning Engagement: Group Learning, Individual Learning, Small-Group, Cooperative (Peer-Tutoring, Jigsaw, etc.), and Situational/ Contextual Learning

Block 4: Teaching-Learning Resources in Mathematics for Students with Disabilities

Unit 1: Mathematics Laboratory- Concept, Need, and Equipment for Setting Up a Mathematics Laboratory

Unit 2: Utilization of Learning Resources in Mathematics: Charts and Pictures, Weighing and Measuring Instruments, Drawing Instruments, Models, Concrete Materials, Surveying Instruments With Reference To Children With Disabilities

Unit 3: Bulletin Boards and Mathematics Club

Unit 4: Abacus, Cussionaire Rods, Fractional Discs, Napier Strips

Unit 5: Calculators, Computers, Smart Boards, Multimedia Presentations, and Special Aids and Appliances For Children With Disabilities

Block 5: Assessment and Evaluation for Mathematics Learning

Unit 1: Assessment and Evaluation- Concept, Importance and Purpose

Unit 2: Error Analysis, Diagnostic Tests, Identification of Hard Spots and Remedial Measures

Unit 3: Tools and Techniques for Formative and Summative Assessments of Learner Achievement in Mathematics, Comprehensive and Continuous Evaluation in Mathematics

Unit 4: Preparation of Diagnostic and Achievement Test

Unit 5: Adaptations in Evaluation Procedure for Students With Disabilities

Practical/ Field Engagement/ Project Work Any one of the following

I. Pedagogical analysis of a Block of content from secondary school Mathematics Syllabus

II. Preparation of a multimedia presentation on a topic with special reference to studentswith disabilities

III. Construction of a question paper based on current CBSE format/concerned StateBoard of education, preparing its Scoring key, and marking scheme

IV. Analyzing errors committed by school children in Mathematics and preparing aremedial plan

V. Developing an Action Research proposal for a problem related to teaching and learning of Mathematics with reference to students with disabilities

Transactions

Lecture cum demonstration, Workshops and Seminars

Essential Readings

- Carey, L.M. (1988). *Measuring and Evaluating School Learning*, Boston: Allyn and Bacon.
- Chambers, P. (2010).*Teaching Mathematics*, Sage Publication, New Delhi.
- Chapman, L.R. (1970). *The Process of Learning Mathematics*, New York: Pregamon Press.
- David, A.H., Maggie, M.K., & Louann, H.L. (2007). *Teaching Mathematics Meaningfully: Solutions for Reaching Struggling Learners*, Canada: Amazon Books.
- David, W. (1988). *How Children Think and Learn*, New York: Blackwell Publishers Ltd.
- Gupta, H. N., & Shankaran, V. (Ed.), (1984). Content-Cum-Methodology of Teaching Mathematics. NCERT, New Delhi.
- James, A. (2005). *Teaching of Mathematics*, New Delhi: Neelkamal Publication.
- Kumar, S. (2009). Teaching of Mathematics, New Delhi: Anmol Publications.
- Mangal, S.K. (1993). *Teaching of Mathematics*, New Delhi: Arya Book Depot.
- Mani, M. N. G. (1992). *Techniques of Teaching Blind Children*, New Delhi: Sterling Publishers.
- Mukhopadhyaya, S., Jangira, N. K., Mani, M.N. G., & Raychaudhary, N. (1987). *Sourcebook for Training Teachers of Visually Handicapped*, New Delhi: NCERT.

- Nemeth, A. (1973). *Nemeth Code for Mathematics and Scientific Notation*,Loviseville K: American Printing House.
- Siddhu, K.S. (1990). *Teaching of Mathematics*, New Delhi: Sterling Publishers.

Suggested Readings

- Keeley, P. K., & Cheryl, T. R. (2011). *Mathematics Formative Assessmen*t, Canada: Sage Publications.
- *National Curriculum Framework.* (2005). NCERT, New Delhi: NCERT.
- *National Curriculum Framework for Teacher Education*. (2009). NCTE, New Delhi.
- *Teaching of Mathematics (ES-342), Blocks 1-4.* (2000). IGNOU, New Delhi.
- *Text Books of Mathematics for Class-VI to X.* (2006). NCERT, New Delhi.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.Sc. Chemistry

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.Sc. Chemistry

Introduction :

M.Sc. Chemistry in Open and Distance Learning (ODL) is a postgraduate program that provides students with the opportunity to pursue their studies in chemistry, but with the flexibility of studying at their own pace and in their own time. ODL programs are designed for students who are unable to attend regular classroom-based programs due to various commitments.

The M.Sc. Chemistry program in ODL covers a wide range of topics such as organic chemistry, inorganic chemistry, physical chemistry, biochemistry, and analytical chemistry. The program is designed to provide students with a strong foundation in theoretical and applied chemistry, which can be applied to various fields such as pharmaceuticals, materials science, and environmental science.

The program typically lasts for two years and is delivered through online platforms, study materials, and periodic contact sessions with instructors. This provides students with the flexibility to learn at their own pace, and they can interact with instructors and fellow students through online platforms and attend periodic contact sessions for clarification of doubts and guidance.

The M.Sc. Chemistry program in ODL is ideal for working professionals, individuals residing in remote areas, or those who have other commitments that make it difficult to attend regular classroom-based programs. Graduates of this program can pursue careers as chemists, researchers, educators, and consultants in various industries.

Overall, an M.Sc. Chemistry program in ODL provides students with the opportunity to develop their chemistry skills, deepen their knowledge of chemistry concepts, and prepare for a wide range of careers in various industries while offering the flexibility to study from any location.

(i) (a) Programme's Mission: The mission of an M.Sc. Chemistry program is to provide students with a comprehensive understanding of the fundamental principles, concepts, and theories of chemistry. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research and contribute to the advancement of the field of chemistry.

The curriculum of the program is designed to cover a broad range of topics, including organic chemistry, inorganic chemistry, physical chemistry, analytical chemistry, and biochemistry. Through coursework, research projects, and practical experiences, students develop a deep understanding of the fundamental concepts of chemistry and their applications in various fields.

The M.Sc. Chemistry program also aims to develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively. Graduates of the program are prepared for careers in academic research, industry, and many other fields related to chemistry.

Ultimately, the mission of an M.Sc. Chemistry program is to foster a deeper understanding and appreciation of the natural world and the chemical processes that govern it, and to prepare students to make meaningful contributions to the scientific community and society as a whole.

(b) Objectives:

The objective of an M.Sc. Chemistry program is to provide students with a comprehensive understanding of the fundamental principles, concepts, and theories of chemistry. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research, development, and management of chemical processes and products.

The program's objectives are as follows:

1. To provide students with a strong foundation in the fundamental concepts and theories of chemistry, including organic chemistry, inorganic chemistry, physical chemistry, analytical chemistry, and biochemistry.
2. To develop students' skills in conducting research in chemistry, including designing experiments, collecting and analyzing data, and presenting research findings.
3. To provide students with practical experiences through laboratory work, research projects, and internships to develop their skills in chemical synthesis, analysis, and characterization.
4. To develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively.
5. To prepare students for careers in academia, research institutions, chemical industries, government agencies, and other industries related to chemistry.

Ultimately, the objective of an M.Sc. Chemistry program is to provide students with a strong foundation in the theoretical and practical aspects of chemistry, which will enable them to contribute to the advancement of the field of chemistry and to apply their knowledge to the development of new chemical products and processes.

(ii) Relevance of the Programme with HEI's Mission and Goals:

The M.Sc. Chemistry program in Open and Distance Learning (ODL) is highly relevant to the mission and goals of higher education institutions (HEIs) that offer distance education. Here are some ways in which the M.Sc. Chemistry program in ODL is aligned with the mission and goals of HEIs:

1. Providing access to education: The M.Sc. Chemistry program in ODL provides access to higher education for students who may not have the opportunity to attend a traditional brick-and-mortar university. This aligns with the mission of many HEIs to provide education to a diverse student body and to ensure that education is accessible to all.
2. Offering flexibility: The M.Sc. Chemistry program in ODL is designed to be flexible, allowing students to study at their own pace and in their own time. This aligns with the goal of many HEIs to provide flexible education options that accommodate the needs of non-traditional students, such as working professionals or individuals with family obligations.
3. Promoting lifelong learning: The M.Sc. Chemistry program in ODL promotes lifelong learning by providing students with opportunities to continue their education and professional development, even after they have completed their degree. This aligns with the mission of many HEIs to promote lifelong learning and to provide education that prepares students for the challenges of the future.
4. Fostering critical thinking and problem-solving skills: The M.Sc. Chemistry program in ODL is designed to develop students' critical thinking and problem-solving skills, which are essential for success in any field. These skills enable students to analyze complex problems, evaluate evidence, and develop creative solutions to real-world challenges.
5. Contributing to scientific advancement: The M.Sc. Chemistry program in ODL prepares students for careers in academia, research institutions, and other industries related to chemistry. By providing students with the necessary knowledge and skills, the program is contributing to scientific advancement and helping to solve the most pressing challenges facing our world today.

Overall, the M.Sc. Chemistry program in ODL is highly relevant to the mission and goals of HEIs. It provides access to education, offers flexibility, promotes lifelong learning, fosters critical thinking and problem-solving skills, and contributes to scientific advancement.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an M.Sc. Chemistry program can include individuals who have a strong background in chemistry or related fields and are interested in pursuing advanced studies in the field. Some of the potential target groups of learners for this program are:

- Students with a Bachelor's degree in chemistry or related fields: This group of learners may have completed their undergraduate degree in chemistry, biochemistry, or another related field and are interested in furthering their knowledge and skills in chemistry.
- Working professionals in the field of chemistry: This group of learners may already be working in the field of chemistry or related industries, such as pharmaceuticals, materials science, or environmental science, and are interested in pursuing advanced studies to enhance their knowledge and skills.
- Individuals interested in research: This group of learners may be interested in pursuing a career in research and are looking for a program that will provide them with the necessary knowledge and skills to pursue advanced research in chemistry.
- Educators: This group of learners may be educators who are interested in enhancing their knowledge in chemistry and related fields, and are looking for a program that will help them better prepare their students for careers in chemistry.

Aspiring chemists: This group of learners may be individuals who are interested in pursuing a career in chemistry and are looking for a program that will provide them with the necessary knowledge and skills to pursue their career goals.

Overall, the prospective target group of learners for an M.Sc. Chemistry program can be diverse and include individuals from various educational and professional backgrounds who are interested in pursuing advanced studies in chemistry.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The M.Sc. Chemistry program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence. Here are some reasons why:

- Flexibility: ODL mode provides learners with the flexibility to learn at their own pace, place, and time. This mode is ideal for working professionals who have other commitments and may not be able to attend traditional, on-campus programs. Learners can access course materials at their convenience and design their own study schedules, making it easier to balance their work, family, and educational commitments.
- Access to learning resources: ODL mode provides learners with access to a wide range of learning resources, including digital textbooks, video and audio lectures, interactive simulations, and virtual laboratories. This mode enables learners to access these resources from anywhere, which can help them deepen their understanding of key concepts and develop specific skills and competencies.
- Personalized learning: ODL mode provides learners with personalized learning experiences by using adaptive learning technologies, offering individual feedback, and providing personalized tutoring. This mode enables learners to focus on their specific needs and interests, and acquire the skills and competence they need to succeed in their chosen field.
- Cost-effective: ODL mode can be a cost-effective option for learners who are unable to attend traditional, on-campus programs. This mode can reduce the cost of tuition, accommodation, and transportation, making it more accessible to learners from diverse socioeconomic backgrounds.
- Practical components: Although some practical components of the M.Sc. Chemistry program may require access to laboratory equipment, there are still many theoretical components of the program that can be delivered effectively through the ODL mode. Furthermore, some universities offer online laboratories and simulations that can be used to supplement or replace the practical components of the program.

Overall, the M.Sc. Chemistry program can be appropriately conducted in the ODL mode, providing learners with the opportunity to acquire specific skills and competence in a flexible, accessible, personalized, and cost-effective manner.

(v) Instructional Design: The M.Sc. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

Year	Course	IA Continuous Evaluation	Term End Exam	Total
Previous Year	Course 1: Analytical and Spectroscopic Techniques	15	85	100
	Course 2:Inorganic Chemistry	15	85	100
	Course 3:Organic Chemistry	15	85	100
	Course 4:Physical Chemistry	15	85	100
	Applied Chemistry Practical-I	* 20	55	75
	Applied Chemistry Practical-II	* 20	55	75
	Applied Chemistry Practical-III	* 20	55	75
	Total marks	**120**	**505**	**625**
Final Year	Course 1: Advanced Inorganic Chemistry	15	85	100
	Course 2: Bio-Organic and Medicinal Chemistry	15	85	100
	Course 3: Polymer Chemistry and Technology	15	85	100
	Course 4: Selected Topics in IndustrialChemistry	15	85	100
	Applied Chemistry Practical-IV	* 20	55	75
	Applied Chemistry Practical-V	* 20	55	75
	Applied Chemistry Practical-VI	* 20	55	75
	Total marks	**120**	**505**	**625**
Total Marks Previous and Final Year		**240**	**1010**	**1250**

(a)Detailed Syllabus of the Programme: Given as Appendix-01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and

mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.Sc. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.Sc. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: B.Sc. with Chemistry

Fee Structure: M.Sc. Previous & M.Sc. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	**Letter Grade**	**Grade Points**	**Remarks**
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree if he/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulated time:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Council and approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features

hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total

M.Sc. Chemistry	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms in an M.Sc. Chemistry program in Open and Distance Learning (ODL) are necessary to ensure that the program meets the required standards and provides quality education to the learners. Some of the quality assurance mechanisms that can be used are:

1. Curriculum design and review: The curriculum of the program should be designed and periodically reviewed to ensure that it aligns with the current trends, standards, and requirements of the industry and academia.
2. Evaluation and assessment: Regular evaluation and assessment of the learners' progress should be conducted to ensure that they are meeting the program's learning objectives and outcomes.
3. Faculty and instructor training: Faculty and instructors should be adequately trained and qualified to teach the subject matter effectively and efficiently.
4. Learner support services: Learner support services such as academic counselling, technical support, and mentorship should be provided to ensure that learners receive the necessary guidance and assistance throughout the program.
5. Infrastructure and technology: The program should have adequate infrastructure and technology to support the delivery of the instructional content and assessments.
6. Accreditation: The program should be accredited by a recognized accreditation agency to ensure that it meets the required standards and quality.

The expected program outcomes of an M.Sc. Chemistry program in ODL can include:

- In-depth knowledge and understanding of advanced mathematical concepts and techniques.
- Competence in mathematical problem-solving and critical thinking.
- Ability to apply mathematical principles and methods in real-world situations.
- Effective communication and collaboration skills.
- Capacity to conduct independent research and contribute to the development of new mathematical theories and applications.
- Preparation for further studies in Chemistry or related fields.

The program should be designed to achieve these expected outcomes and should be regularly evaluated and reviewed to ensure that the outcomes are being achieved.

Appendix-01

Detailed Syllabi of M.Sc. in Chemistry Programme.

FIRST YEAR – M. SC. PREVIOUS (THEORY AND PRACTICAL)

DEC.APP.CHEM. 1.01: Analytical and Spectroscopic Techniques

Unit 1: Basic tools and operations of analytical chemistry : Data handling and interpretation of results, Statistics of small data sets, plotting of calibration curves good laboratory practice, quality assurance of analytical measurements stoichiometric calculations.

Unit 2: Spectrochemical methods: Nature and interaction of electromagnetic radiation with matter, energies corresponding to various kinds of radiations, atomic and molecular transitions, selection rules, factors influencing positions and intensity of spectral lines.

Unit 3: UV-visible spectroscopy : Beer-Lambert laws and its limitations, terminology associated with electronic spectroscopy, types of absorption bands and the oritical interpretation, effect of solvent and structure of Xmax, Woodward-Fieser rule.

Unit 4: Infra RedSpectroscopy: Theory of IR absorption Instrumentation, sample handling techniques, qualitative applications of IR, Applications to structural elucidation of simple organic molecules. Applications of IR spectroscopy to co-ordination compounds, organic transition metal complexes (N-N dimethyl acetamide, urea, thioures, DMSO, NO_3 SO_4^{2}, NO_2).

Unit 5: Flurometry: Priniciples of fluorescene, chemical structure and fluorescence, fluorescene quenching, relationship between concentration and fluorescence intensity.

Unit 6: Atomic spectrophotometric methods: Flame emission spectrometry, principle, applications and instrumentation.

Unit 7: Atomic absorption spectrophotometry: Principle, instrumentation, sample preparation, and applications.

Unit 8: Chromatography: Classification, basic principle, theory of chromatography, ion-exchange chromatography, ion-exchange process, synthesis and structure of ion-exchange resins, resolution, retention parameters, selectivity ion-exchange capacity, application in the removal of interfering ions, lanthanide separation, concentration and recovery of tracer ions.

Unit 9: Gas Chromatography: Characteristic of mobile stationary phase used in GSC and GLC,characteristics of carrier gases, detectors, TCD, FID and ECD, applications of GC and GC-

Ms.

Unit 10: Paper and Thin layer chromatography: Stationary and mobile phases, various techniques of development-visualization and evolution of chromotograms, applications, separation of inorganic and organic compounds.

Unit 11: High performance liquid chromatography: Scope of HPLC, introduction principle-instrumentation detectors and applications.

Advanced instrumental methods :

Unit 12: Nuclear Magnetic Resonance (NMR) Spectroscopy :

Types of nuclei, theory of population of nuclear energy levels and relaxation process-chemical shifts, mechanism of shielding, spin-spin coupling, rules governing the interpretation of first order spectra, low and high resolution NMR, Karplus equation line broadening chemical exchange, decoupling techniques, shift reagents, Fluxional molecules, application to structure elucidation of simple organic molecules.

Unit 13: Mass Spectroscopy: Introduction, basic theory Mass spectrometer Mclafferty rearrangement, Retro Diels Alder reaction, ortho effect application of mass spectroscopy in qualitative and quantitative analysis.

Unit 14: ESR Spectroscopy: Basis principles theory of ESR spectra, experimental techniques, 'g' factor, significance; multiplicity in ESR hyper fine spitting; rules for interpretation of spectra, Zero field splitting and Krammer's degeneracy: John Teller distortion; isotropic and Anisotropic coupling constants; Nuclear quardrople coupling interactions, applications of ESR to simple inorganic and organic compounds.

Unit 15: Thermal methods of analysis : Basic theory and working principles of thermo gravimetric analysis (TGA), differential thermal analysis (DTA) and Differential scanning calorimetry (DSC). Applications of TGA, DTA and DSC withospecial reference to characterization of inorganic and organic complexes and polymeric materials.

References:

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6. Quantitative Chemical Analysis-D.C. Harris, W.M. Freeman and Co., NY, USA, IV Ed, 1995.
7. Introduction to Instrumental Analysis-RD.Braun, McGraw Hill Book Company, 1982.
8. Fundamentals of Molecular Spectroscopy-C.N. Banwell, Tata McGraw Hill Book Company,1973.
9. Physical Methods in Inorganic Chemistry-R. Drago, Affiliated to East West Pvt. Ltd., 1968.
10. Introduction to Chromatography-Theory and Practice - V.K.Srivastava and K.K. Srivastava, S. Chand Company Ltd., IV ed., 1991.
11. Analytical Chromatography-G.R. Chatwal, Himalaya Publishing House, VII ed., 1998.

12. Basic Concepts of Analytical Chemistry-S.M. Khopkar, New Age International Publishers,lied., 1998.
13. Molecular Structure and Spectroscopy-G. A.ruldas, Prentice Hall India, New Delhi, 2001.
14. Principles of Instrumental Analysis-Skoog, Hollar and Nieman, Harcourt, Asia Pvt. Ltd.,India, New Delhi, V Ed., 1998.
15. Fundamentals of Analytical Chemistry-Skoog, West and Hollar, Harcourt, Asia Pvt. Ltd.,India, New Delhi, VII Ed., 1998.

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DEC.APP.CHEM. 1.02: INORGANIC CHEMISTRY

Unit 1: Chemical Bonding

Ionic bond-properties of ionic compounds, close-packing in ionic compounds, radius ratio rule; types and structure of simple ionic compounds (NaCl, CsCl, CaF2, Ti02, perovskites and spinals); Lattice energy, Bom - Lande equation. Bom - Haber cycle - applications. Covalent

character in ionic bonds, Fajan's rules, percent ionic character and electronegativity values. Hydration energy and solubility of ionic solids.

Covalent bond - Molecular Orbital Theory- LCAO method sigma, pi and delta M.Os.M.O.treatment of Homo and hetero diatomic molecules MOT of delocalised A-bonding systems- CO,2, NO,.

Unit 2: Shapes of Poly Atomic Molecules : Application of VSEPR theory and geometry of covalent molecules. Role of p-and d-orbitals in sigma and pi-bonding in non-metalic compounds.

Pseudo Halogens : Cyanogen, thiocyanogen and selenocyanogen - preparation and prones.
Noble Gas Compounds : Reactivity trends, compounds of

xenon (XeF_2, XeF_4, XeF_6, $XeOF_2$, XeOF4) and krypton (KrF2)- Preparation reactions and structures.

Unit 3: Solid State Chemistry: Defects in solid - types of defects, stochiometric defects - Schottky and Frenkel defects, non- stochiometric defects, colourcentres.
Band Theory of Solids: Metals, insulators and semiconductions; intrinsic & Photo excited andimpurity & defect semiconductors; Mixed oxides - spinals and perovskites, p-n junctions, high temperature super conductors.
Organic Solids: Conjugated systems - doped poly acetylenes, polyparaphenylenes and polypyrroles.

Unit 4: X-Ray Diffraction Techniques : Origin and production of X-rays, interaction of X-rays with matter, crystal structure, unit cell, lattices, planes, Miller indices, Bragg's law, X-ray diffiraction methods, polymer characterization and applications. Neutrion and electron diffraction-basic theory and applications.

Unit 5: Inorganic Rings, Cages and Polymers: Chemistry of boranes, carboranes - preparation, chemistry, structure and bonding, S-N compounds (SN)-preparation, properties, structure and bonding. P-N compounds: phosphazenes - trimmer, preparation, structure and

bonding. B.N. compounds: borazine - preparation, properties structure and bonding. Silicon polymers - preparation, properties, structures, bonding and applications.
Silicates and zeolites - types, structure and applications.

Unit 6: Transition Elements: Characteristic properties, correlation with electronic configuration, 3d, 4d, 5d, series, trends in their chemistry.

Unit 7: Lanthanides and actinides: Electronic configurations, stable oxidation states, lanthanide and actinide contraction, separation difficulties, ion-exchange separation of lanthanides, absorption spectra, magnetic properties, complexes, comparison with d-block elements.
Unit 8: Co-ordination Chemistry: Introduction, chelating and bridging type of ligands, macrocyclic ligands, nomenclature.

Preparation of Co-ordination Compounds : Direct reacitons - substitution, oxidation, reduction, photochemical, thermal decomposition and electrochemical methods.

Detection Methods :Colour change, conduction, pH, solubility, precipitate formation and magnetic methods.
Stability of Co-ordination Complexes : Thermodynamic and kinetic stability; stability constants - stepwise (Kn) and overall stability (Bn) constants, trends in Kn, relation between Kn

and Bn. Factors affecting stability, Irving - William series.
Determination of Composition : Jobs method, mole ratio method, determination of stability constants: Spectrophotometric method.

Isomerism in Metal Complexes : Structural-Isomerism- Ionisation, co-ordination, linkage, solvate (hydrate), ligand and polymerisation isomerism.

Stereoisomerism : Geometrical (cis-trans), optical isomerism: optical isomerism in co-ordinationNo. 4 and 6.

Unit 9: Theories of Acids and Bases : HSAB concept, basis of HSAB concept, acid-base strength and hardness & softness: symbiosis; applications of HSAB concept.

Unit 10: Environmental Chemistry:
Almosphere: Segments and temperature distribution.
Air Pollution : Types of pollutants - particular matter, SOx, NOx, Cox, H2S, CFCs - sources and effects on vegetation, materials and health; photochemical smog, fog, green house effect, acid rain; ozone layer and ozone layer depletion.
Water pollution - Inorganic, organic, pesticide, detergents, oil spills, and domestic sewage, Determination of BOD, COD, DO, As, Cd, Hg, Pb, residual cloride, chlorine demand.

References:

1. Advanced Inorganic Chemistry, (5th edition)- F.A. Cotton and G Wilkinson; John Wileyand Sons, 1988.
2. Inorganic Chemistry: Principles of Structure and Reactivity (3rd edition)- James E. Huheey,Ellen E. Keither and Richard L. Keither: Harper Cllins College Pub., 1993.
3. Theortical Inorganic Chemistry (2nd edition)-M.C.Day, Jr and J. Selbin; Affiliated East-West Press, New Delhi.
4. Concepts and Models in Inorganic Chemistry(2^{nd} edition)-Douglas, McDanial and

Alexander.
5. Concise Inorganic Chemistry-J.D.Lee; ELBS, 1991.
6. Modern Aspects of Inorganic Chemistry- H.J.Emeleus and A.G.Sharpe, ELBS
7. Chemistry of Elements – Greenwood and Earnshaw; Pergoman Press, Oxford, 1986.
8. Chemical Approaches to the synthesis of Inorganic Materials – C.N.R.Rao, Wiley EasternLtd.
9. Solid State Chemistry and its Applications – Antony R.West: John Wiley & Sons.
10. Modern Inorganic Chemistry – W.L.Jolly, McGraw Hill, New York, 1984.
11. Environmental Chemistry – A.K. De, Wiley Eastern
12. Environmental Pollution Analysis – S.M. Khopkar, Wiley Eastern.

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DEC.APP.CHEM.1.03: ORGANIC CHEMISTRY

UNIT 1: Organic Reactions

Terminology and classification of reagents and reactions. Formation, stability and Structure of Carbocation, Carbanion, free radicals, Carbenes, nitrenes and arynes. Nucleophilic, electrophilic, radical substitution, addition and elimination reactions given by these intermediates. Non-Classical carbocations.

UNIT 2: Stereochemistry

Concept of Chirality: Symmetry elements and chiral structures. Absolute configuration- DL and R S nomencatures.
Optical isomerism: Definition of enantiomers, diastereomers, epimers and racemic mixtures with suitable examples. Optical isomerism exhibited by lactic acid, tartaric acids, biphenys, allenes andspiranes.
Conformational analysis of simple cyclic (chair and boat forms of cyclohexane) and acyclic systems(butane and 1,2-dichloroethane.
Cis-trans, syn-anti and EZ notations for geometrical isomers. Determination of configuration of geometrical isomers (Physical and Chemical methods).

UNIT 3: Nucleophilic Substitution at Saturated Carbon

Mechanism and stereochemistry of nucleophilic substitution reactions (S_N1, S_N2 and S_Ni reactions). Effect of solvent and nature of substrate on these reactions. Neighboring group participation and substitution at allylic carbon atom.

UNIT 4: Aromaticity

Huckle's rule and concept of aromaticity of cyclopropylcation, cyclopentadienyl anion, tropylium cation, annulenes, heteroannulenes and fullerenes[C 60].

UNIT 5: Aromatic Electrophilic Substitution Reactions

Mechanism of aromatic nitration, halogenation, sulphoantion, alkylation and acylation reactions. Orientation and reactivity (directive effect of substituents).

UNIT 6: Addition and Elimination Reactions

Addition to Carbon-Carbon multiple bonds: Addition reactions involving electrophiles,

nucleophiles and free radicals. Cyclic mechanism, orientation and stereochemistry of addition of halogen, hydrogen halide. Addition to carbon- hetero atom multiple bonds. Electrophilic, nucleophilic and free radical addition to C=O and C=N systems.

Discussion of E_1,E_2 and E_1CB mechanisms, Orinetation during elimination reactions, Saytzeff and Hoffmann rules. Chugave reaction. Hofmann degradation.

UNIT 7: Heterocyclic Compounds:

Synthesis and reactivity of: furan, thiophene, pyrrole, indole, imidazole, pyrazoles, isoxazoles, oxazoles, thiazoles, pyridine, quinoline, isoquinline and pyrimidine.

UNIT 8: Organic Acids and Bases

Bronsted and Lewis concepts. Effect of substituents on strengths of acids and bases (appropriate examples to be given).

UNIT 9: Natural Products I Carbohydrates

Monosacchrides; Configuration and conformation of monosaccharides- glucose fructose and mannose. Anomeric effect, Hudson's rule.**Oligosaccharides;** Elucidation of structures of maltose and sucrose. **Polysaccharides -** Structure of Starch, Cellulose, Polysaccharides as source of energy and structural materials. Industrial application of polysaccharides.

UNIT 10: Natural Products II

Proteins and Nucleic Acids: Amino acids- Classification, structure, methods of synthesis and properties. Synthesis of polypeptides – uses of blocking agents. Bruce-Meerifield synthesis of

polypeptides. Structure of proteins- End group analysis Primary, secondary, tertiary an

dquaternary. Biological importance of proteins.

References:

01. Advanced Organic Chemistry-Reactions, Mechanisms and Structure. By Jerry March, JohnWiely.
02. Advanced Organic Chemistry-By F.A. Carey and R.J. Sundberg, Plenum.
03. A Guide to Mechanism in Organic Chemistry- By Peter Sykes,Longmann.
04. Structure and Mechanism in Organic Chemistry – By C.K.Ingold, Carnel University Press.
05. Organic Chemistry by R.T.Robinson and R.N. Boyed, Prentice-Hall.
06. Modem Organic Reactions, by H.O. House, Benjamin.
07. Principles of Organic Syntheesis. By RO.C. Norman and J.M. Coxon. Blackie Academic &Professional.
08. Reaction Mechanism in Organic Chemistry by S.M. Mukherji and S.P. Singh, MacMillan (India).
09. Stereochemistry of Organic Compounds. By D. Nasipuri, New Age International.
10. Rodd's Chemistry of Carbon Compounds Ed. S. Coffey, Elsevier.
11. Natural Products : Chemistry and Biological Significance by J. Mann, R.S. Davidson, J.B.Hobbs, D.V. Banithrop and J.B. Horbone, Longmann, Essex.
12. Organic Chemistry of Natural Products. By Gurdeep R. Chatwal, Himalya Publishing House.
13. Organic Chemistry Vol. I & II by 1. L. Finar, ELBS.
14. Stereochemistry of Organic Compounds, By PS. Kalsi, New Age International.
15. Organic Chemistry of Natural Products. By Gurdeep R. Chatwal, Himalaya

PublishingHouse.
16. Organic Chemistry Vol. I & II by I.L. Finar, ELBS.
17. Stereochemistry of Organic Compounds, By PS. Kalsi, New Age International.
18. Heterocyclic Chemistry by J.A. Joule K. Mills and GF. Smith Chapman and Hall.
19. Heterocyclic Chemistry; By T. L. Gilkrist, Longman Scientific Technical.

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DEC.APP.CHEM. 1.04: PHYSICAL CHEMISTRY

Unit 1: Chemical Dynamics and Surface Chemistry:

Methods of determining rate laws, collision theory of reactions rates, steric factor, activated complex theory, Arrhenius equation and the activated complex theory, ionic reactions, kinetic salt effects and steady state kinetics. Kinetic and thermodynamic control of reactions, treatment of unimoiecular reactions.Adsorption-Gibbs adsorption isotherm, estimation of surface area (BET equations) surface films on liquids (Electro-kinetic phenomena), Catalytic activity at surfaces.Surface active agents, classification of surface active agents, micellization, hydrophobic interactions, critical micellar concentration (CMC), factors affecting the CMC of surfactants, counterion binding to micelles, thermodynamics of micellization.

Unit 2: Nuclear and Radio Chemistry: Radioactive series - nuclear models, Radioactive decay - artificial radioactivity - Nuclear reactions. - Application of radioactivity, Mossbauer spectroscopy - positron annihilation. Nuclear fission and fusion.Power and breeder reactors.Methods of accelerating nuclear particles for bombardment.Detection and measurement of activity Production and uses of radioactive isotopes and labeled compounds.Tracer chemistry, experimental techniques in the assay of isotopes.Electroscope, counters, chamber and semiconductor radiation detectors, statistics of counting.

Unit 3: Electrochemistry-1: Electrolytic solutions, strong electrolytes, ionic atmosphere,relaxation and electrophoretic effects, quantitative treatment of Debye-Huckel theory and its extension by Onsagar. Activity and activity coefficients, mean ionic activity co-efficient, dependence of activity co-efficient on ionic strength (Debye-Huckel limiting law), DH equation for appreciable concentration. Debye-Huckel-Bronsted equations, Electrochemical sensors-Ion selective electrodes, electrochemical biosensors.

Unit 4: Electrochemistry-II: Thermodynamics of electrolytic cells, Polarization and over voltage. Decomposition voltage. Electrochemical energy system - Introduction, fundamentals of batteries, classification of batteries, sizes of batteries, battery characteristics, primary batteries, dry cell, alkaline $Mn0_2$ batteries and other batteries. Secondary batteries - lead-acid, alkaline storage batteries-battery charging theory and practice.Energy economics. Fuel cells - type - electrochemistry of fuel cells.

Unit 5: Chemical Thermodynamics: Review of basic principle of thermodynamics. [Brief resume of laws of thermodynamics, concepts of free energy and entropy, combined form of first and second laws. Thermodynamic criteria for equalibrium and spontaneity. Variation of free energy and free energy with temperature and pressure]. Maxwell's relations, thermodynamic equations of 'state. Principle of equipartition energy, heat capacities of solids (Einstein and Debye theories).Physical equilibrium involving phase transitions, Clausius-Clapeyron and its application. Entropy of vaporization and Trouton's rule. Limitations of Van't Hoff's equation. Nemst's heat theorem, determination of free energy change. Third law of thermodynamics,

determination of third law entropies, concept of residual entropy.

Thermodynamics of systems of variable compositions, partial molar properties, partial molar volume and its determination, partial molar free energy-chemical potential and its significance, Gibbs-Duhem equation, themodynamics of ideal and real gases and gas mixtures. Fugacity-its variation and determination, activity, activity co-efficient-different scales of activity co-efficient for solute and solvent, determination of activity co-efficients.Duhem-Margules equation and its application. Thermodynamics of ideal and non-ideal dilute solutions.

References:

1. Fundamental of Physical Chemistry - Maron and Lando, Collier Mac Millian, 1974.
2. Physical Chemistry - Atkins, ELBS, 1982.
3. Physical Chemistry - Barrow, McGraw Hill, Int. St.Ed., 1979.
4. Physical Chemistry - Moore, Orient Longman, 1972.
5. Physical Chemistry - Castellen, Narosa, New Delhi, III Ed.
6. Physical Chemistry - Arthur W. Adamson, Academic Press.
7. Physical Chemistry - Daniels and R.A. Alberty
8. Thermodynamics for Chemists - Glasstone, East We^t, New Delhi.
9. An Introduction to Chemical Thermodynamics - R.P. Rastogin and S.S. Misra, Vikash, Delhi,1978
10. Thermodynamics - Rajaram and Kuriakose, East West, Nagin CX, Delhi, 1986
11. Physical Chemistry - Vol. I and II, Gerasimov, MIR, Moscow
12. Chemical Thermodynamics - Klotz and Rosenberg, Benjamin Inc, 1972
13. Theoretical Chemistry - Glasstone, East West, 1973
14. Introduction to Chemical Thermodynamics - R.P. Rastogi and S.S. Misra, Vikash, Delhi,1978.
15. Thermodynamics - Rajaram and Kuriakose, East West, Nagin CX, Delhi, 1986
16. Chemical Kinetics - Laidler, Harper and Row, DeUii, 1987
17. Kinetics of Chemical Reactions-S.K. Jain, Vishal Publications, 1982
18. Theoretucak Chemistry - Glasstone, East West, 1973.
19. Kinetics and Mechanism - Moore and Pearson, Wiley, New York, 1980
20. The Foundation of Chemical Kinetics - Benson, McGraw.
21. Kinetics and Mechanism - Moore and Pearson, Wiley, New York, 1981
22. Techniques in Organic Reaction Kinetics - P.Zumen and R.C. Patel, Wiley, New York, 1984
23. Kinetics of Chemical Reactions - Jain, Vishal, New Delhi
24. Physical Chemistry of Surfaces - Adamson, John Wiley
25. Modem Electrochemistry, Vol. I and II-Bokris and Reddy, Plenum Press, New York, 1970
26. An Introduction to Electrochemistiy - Glasstone, East West Ltd.
27. Corrosion Engineering - Fountain and Green McGraw Hill, 1969.
28. Nuclear Chemistry - Friedlander, Kennedy and Miller, Wiely.
29. Essentials of Nuclear Chemistry - Amilkar, Wiely - Easten.
30. Adsorption and Catalysis - Chakraborthy.
31. Electrochemistiy - Principles and Applications-Potter.
32. Source Book of Atomic Energy - Glasstone, East West. New Delhi, 1967, ill Ed.
33. Chemical and Electrochemical Energy Systems - R.Narayan and B.Viswanathan, UniversityPress, 1998.

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DEC.APP.CHEM. 1.05: APPLIED CHEMISTRY PRACTICALS -I

1. **ComplexometricTitrations** :

Use of EDTA in the determination of Ca, Mg, Ni, Cu, Zn and Pb.

Determination of hardness of water

Determination of Sulphate (by EDTA back titration after precipitation as BaS04/PbS04

2. **Redox Titrations:** Determination of Fe by titration using K2Cr207 and Ce(S04)2.
3. **Gravimetric Determinations** : **[1]** Cu as CuSCN [2] Nias Ni(dmg)2 [3] AI as Oxinate
4. **Colorimetric determinations** : **[1]** Ti using H202 [2] Fe using SCN and Phen
5. **Analysis of Ores** : Lime stone, Haematite, Pyrolusite, copper pyrites.
6. Analysis of stainless steel for Cr, Ni and Mn.
7. **Flame Photometry** : Determination of Na and K
8. **Ion-exchange** : Separation and determination of Zn and Mg as chlorocomplex anions.

References:

1. Quantitative Chemical Anaysis -1. M. Kolthoff, E.B. Sandell E.J. Meehan and S. Bruckenstein, McMillan Company 1968.
2. Vogel's Text Book of Quantitative Chemical Analysis GH. Jeffery, J. Bassett, J. Mendhan and R.C. Denny, ELBS, Longman 5th edition 1989.
3. Advanced Practical Inorganic Chemistry Gurdeep Raj, Goel Publishing House, 10th edition1994.
4. A Text BOok of Quantitative Chemical Analysis A.I. Vogel, ELBS Longman 3rd edition,1961.
5. Quantitative Anaysisi, R.A. Day and A.L. Underwood, Prentice Hall of India, 1993. Commercial method of analysis Snell and Biffen.

DEC.APP.CHEM. 1.06: APPLIED CHEMISTRY PRACTICALS –II

Qualitative Analysis :

Separation, purification and identification of compounds of binary mixture (two solids or two liquids or one solid and one liquid) using Thin Layer Chromatography, Column Chromatography, Chemical tests, Preparation of solid derivative for the components.

Organic Synthesis :

Organic synthesis involving the following reactions.

Acetylation: Aromatic substitution reaction : Oxidation, bromination, nitration etc.

Aldol condensation. Sandmeyer reaction, Cannizaro reaction, Friedel Crafts reaction, characterization of the products by M.P. TLC etc.

References :

1. Vogel's Text Book of Practical Organic Chemistry, by fumiss, Hannaford, Smith and Tatchell, ELBS, Longman.
2. Advanced Practical Organic Chemistry by N.K. Vishnoi, Vikas Publishing House.
3. Handbook of Practical Organic Chemistry by Clark.
4. Practical Organic Chemistry by O.P. Agarwal.
5. Cmprehensive Practical Organic Chemistry by V. K. Ahluwalia, Renu AggarwalUniversities Press Pvt. Ltd. (2000).

DEC.APP.CHEM. 1.07: APPLIED CHEMISTRY PRACTICALS –III

Acid catalyzed hydrolysis of methyl acetate: Determination of reaction order, activation parameter, temperature effect, catalytic effect.

Conductometric titrations:

1. Determination of the strength of strong and weak acids in a given mixture using NaOH.
2. Determination of the activity co-efficient of Zn ions in the solution using Debye-Huckel'slimiting law.
   Potentiometric titration of silver nitrate V/s potassium chloride
   Equilibrium constant determination by potentiometric method.

pH titration : HCI V/S NaOh, $CuS0_4$, V/s NaOh, AcOh V/s NaOH
Partial molar volume : Methanol-water system, Ethanol-water system.
Determination of pH and pK at various dilutions conductometrically

Study the effect of solvent on the conductance of silver nitrate/ Has and to determine the degree of dissociation and equilibrium constant in different solvents. Determination of thermodynamic quantity of the reaction taking place in chemical cell.

References:

1. Vogel's Text Book of Quantitative Chemical Analysis GH.Jeffery, J. Bassett, J.Mendhan and R.C. Denny, ELBS, Longman 5th edition, 1989.
2. Practical Physical Chemistry. A.M. James and F.E. Prichard, Longman.
3. Findley's Physical Chemistry. B.P. Levitt, Longman.
4. Experimental Physical Chemistry. R.C. Das and Behera, Tata McGraw Hill.
5. Practical Physical Chemistry, J.B. Yadav.

   Experiments in Physics Chemistry J.C. Ghosh, Bharathi Bhavan Publishers.

7. Experimental Physical Chemistry. J.W. Williams and Farrinton Daniels.

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FINAL YEAR – M. SC. PREVIOUS (THEORY AND PRACTICAL)

DEC.APP.CHEM. 2.01: ADVANCED INORGANIC CHEMISTRY

Unit 1: Bonding in Metal Complexes:

Valence Bond and Crystal Field Theory: Salient features; Crystal field splitting of d-orbital in octahedral, tetrahedral, tetragonal, and square planar field. Magniturde of A, factors affecting A, CFSE evidences for crystal field stabilization: short comings of CF.T evidences for covalency.
M.O. treatment of bonding in octahedral complexes involving sigma-bondings; absorption spectraof d1 and d2 systems.
Magnetic Properties: high-spin, low-spin complexes, explanation of magnetic properties of complexes based on VBT and CFT

Unit 2: Electronic Spectra of Complexes:
Spectra of transition mental ions-term symbol of dn ions, ground state terms, term splitting in crystal field, inter-electronic repulsion parameters, Orgel diagrams, Tanabe-Sugano diagrams.
Selection rules and band intensities, symmetry, spin-orbit coupling and vibronic coupling effects, charge transfer spectra- LMCT and MLCT.

Interpretation of electronic spectra, calculation of A, B and P, Spectrochemical series and nephelausetic series.Spectral properties of divalent 3d metal ion complexes.

Unit 3: Magnetic Properties:

Magnetic susceptibility : Types of magnetic behaviours-dia, para, ferro and antiferro magnetism, crystal field and **M.O.** Interpretation, quenching of orbital moment, spin Orbit coupling, spin- cross over, antiferromagnetic coupling.

Experimental aspects-Gouy and Faraday methods, effects of temperature of magnetic behaviour, magnetic properties and structure. Magnetic behaviour of Co (II) and Cu (II) complexes.

Unit 4: Kinetics and Mechanism of Reactions

Inert and labile complexes; ligand displacement (substitution) reactions in octahedral Co(II) complexes. Base hydrolysis of Cr(HI) Complexes, ligand displacement in square-planar Pt (II) complexes, Trans effect. Electron transfer reaction- inner and outer sphere mechanisms; reactions of co-ordinated ligands- substitution, addition and condensation reactions.

Unit 5: M-M Bonding:

Factors affecting metal-metal bonding, metal clusters-binuclear compounts, three atom cluster, four atom tetrahedral clusters, five and six atom clusters.

Unit 6: Organometallic Chemistry:

Introduction Nomenclature, 16 and 18 electron rule, stability, classification of ligands, complexes of π-ligands; Metal carbonyls, metal nitrosyls, synthesis, reactions, Structure and bonding; metal olefin, π-Cyclopentadienyl, and arene complexes.

Basic reactions involving in Organo metallic compounds; addition, elimination, substitution and rearrangement.

Unit 7: Industrial Application of Organo-metalticCompounds :

Homogeneous catalysis; hydrogenation of olefins, Oxo-process, Waker process, water gas shift reactions, arbonization. Heterogenous Catalysis; Fischer-Tropsch reaction, Ziegler-Natta polymerisation.

Unit 8: Bioinorganic Chemistry :

Role of alkali, alkaline earth, Fe, Co, Zn, Mo and Cu metal ions in biological systems;

Transport across the Membrane :

The transport mechanism, active transport across biological membrance, -NaVK+-transporting ATPase and Ca7Mg+- transporting ATPase, macrocyclic crown ether compounds, cryptands, spherands and ionophores.

Metabolism of Inorganic Nitrogen :

Nitrogen assimilation in animals, nitrate reduction in protista, nitrite reduction in plants, in *vitro* and in *vivo* methods of nitrogen fixation. Nitrogenous, photosynthesis - chlorophyll- PS-I and PS-II

Oxygen Carriers:

Introduction to porphyrin system, substituents effects on porphyrin rings, Haemoglobin (Hb) and myoglobin (Mb)- structure, stereochemistry and oxygenation of Hb and Mb; Non-heme oxygen carriers-hemerythrin and hemocyanin. Synthetic oxygen carriers.

Electron Carriers :

Iron-sulphur proteins (ferridoxins and ruberdoxins). Cytochromes: coossification - cytochrome C,cytrochrome P-450.

Metalloenzymes :

Mechanism of enzyme action; Catalase and peroxidase, Superoxide dismutase and ascorbic acid oxidase, Alcohol- dihydrogenase, carboxy peptidase-A, xanthin oxidase, aldehyde oxidase, sulfiteoxidase and xanthine dedydrogenase. Vit B,,- coenzyme.

Metal ion deficiency effects, toxicity of metal ions, and treatment of toxicity, chelating agents in medicine, metal complexes as therapeutic agents and anticancer agents.

References:

1. Advanced Inorganic Chemistry, (5th edition)-R.A. Cotton and G Wilkinson; John Wiley andSons, 1988.
2. Inorganic Chemistry: Principles of Structure and Reactivity (3rd edition)- James E.Huheey,Ellen E. Keither and Richard L.Keither; Harper Collins College Pub., 1993.
3. Inorganic Chemistry(3rd Edition)-Shriver and Atkins; Oxford University Press,1999.
4. An Introduction to Inorganic Chemistry – Purcel and Kotz; Holt-Saunders, 1985.
5. Coordination Chemistry – F.Basalo and R.C.Johnson; W.A. Benjamin Inc., 1979.6.Coordination Chemistry – S.F.A.Kettle.
7. The Inorganic Chemistry of Biological Processes(2nd Edition) – M.N.Hughes.
8. Physical Inorganic Chemistry: A Co-ordination Chemistry Approach – S.F.A. Kettle, Spectrum Pub., 1996.
9. Bioinorganic Chemistry(Reprint 1987)- R.W.Hay; Ellis Horwood/John Wiley & Sons.
10. Bioinorganic Chemistry(1st SAE) – Bertin, Gray, Lippard and Valentine; Viva Books, Pvt.Ltd., New Delhi, 1998.
11. Principles of Bioinorganic Chemistry-S.J.Lippard and J.M.Berg, University Sci. Books.

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DEC.APP.CHEM. 2.02: ADVANCED ORGANIC & PHARMACEUTICAL CHEMISTRY

Unit 1: Selected Organic Named Reactions: Aldol, Perkin, Stobbe, RiemerTiemann and Reformatsky reactions, Diels-alder reaction. Friedal Craft's reaction.Witting reaction, Michael addition, Robinson annulation, Oppenaur Oxidation.Clemensonsen, Wolf-Kishner, Birch reduction, Stork enamine reaction, Mannich reaction..Barton, reaction, Shapiro reaction, and Chichibabin reaction.

Unit 2: Molecular Rearrangements : Classification and general mechanistic treatment of nucleophilic, electrophilic and free radical rearrangements, Mechanisms of Wagner-Meerwein, Pinaco-pinacolone, benzil-benzilic acid, Fries, Claisen, Beckmann, Hofmann, Curtius, Schmidt rearrangements.

Unit 3: Use of the following Reagents in Organic Synthesis:

Gilman reagent, lithium diispropyl amide (LDA), dicyclohexylcarbodiimide, 1,3-dithiane, trimethylsily iodide, tri- n-butyltin hydride, Woodward and Prevost hydroxylation, Osmium tetroxide, DDO, selenium dioxide, phase transfer catalysts - Peterson synthesis, Wilkson's catalyst and Baker's yeast.

Unit 4: PericyclicReactions : Classification of pericyclic reactions, Electrocyclic reaction: Controtatoiy and disrotatory of 4n, 4n+2 any allylic systems. Cycloaddition reactions: Antrafacial and suprafacical addition. Sigmatropic rearrangements.

Medicinal and Pharmaceutical Chemistry Part I

Unit 5: General aspects of Drug action:

Introduction, classification nomenclature, theory of drug action and factor affecting drug action. Metabolism of drugs structural features and pharmacological activity.

Chemistry and phamacological activity,

Uses and adverses effects of the following classes of drugs,
(a) Adrenergic drugs, i. Adrenaline ii. Salbutamol
(b) Cardiovascular drugs i. Antihypertensive
i. Clonidine 2. Reserpine

(c) Analgesic antipyretics (non-norcotic (NSAIDs)
i. Aspirin ii. Ibuprofen iii. Indomethacin iv. Dielofenac Opioid analgesics (narcotic analgesics) i. Morphine ii.Pethidine iii. Methadone

(d) Sedatives and hypnotics i. Barbiturates (Phenolbarbitone)
ii. Benzodiazepines (diazepam)

(e) Psychopharmacological drugs
i. Antidepressants (Imipramine, amitriptyline)
ii. Antipsychotics (Chlorpromazine)

f) Anticoagulants i. Oral anticoagulants
1. Warfarin 2. Dicumaro!
(g) Antihistamines Physiological and pathophysiological role of histamine i. Diphendramine ii. Promethazine iii. Cetrizine (non sedative)

(h) Chemotherapetic agents:
a. Antibacterials b. Antifungal c. Antiviral d. Anticancer

Unit 6: Importance of Quality Control: Drug and pharmaceuticals sources of impurities in pharmaceutical chemicals, analytical quality control in finished / final products. Common methods of assay, analysis of a few common drugs analgesics, (anthelmintics), vitamin A, Vitamin C, Aspirin, Paracetamol, (Ephedrine), (Atropine) and glucose.
Unit 7: Synthesis of Typical Drugs: Sulpha drugs, (Sulphanilamide, sulphapridine, sulphathiazoleantimalarials (Chloroquine, primaquine), Analgesics (pethidine), Paracetamol Indomethacin, Sedative and hypnotics (Quinobarbitone, Diazepam), Antihistamine (Diphenhydramine) Antibiotics: Penicillium G

References:

1. Advanced Organic Chemistry by Jerry March John Wiley & Sons.
2. Organic Chemistry by SeyhanEge, D.C. Heath & Company.
3. Organic Chemistry by I.L Finar Vol. I & 11 ELBS & Longmans.
4. A Guide Book to Mechanism in Organic Chemistry by Peter Sykes Orient Longman.
5. Organic Chemistry By P.Y. Bruice, Prentice Hall International.
6. Heterocyclic Chemistry R.K.Bansal, New Age International (P) Ltd
7. Organic Chemistry By Morrison and Boyed, Prentice Hall International.
8. Advance Organic Chemistry Part A & B By F.A. Carey and Sundberg Plenum Press.
9. A Textbook of Medicinal Chemistry, Vol.I and Vol II, S.N.Pandeya, S.A.Publishers, Varanasi.
10. Pharmaceutical Chemistry by G.R.Chatwal et al, Himalaya Publishing House, New Delhi,1991.
11. Pharmaceutical analysis – edited by T.Higuchi and E>B. Hanssen, John Wiley and Sons, INC,New York

12. The Quantitative analysis of drugs – DC.Garratt Chappman and Hall, ltd, II New Fetter lane,London.
13. Drugs and Pharmaceutical Sciences series, Macrel Dekker Vol.II, INC, New York.
14. Quantitative Analysis of Drugs – P.D. Sethi
15. Pharmaceutical Chemistry – Leslic G Chattan.
16. A Textbook of Medicinal Chemistry, P.Parimoo. CBS Publications and Distributors, 1995.
17. Medicinal Chemistry, Ashutosh Kar (New Age International Publishers).
18. Organic Drugs Synthesis, Ledniser Mitzshen Vol.I and Vol II.
19. Synthesis of Drugs, Rothe and Knellmann.

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DEC.APP.CHEM. 2.03: Polymer Chemistry and Technology

Unit 1: Importance of Polymers, Basic Concepts :

Monomers, repeat units, degree of polymerization, Linear, branched and network polymers. Classification of polymers. Polymerization: Condensation, addition, radical chain-ionic and co-ordination and co-polymerization. Polymerization conditions and polymer reactions.Polymerization in homogeneous and heterogeneous systems, Polymerization Techniques.

Unit 2: Polydispersion-Average Molecular Weight Concept.

Number, weight and viscosity average molecular weights. Polydispersity and molecular weight distribution.The practical significance molecular weight.Measurement of molecular weights.End-group, viscosity, light scattering, osmotic and ultracentrifugation methods.Analysis and testing of polymers- chemical analysis of polymers, spectroscopic methods, X-ray diffractonstydy.Microscopy.Thermal analysis and physical testing-tensile strength.Fatigue, impact. Tear resistance. Hardness and abrasion resistance.

Unit 3: Morphology and order in crystalline polymers-

configuradons of polymer chains. Crystal structures of polymers. Morphology of crystalline polymers, strain-induced morphology, crystallization and melting. Polymer structure and physical properties-crystalline melting point Tm-melting points of homogeneous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature, Tg-Relationship between Tm and Tg, effects of molecular weight, diluents, chemical structure, chain topology, branching and cross linking. Property requirements and polymer utilization.

Unit 4: Testing of Polymers :

Need for testing-specifications and standards, mechanical-short term (tensile, fluxural, impact, tear resistance, abrasion resistance etc.) long term (creep and fatigue). Electrical-conductivity, volume resistivity, surface, breakdown voltage, dielectric constant, loss factor, thermal co-efficient of thermal expansion, heat distortion temperature, vicat softening point, low temperature, properties, thermal conductivity.

Unit 5: Solution Properties of Polymers :

Polymer dissolution, criteria, thermodynamics, Flory-Huggins Theory, nature of polymer molecules in solution, their size and shape, theta solvent, theta temperature, thermodynamics of mixing, solution viscosities.

Unit 6: Polymer Processing:

Plastics, Elastomers and fibres, compounding. Processing techniques; calendering, die casting, rotational casting, film casting, injection moulding, blow moulding, extrusion moulding

thermoforming, foaming reinforcing and fibre spinning.

Unit 7: Properties of commercial polymers :

Polyethylene, polyvinyl chloride, polyamides, polyester, phenolic resins, epoxy resins and silicon polymers. Functional polymersfire retarding polymers and electrically conduction polymers, Biomedical polymers; contact lens, dental polymers, artificial heart, kidney skin and blood cells.

References:

1. Text book of Polymer Science (3rd edition) F. W.Billmayer, A Wiley-lnterscience, 1984.
2. Contemporary Polymer Chemistry (2nd edition), H. R.Allock and F.W.Lampe, Prentice Hall, Englewood Cliff's, NewJersy, 1981.
3. Polymer Science, V.R. Gowarikar, N.V. Viswanathan and JayadevSreedhar, New Age International (P) Limited, August 1996.
4. Introductory Polymer Chemistry, GS.Misra, Wiley Eastern Limited, 1993.
5. Polymer Science and Technology of Plastics and Rubbers, PremamoyGhosh, Tata McGrawHill, 1990.
6. Polymer Characterisation, Physical Techniques, D.Campbell and J.R. White, Chaopman andHall, 1989.
7. Principles of Polymer Science Systems, F.Rodriguez, McGraw Hill Book Co., 1970.

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DEC.APP.CHEM. 2.04: SELECTED TOPICS IN INDUSTRIAL CHEMISTRY

Unit 1: Unit Operations:

Introduction to the principles of unit operation. Units and dimensions, Conversion to SI units, Dimensional analysis for unit constants, Stochiometric and composition relationships, chemical equations, Material Balance (without and with Chemical reactions) and energy balance. Steam properties, steam table, calculations involving the utilization of steam, boilers-classification and efficiency.

Principles of heat transfer, Mechanisms of heat transfer- steady state and unsteady state heat conduction, heat flow by convention and radiation, heat exchangers and evaporators. Boiling heattransfer. Principles of mass transfer, mass transfer co-efficient in laminar and turbulent flow, interphase mass transfer, molecular diffusion in gases, liquids and solids. Principles and industrial equipment involved in the following unit operators-crystallization, evaporation, filtration, distrillation, extraction and drying.

An introduction to quality control and quality assurance-Basic concepts, quality assurance, aspects of specification and tolerance, quality acceptance, sampling, reliability, cost aspects of quality decisions. Quality control in raw materials, production (in process), finished products.

Current trends in quality control, ISO 9000 and ISO 14000 series. Laws related to quality control. Case studies of quality control in various industries such as plastics and polymers, fertilizers, agrochemicals, petrochemicals. Dyes and pharmaceuticals.

Unit 2: Case Studies of the Following Organic Process : Nitration, Halogenation, Oxidation, Reduction, Sulphonation, Alkylation, Amination (Reduction and Aminolysis), Esterification, Hydrogenation, Hydrolysis.

Outline of Chemical Technology:

Unit 3: Inorganic Chemical Industries :Sulphur, nitrogen. Phosphorous, Electrochemical, Chloro-Alkali Industries, Cement-Line, Air-Water.

Unit 4: Natural Product Industries : Oil, Soaps-Detergents, Paints Varnishes, Fermentation, Food, Pulp and Paper, Coal, petroleum.

Unit 5: Synthetic Organics: Aromatics, Pesticides, Pharmaceutical

Unit 6: Metallurgical Industries : Iron-Steel, Aluminium, Copper, Zinc, Lead.

References:

1. Transport processes and Separation process principles. C.J. Geankoplis, IV edition, PrenticeHall of India, 2005.
2. Stiochiometry for Chemical Engineering. William and Johnson.
3. Stiochipmetry 2nd edition. Bhatta and Vora, Tata McGraw Hill, 1970.
4. Chemical Engineering, 2nd edition. ELBS, Coulsion and Richardson.
5. Uni Operation in Chemicl Engineering, 2 nd edition, McCabe and Smith, McGraw Hill, 1967.
6. Unit Operation II (Heat and Mass Transfer), 9th edition, Gavhane, Nirali Prakashan, 1999.
7. Unit Operations of Chemicl Engineering Vol.I &II, Chattopadhaya, Khann, Delhi, 1998.
8. Statistical Quality Control, 2 nd edition, Manohar Maharajan, Dampat Rai and Sons, 1995.
9. Unit Processes on Organic Synthesis, P.H.Groggins, McGraw-Hill Book House, New York.

DEC.APP.CHEM. 2.05: APPLIED CHEMISTRY PRACTICALS –IV

1. Preparation of Co-ordination compounds
   Hg{Co(sCN)4], Ni(dMG)2, Mn(acac)3, [Ni(NH3)6]C12, [Co(NH3)5Cl]C12, K3[Fe(C204)3]
2. Analysis of Co-ordination compounds for metal and ligand contents.
   (i) Fe and C204 in K3[Fe(C204)3]
   (ii) Co and Cl in [Co(NH3)5CI]C12
3. Determination of Ionisable Cl from complexes
4. Determination composition of complexes
5. Determination of stability constants
6. Determination of magnetic susceptibility of paramagnetic materials by using Guoy magneticbalance.
7. Recording electronic spectra of complexes: interpretation and assignment of bands.
8. Recording IR spectra of ligands and complexes and interpretation.
9. Seperation of Ni, Mn, Co and Zn by TLC
10. Determination of Uranium by extractive spectrophotometiy.
11. Paper Chromatography-Separation of Fe and Ni; Cu andNi
12. Potentiometric titration; Cu vs EDTA
13. Determination of iron in mustard seeds by calorimetric method.
14. Determation of Phosphate in peas by calorimetric method.

References:

1. Quantitative Chemical Analysis-I.M. Kolthoff, E.B. Sandell E.J. Meehan and S. Brukenstein,McMillan Company, 1968.
2. Vogel's Text Book of Quantitative Chemical Analysis G.H. Jeffery, J. Bassett, J. Mendhanand R.C. Denny, ELBS, Longman 5th edition, 1989.
3. Advanced Practical Inorganic Chemistry- Gurdeep Raj, Goel Publishing House, 10th edition, 1994.
4. A Text Book of Quantitative Chemical Analysis -A.I. Vogel, ELBS Longman 3rd edition, 1961.
5. Quantitative Analysis R.A. Day and A.L. Underwood, Prentice Hall of India, 1993.
6. Commercial Method of Analysis Snell and Biffen.

DEC.APP.CHEM. 2.06: APPLIED CHEMISTRY PRACTICALS –V
(Preparation and Determinations of Dyes, Drugs and Agrochemicals)Determinations:

1. Determination of Phenols
2. Determination of amines and amino acids
3. Determination of carbohydrates
4. Determination of aldehydes and ketones
5. Determination of hydroxy group
6. Determination of ascorbic acid in tablet
7. Determination of mepacrine in tablet
8. Determination of Cholestrol
9. Determination of Saponification value
10. Determination of acetyl and iodine values.

Preparations:

Preparation of some important drugs, dyes (dying of cotton, polyester and wool) and agrochemicals involving multistep organic synthetic reactions such as acetylation, acylation, alkylation, condensation, hydrolysis, esterification, diazotisation and molecular rearrangements.

References:

1. Vogel's Text Book of Practical Organic Chemistry, by furniss, Hannaford, Smith and Tatchell, ELBS, Longman
2. Advanced Practical Organic Chemistry by N.K. Vishnoi, Vikasa Publishing House.
3. Handbook of Practical Organic Chemistry by Clark.
4. Practical Organic Chemistry by O.PAgrawal.
5. Comprehensive Practical Organic Chemistry by V.K. Ahluwalia, Reny Agarwal UniversitesPress Pvt. Ltd. (2000).

DEC.APP.CHEM. 2.07: APPLIED CHEMISTRY PRACTICALS –VI

1. P^{ka} values of weak acids by potentiometric method
2. Determination of cuso4 spectrophotometrically
3. p^{H} and p^{ka} values of weak acids by conductometric method
4. Estimation of iodine in iodized common salt using iodometry
5. Partition coefficient of acetic acid in water and butanol
6. Electrogravimetry

7. Kinetics of the reaction between potassium iodide and potassium perrsulphate
8. Phase-diagram
9. An experiment to determine the energy of activation
10. Chemical oxygen demand (COD)
11. Effect of ionic strength on rate constant of the reaction.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.A. POLITICAL SCIENCE

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

PROGRAMME PROJECT REPORT

1. INTRODUCTION

M.A. Political Science is a postgraduate program that provides in-depth knowledge and understanding of political systems, theories, ideologies, and policies. It focuses on the study of politics, governance, public administration, international relations, political economy, and political behavior. Open and Distance Learning, is a flexible mode of education that allows students to pursue their studies without physically attending a college or university. ODL offers the advantage of self-paced learning, flexibility in terms of time and location, and accessibility to students who are unable to attend traditional classes due to personal or professional commitments.

The introduction of M.A. Political Science in ODL allows students to pursue their passion for politics and acquire a postgraduate degree in a flexible and convenient manner. The program provides a comprehensive understanding of political systems, theories, and policies, which can be applied to various career fields such as public administration, policy analysis, journalism, teaching, and research.

The program typically covers topics such as comparative politics, political theory, public administration, international relations, political economy, and research methodology. The curriculum is designed to equip students with the necessary knowledge and skills to critically analyze political issues and develop solutions to complex problems.

Overall, the introduction of M.A. Political Science in ODL provides a great opportunity for students to acquire a postgraduate degree in a flexible and convenient manner, while gaining the necessary skills and knowledge to make a positive impact in the field of politics and governance.

2. PROGRAMME MISSION AND OBJECTIVES

2.1 OUR VISION

The Programme endeavors to endure a profound level of critical and resourceful thinking about literature and the society thereby creating a vibrant and responsible learning community of high values with societal coordination.

the vision for MA Political Science is to produce graduates who are well-equipped to contribute to the development and progress of their communities, nations, and the world at large, by applying their knowledge and skills to address the challenges of governance and

politics.

2.2 OUR MISSION

MA Political Science is to prepare graduates for a range of career paths, including public service, policy analysis, journalism, teaching, and research. The program also aims to provide graduates with the necessary skills and knowledge to pursue further academic and professional development.

2.3 OUR OBJECTIVES

1) Provide students with an in-depth understanding of political systems, theories, ideologies, and policies, through a comprehensive and rigorous academic program.
2) Develop students' critical thinking, research, and communication skills, enabling them to analyze political issues, assess policy implications, and propose effective solutions to contemporary political problems.
3) Foster civic responsibility and global citizenship among students, preparing them to become active and responsible members of society.
4) Promote interdisciplinary learning by exposing students to a range of social science disciplines, including economics, sociology, and history, that are essential to understanding political phenomena.
5) Provide students with the opportunity to engage in research and scholarship that addresses critical political issues, and to contribute to the advancement of knowledge in the field of political science.
6) Prepare graduates for a range of career paths, including public service, policy analysis, journalism, teaching, and research, and provide them with the necessary skills and knowledge to pursue further academic and professional development.
7) Promote the development of democratic and inclusive societies by producing graduates who have a sound understanding of the complexities of political processes and who can engage in informed debate and dialogue about critical political issues.

3. RELEVANCE WITH HEI'S MISSION AND GOALS

ODL aims to provide flexible and accessible education to students who are unable to attend traditional classes due to personal or professional commitments. The introduction of MA Political Science in ODL provides students with the opportunity to pursue their postgraduate education in a flexible and convenient manner, without compromising their personal and professional commitments.

Moreover, the MA Political Science program is designed to equip students with critical thinking, research, and communication skills, which are essential to pursuing education through ODL mode. The program promotes self-paced learning and encourages students to take responsibility for their own learning, which aligns with the ODL mission of promoting lifelong learning and empowering individuals to take control of their educational journeys.

The MA Political Science program also fosters a sense of civic responsibility and global citizenship, preparing students to become active and responsible members of society, which is consistent with ODL goals of promoting social inclusion and community engagement.

4. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The prospective target group of learners for MA Political Science are individuals who have completed their undergraduate education and are interested in pursuing a career in politics, public service, policy analysis, journalism, teaching, research, or related fields.

The target group may include recent graduates with a degree in political science or a related discipline, as well as professionals who are seeking to enhance their knowledge and skills in the field of political science. The program is also relevant to individuals who are interested in pursuing a career in diplomacy, international relations, or global governance.

Moreover, the MA Political Science program may appeal to individuals who are interested in civic engagement and the promotion of democratic and inclusive societies. The program fosters a sense of civic responsibility and global citizenship, preparing students to become active and responsible members of society.

In terms of demographics, the target group of learners may include individuals from diverse backgrounds, cultures, and regions, as political issues and processes are relevant to all societies and nations. The program is also relevant to individuals who are interested in the study of politics from a comparative and global perspective, and who are willing to engage in informed debate and dialogue about critical political issues.

Overall, the prospective target group of learners for MA Political Science is diverse, encompassing individuals with different educational and professional backgrounds, as well as individuals who are interested in civic engagement and the promotion of democratic and inclusive societies.

5. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN ODL MODETO ACQUIRE SPECIFICSKILLS AND COMPETENCE

For

An MA Political Science ODL (Open and Distance Learning) program can be appropriate for acquiring specific skills and competencies, depending on how the program is designed and implemented. Here are some ways in which an ODL program can be suitable for acquiring skills and competencies in political science:

- Flexibility: One of the major advantages of an ODL program is its flexibility, which allows students to study at their own pace and in their own time. This flexibility can be particularly useful for acquiring specific skills and competencies in political science, as it enables students to explore and engage with various political theories and concepts at their own pace.
- Multimedia Learning Materials: An effective ODL program in political science should provide multimedia learning materials, such as videos, podcasts, and interactive simulations, that enable students to explore and learn about political theories and concepts in an engaging and interactive manner. This can help students acquire specific skills and competencies in political science, such as critical thinking, analysis, and interpretation.
- Online Collaborative Learning: An ODL program can also provide opportunities for online collaborative learning, where students can engage in discussions and exchange ideas with their peers and instructors. This can be particularly useful for acquiring specific skills and competencies in political science, such as teamwork, communication, and leadership.
- Self-Assessment and Feedback: An effective ODL program in political science should provide students with self-assessment tools and feedback mechanisms, such as quizzes, assignments, and exams, that enable them to assess their understanding of the subject matter and receive feedback from their instructors. This can help students acquire specific skills and competencies in political science, such as self-reflection, self-regulation, and problem-solving.
- Applied Learning: An effective ODL program in political science should also provide opportunities for applied learning, such as internships, research projects, and case studies, that enable students to apply their knowledge and skills in real-world settings. This can help students acquire specific skills and competencies in political science, such as data collection, analysis, and interpretation.

Overall, an ODL program in political science can be appropriate for acquiring specific skills and competencies, as long as it is designed and implemented effectively, with a focus on flexibility, multimedia learning materials, online collaborative learning, self-assessment and feedback, and applied learning.

6. INSTRUCTIONAL DESIGN

6.1 CURRICULUM DESIGN

The Syllabus contains Core Courses (CR) and Department Electives (DE). A student is required to take compulsorily 15 credits of Core courses and 10 credits from a pool of Department Electives from parent Programme in each semester.

6.2 CURRICULUM FOR M.A. Political Science

S. No	Course Code	Name of the Course
1	MAPS-101	Political Thought from Plato to Marx
2	MAPS -102	Indian Government and Politics and State Politics in India
3	MAPS -103	Comparative Politics and Politics of Developing Countries
4	MAPS -104	Major Ideas and Issues in Public Administration

S. No	Course Code	Name of the Course
1	MAPS -201	Political Theory
2	MAPS -202	Public Administration
3	MAPS -203	Political Sociology
4	MAPS -204	Western Political Thought

7. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTIONS& EVALUATION:

7.1 PROCEDURE FOR ADMISSIONS

1. The admission for the different programmes offered by the University is done by the Institution in consultation with the University.

2. Application forms are invited from the aspirants through online form floated on the University website.

3. Aspirants have liberty to pay the application fee/Admission fee either through online bankingand they are required to submit the hard copies of the form to the institute.

4. Once the deadline for submitting the application form is over, the online submitted application forms are scrutinized and list of all the candidates who has applied will be floated on the website.

7.2 ELIGIBILITY FOR ADMISSION CRITERIA

- Candidates for admission to the M.A. Political Science PG Degree Programme shall have passed any Under Graduate Degree or equivalent examination of any authority, recognized by this university.

6.3. ELIGIBILITY AND DURATION OF THE COURSE

Programme	Eligibility	Duration	Credits
M.A.Political Science	Any UG Degree	2 Years	80

6.4 EVALUATION SYSTEM:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

6.4.1 CONTINUOUS INTERNAL ASSESSMENT "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.

- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

6.4.2 THEORY COURSE ASSESSMENT WEIGHTAGES:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Seminar/Assignments/Project/ Lab	5%	--
4.	Surprise Test / Quiz / Lab	5%	--
5.	End Semester Exam	70%	2 to 3 hours

8. 4.3 GRADING SYSTEM

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass

<40	U	00	To Reappear for End-Semester Examination

6.4.4 GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

6.4.5 GRADE SHEET

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe

first semester.

- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

6.4.6 CLASS/DIVISION

Classification is based on as follows: CGPA

≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

6.5 ELIGIBILITY FOR THE AWARD OF M.A. POLITICAL SCIENCE

A student will be declared to be eligible for the award of the M.A. Political Science degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulated time:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

6.6 RE-VIEW OF ANSWER SCRIPTS / SINGLE VALUATION

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

9. INSTRUCTIONAL DELIVERY MECHANISM

9.1 PERSONAL CONTACT PROGRAMMES

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

9.2 OPTIONAL CONTACT PROGRAMMES

On demand of a sufficient number of students, the Directorate may organize optional contact programmes.

9.3 EXTENSION LECTURES

MPBOU organizes extension lectures to be delivered by eminent scholars of national repute from time to time. Students are informed in advance about such extension lectures.

9.4 INDIVIDUAL COUNSELLING AND GUIDANCE

The students can visit the Directorate and seek individual guidance and counselling from the concerned coordinators. Besides, students can seek guidance from the counsellors engaged bythe Centre for Open and Digital Education of MPBOU.

10. MEDIA

10.1 SELF-LEARNING PRINTED MATERIAL

The students will be provided learning material following the four quadrant approach by

the UGC.

10.2 E STUDY MATERIAL & E TUTORIALS

The students are also provided the study material in the e-form which is availableon the official website of the institution. Besides, e-Tutorials are also prepared from time to time in accordance with the general and specific theme related contents of the course syllabus. These are also made available on the same website and are offered as a supplement to the Study Material.

11. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARYRESOURCES

Internet Leased Line

BSNL - 1 Gbps – Lease Line Link are available at the university.

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: Institute is fully networked with a campus wide network

interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

12. COST ESTIMATE OF THE PROGRAMME

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MA Political Science	5,00000/-	3,00000/-	8,00000/-

13. QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMMEOUTCOMES

Centre for Quality Assurance Cell (CIQA) MPBOU created under the NAAC guidelines, is an august body at MPBOU comprising Senior Academicians, Thought Leaders, Eminent Alumni, Industry representative, Retired and Serving Senior Academicians from institutions of repute, Management Representative and a Local Body Member. The CIQA acts as a guiding force to ensure the quality of services and undertake reforms in terms of Infrastructure and Personnel addition. CIQA meets once in three months with a set agenda, for which the inputs are sought from various stake holders such as students, teachers, parents, alumni, administration and management. The CIQA in MPBOU ensures the adoption of qualitative distance education right through all the processes of each programme offered by the university. The salient features of OL programme in MPBOU are

- Very Strong Industry - Academic Collaboration
- Live class room sessions
- Online virtual class room sessions with one to one interactions
- Highly productive learning environment and digital library access
- Hands on training on latest cutting edge technologies and laboratoryfacilities
- Experiential learning with case studies and mini project
- MOOC courses enabled Curriculum
- Industry focused electives offered by well experienced faculty

M.A. POLITICAL SCIENCE

SCHEME OF EXAMINATION

Each Theory Paper 3rd hrs. duration Marks: 100
Disseration/Thesis/Survey Report/Field work, if any Marks: 100

1. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be neceasary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper separately.
2. A candidate for a pass at each of the previous and the Final examination shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% Marks in practical (s) wherever prescribed the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper Work, wherever prescribed, he shall be deemed to have failed at the examination not with-standing his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of thefinal examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below:
   First Divison 60% of the aggregate marks taken together
   Second Division 48% of the Previous and the Final Examination
   All the rest will be declared to have passed the examinations.
3. If a candidate clears any paper (s) Practical (s)/Dissertation preseribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36% in the case of practical) shall be taken into account in respect of such Paper(s) Practical(s). Dissertation that are cleared after the expiry of the aforesaid period of three years, provided that in case where a candidate requires more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into account as would enable him to make the deficiency in the requisite minimum aggregate.
4. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplacte so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examination. Only such candidate shall be permitted to offer Dissertation/Field work/Survey Report/Thesis (if provided in the scheme of examination) in lieu of a paper who have secured at least 55% marks in the agtgregate of all scheme and I and II semester examination taken together in the case of semester scheme, irrespective of the number of papers in which a candidate actually appeared at the examination.

M.A. POLITICAL SCIENCE

There shall be nine papers. Each paper will be of three hours duration and carry 100 Marks. Out of nine papers, there shall be seven compulsory and two optional papers, from any one of groups in the Final class only.

The Candidate appearing in Previous class shall offer four papers and in the Final, five papers as per following schedule.

M.A. PREVIOUS

Compulsory Papers:

Paper-I : Political Thought from Plato to Marx
Paper-II : Indian Government and Politics and State Politics in India
Paper-III : Comparative Politics and Politics of Developing Countries
Paper-IV : Major Ideas and Issues in Public Administration

M.A. PREVIOUS EXAMINATION

PAPER-I: POLITICAL THOUGH FROM PLATO TO MARX

Duration: 3 Hours **Maximum Marks:** 100

Note: Each theory paper is divided into 3 independent units. The question paper will be divided into 3 parts, Part-A, Part-B and Part-C. Part-A (20 marks) is compulsory and contains 10 questions, atleast 3 questions from each unit. Each question is of 2 marks (20 words). Part-B (20 marks) is compulsory and will contain 5 questions, atleast 1 from each unit. Candidate is required to attempt all 5 questions. Each question is of 4 marks (50 words). Part-C (60 marks) contains 6 questions, 2 from each unit. Candidate is required to attempt 3 questions, 1 from each unit. Each question is of 20 marks (400 words)

UNIT-I

Greek Political Thought: Plato and Aristotle

Medieval Political Thought

St. Augustine and St. Thomas Aquinas**Early**

Modem Political Thought Niccolo Machiavelli & Jean Bodin

UNIT-II

Contractualist and Utilitarian Political Thought:
Thomas Hobbes, John Locke and J.J. Rousseau.Jeremy Bentham & John Stuart Mill

UNIT-III

Idealist and Socialist Political Thought:
Hegel, T.H.Green and Gramschi
Karl Marx, I V Lenin and Mao Tse Tang

Recommended Readings:

1. Allen: A History of Political Thought in 16th Century
2. Davidson: Political Thought in England -The Utilitarian

3. E. Barker: Plato and His Predecessors (In Hindi also)
4. Eric Voegelin: Order and History, Vol. II (Plato and Aristotle)
5. Germino Dante: Beyond Ideology: The Revival of Political Theory
6. Harman: Political Thought from Plato to the Present
7. Hearnshaw: Some Medieval Thinkers;
8. M.Q. Sibley: Political ldeas and Ideology
9. Maxey: Political Philosophy
10. Michael Foster: Master of Political Thought
11. Michael Oakeshott: Political and Social Doctrines of Contemporary Europe
12. R.N. Berki: An Introduction to History of Political Thought
13. Sabine: History of Political Theory
14. Subrata Mukherjee & Sushila Ramaswamy: A History of Political Thought-Plato to Marx
15. W.A. Dunning: History ofPolitical theory (3 Volumes)
16. V.R. Mehta: Foundations of lndian Political Thought, Manohar Publishersand Distributors, New Delhi, 1999.

PAPER-II: INDIAN GOVERNMENT AND POLITICS ANDSTATE POLITICS IN INDIA

Duration: 3 Hours **Maximum Marks:** 100

Note: Each theory paper is divided into 3 independent units. The question paper will be divided into 3 parts, Part-A, Part-B and Part-C. Part-A (20 marks) is compulsory and contains 10 questions, atleast 3 questions from each unit. Each question is of 2 marks (20 words). Part-B (20 marks) is compulsory and will contain 5 questions, atleast 1 from each unit. Candidate is required to attempt all 5 questions. Each question is of 4 marks (50 words). Part-C (60 marks) contains 6 questions, 2 from each unit. Candidate is required to attempt 3 questions, 1 from each unit. Each question is of 20 marks (400 words)

UNIT-I

Approaches to the study of Indian Politics.
Constituent Assembly: Evolution, Composition and Working
Ideological Comments: Preamble, Fundamental Rights. Directive Principles ofState, Fundamental Duties, Secularism.
Federalism: Nature and Working with special reference to emerging trends.Tension Areas and demand for autonomy.

UNIT-II

The Union Government: Role and Actual Working
The President, Council of ministers and Prime Minister
The Parliament: Lok Sabha and Rajya Shabha: Relationship Pattern betweentwo chambers
The Supreme Court: Jurisdictions, Judicial Activism, Public Interest Litigation and Judicial Reform.
State Government: Role and Actual working.
Governor, Council of Ministers, Chief Minister, State LegislaturePatterns and Emerging Trends in State Politics

Determinants of State Politics. .
Salient Features of State Politics of Rajasthan

UNIT-III

Party System: Emerging Trends
Political Parties: National and Regional, Their organisation, Policy and Programme
Pressure Groups: Association, Non Association, Institutional and AnomicIndian Politics: Nature and Patterns of coalition politics
Voting Behaviour: Emerging TrendsElectoral Reforms:

Challenges to Parliamentary Democracy

- Economic : Class, Poverty and corruption, Globalisation, Liberalisation and Privatisation
- Sociological: Caste, Religion, Region, Language, Criminalisation, Terrorism
- Political: Regional Political Parties and Pressure groups.

Recommended Readings*:*

1. Bidyut Chakrabarty & Rajendra Kumar Pandey: Indian Government and Politics, Sage Publications, New Delhi, 2008
2. Bhawani Singh: Council of States in India
3. Bhawani Singh: Politics of Alienations in Assam
4. C.B. Bhambri: Indian Politics since Independence (2 Vols.) MetropolitanBooks, New Delhi
5. D.D. Basu: Introduction to the Constitution of India. Prentice-Hall, New Delhi, 2008
6. Ghanshyam Shah: Politics of Scheduled Castes and Scheduled Tribes
7. Granville Austin: The Indian Constitution: Cornerstone of a Nation,Clarendon Press, oxford, 1966
8. Iqbal Narain: Indian Government and Politics
9. J. C. Johari: Indian Political system, Anmol, New Delhi, 2007
10. J. R. Siwach: Indian Govt. & Politics (Sterling)
11. J. R. Siwach: Office of the Governor (Vikas)
12. J.R. Siwach: Politics of the President's rule in India
13. K.C. Markanandan: Centre State relations, D.K. Publishers Distributors,New Delhi
14. K L Kamal: Democratic Politics in India
15. K.S. Saxena: State Politics of Rajasthan, Aalekh Publishers, Jaipur,2000
16. L. M. Singhvi: Bharat Main Nirvachan
17. L.M.Singhvi: India Political parties (in Hindi & English)
18. M.P. Roy & R.N. Trivedi: Indian Government and Politics (Hindi)
19. Myron Weiner: Party Politics in India, The Development of Multi-PartySystem, D.K. Publishers Distributors, New Delhi
20. Niranjan, Rajadhyaksha: The Rise of India. Its transformation from Povertyto Prosperity, Wiley, New Delhi, 2007.
22. Myron Weiner: Politics of Scarcity- Public Pressure and Political Responsein India

23. Niraja Gopal Jayal, Democratic Governance in India: Challenges of Poverty, Development and Identity, Sage Publication, New Delhi 2001
24. P.C. Mathur: Political Centavis of lndia's Modernity, Aalekh Publishers,Jaipur, 1994
25. Paul R. Brass: The Politics of lndia, since Independence. Cambridge 1992
26. Paull Wallace & Surendra Chopra : Political Dynamics of Punjab (India Political System)
27. Payl Flather, Recasting Indian Politics: Essays on a working Democracy, Palgrave, 2002
28. R. C. Aggarwal: Indian Government and Politics (India Political System), 5th ed., S. Chand and Company, New Delhi, 2000.
29. Rajni Kothari : Bharat Main Rajniti, Politics in India
30. Rakhahari Chatterjee: Union, Politics and the State
31. Reddy and Sharma: Regionalism in India32·
S.K. Kashyap: Coalition Politics in India
33. S.K.Khanna: Coalition Politics in India
34. S.K.Khanna: Crisis of lndian Democracy
35. S.K.Khanna: Reforming Indian Political System
36. S.N. Dubey, Indian Government and Politics, Narain's Publication Agra1998
37. S. N. Singh, Caste, Tribe and Religion in India Politics, Shri Sai, NewDelhi, 2005
38. U.C. Jain: Encyclopedia of lndian Government and Politics in 10 Vols.,Pioneer Publishers, Jaipur
39. Upendra Baxi: The Indian Supreme Court
40. V.R. Mehta: Ideology, Modernisation and Politics in India
41. W.H. Morris Jones: Government and Politics of lndia

Selected Journals:

1. Pacific Affairs
2. Asian Survey
3. Journal of Asian Studies
4. Political Science Review
5. Indian Journal of Political Science
6. Economic and Political Weekly

PAPER-III: COMPARATIVE POLITICS AND POLITICS OF DEVELOPING COUNTRIES

Duration: 3 Hours **Maximum Marks:** 100

Note: Each theory paper is divided into 3 independent units. The question paper will be divided into 3 parts, Part-A, Part-B and Part-C. Part-A (20 marks) is compulsory and contains 10 questions, atleast 3 questions from each unit. Each question is of 2 marks (20 words). Part-B (20 marks) is compulsory and will contain 5 questions, atleast 1 from each unit. Candidate is required to attempt all 5 questions. Each question is

of 4 marks (50 words). Part-C (60 marks) contains 6 questions, 2 from each unit.

Candidate is required to attempt 3 questions, 1 from eachunit. Each question is of 20 marks (400 words)

UNIT-I

Comparative Politics: Nature, scope and significance
Perspectives of comparative politics: Traditional and Significance.Evolution of Comparative Politics: Major Landmarks Constitutionalism and challenges to constitutionalism
Approaches to the study of Comparative Politics: System Approach, Structural Functional Approach, Political Sociology, Political economy
Concept: Political Development, Political Modernisation, Political Culture, Political Socialisation, Political Communication.

UNIT-II

Forms of Government: Theory and Practice:
Democracy and Dictatorship, Unitary and federal, Parliamentary and Presidential

Party System:
Political Parties: Organisation, Function and Roles.Pressure Groups: Forms and Roles.
Organs of Government: Organisation, Function and Working
Legislature: Decline of legislatures, Rule Making
Executive: Political executive and Bureaucracy (Permanent executive), theirtypes and roles in rule implementation
Judiciary: Free and fair judiciary, Judicial Review and Rule Adjudication,Functions

UNIT-III

Politics of Developing countries: Nature of anti-colonial struggles and emergence of New Nation State
Adoption of Democratic Models: Problems and ProspectsConstitutionalism: Nature and Challenges
General trends in the working of governmental and political institutionsDependency Theory*:* A theory of under-development.

Recommended Readings:

1. A Pourgerami: Development and Democracy in the Third World, BoulderColorado, West view, Press, 1991.
2. C. F. Strong: Modem Constitutions.
3. C. J. Friederich*:* Constitutional Government and Democracy
4. D. Engels and S. Marks (eds.): Contesting Colonial Hegemony, State and Society in Africa and India, London, B. Tauris, 1994
5. D.E. Apter: The Politics of Modernization, Chicago, University of Chicago Press, 1965.
6. GA. Almond(eds.): The Civic Culture Revisited, Boston, Little Brown, I989
7. GA. Almond, and G.B. Powell Jr.: Comparative Politics :A Development Approach, Amerind, New Delhi, 1972.
8. G.A. Almond, and J.S. Coleman: The Politics of the Developing Areas, Princeton NJ, Princeton University Press, I 960.

9. GA. Almond, and S. Verba: The Civic Culture: Political Attitudes and Democracy in Five Nations, Princeton, NJ, Princeton University Press, 1963.
10. G.A. Almond: Comparative Politics Today: A World View, 7th ed., New York, London, Harper/Collins, 2000. .
11. Herman Finer: Theory and Practice of Modem Governments.
12. J.E. Goldthrope: The Sociology of Post-Colonial Societies: Economic Disparity, Cultural Diversity and Development, Cambridge, Cambridge University Press, 1966.
13. Jean Blonde: An introduction to Comparative Government
14. Kamrava Mehran: Understanding Comparative Politics, Prentice Hall ofIndia Pvt. Ltd, New Delhi, 2000.
15. L. Diamond (ed.): Political Culture and Democracy in DevelopingCountries, Boulder Coloardo, Lynne Rienner, I 993.
16. Macridis, Roy c. The study of Comparative Government, Garden, 1955
17. Ray Samirendra N. :Modem Comparative Polites: Approaches, Methodsand Issues, Prentice Hall oflndia Pvt. Ltd, New Delhi, 2000.
18. Rod Hague & Martin Harrop: Comparative Government and Politics An Introduction 5th ed., Palgrave, 2002
19. S. R. Maheshwarl : Comparative government and politics , 7th ed., Narain's Publications, 2000.
20. Vidya Bhusan, Comparative Politics, Atlantic Publishers New Delhi, 2000.
21. Wheare *:* Modern Constitutions

PAPER IV: MAJOR IDEAS AND ISSUES IN
PUBLIC ADMINISTRATION

Duration: 3 Hours **Maximum Marks:** 100

Note: Each theory paper is divided into 3 independent units. The question paper will be divided into 3 parts, Part-A, Part-B and Part-C. Part-A (20 marks) is compulsory and contains 10 questions atleast 3 questions from each unit each question is of 2 marks (20 words). Part-B (20 marks) iscompulsory and will contain 5 questions, atleast 1 from each unit. Candidate is required to attempt all 5 questions. Each question is of 4 marks (50 words). Part-C (60 marks) contains 6 questions, 2 from eachunit. Candidate is required to attempt 3 questions, 1 from each unit. Each question is of 20 marks (400 words)

UNIT-I

Public administration: Meaning, nature and scope

New Perspective: New Public Administration, New Public Management Perspective

Relation with Politics

Impact on Public Administration: Information Technology, Globalisation, Liberalisation, Privatisation and e-Governance

Approaches: Ecological approach (riggs), development administration approach, political economy approach, liberal democratic, Marxist approaches and process of public policy, behavioral approach, system approach.

UNIT-II

Theories of organisation: Classical theory, The Bureaucratic Theory, Human Relation theory, Scientific Management.

Administrative Behaviour: Rational decision making approach (Simon), Theories of leadership, theories of motivation and communications

UNIT-III

Organizational patterns of public enterprises: Department, Corporation andcompany; problems of Public enterprises, PPP (Public Private Partnership) Financial administration: Formulation, Approval and Execution of Budget,Parliamentary control over finance, public accounts committee and PublicEstimates Committee

Legislative and Judicial control over administration, RTI (Right to Information),Lokpal and Lokayukta, Administrative Reforms,

Personnel administration: Position, classification, recruitment, training, promotions

Neutrality of Civil Services, Downsizing of Bureaucracy, Modernisation of Bureaucracy and Administrative Culture, Role of Civil Services in Developing Society

Recommended Readings:

1. A.T. Markose: Judicial Control of Administrative Methods in Administration
2. Arora, Ramesh K (ed) : Public Administration: Fresh Perpsectives, Aalekh, Jaipur, 2004
3. Burkhead: Government Budgeting
4. C. Bernard: Functioning of the Executive
5. D. Waldo: Ideas and issues in Public Administration, Durham: DukeUniversity Press, 1970
6. Dr. D. K. Mishra : Samajik System Prakashan
7. Gladden: Essentials of Public Administration
8. Gorwala: Report on the Public Administration of India
9. Government of India: Fifth Central Pay Commission Report, Vol. I, II andIII
10. H. Simon: Administrative Behaviour: India
11. Hoshiar Singh (ed.): Expanding Horizons of Public Administration, Aalekh Publishers, Jaipur, 2005
12. L. D. White: Introduction to the study of Public Administration
13. M. Marx: Elements of Public Administration
14. M. Crozier: The Bureaucratic Phenomenon, Chicago, University of Chicago Press, 1969
15. M.P. Sharma: Public Administration: Theory and Practice (English andHindi)
16. Mohit Bhattacharya: New Horizons of Public Administration, Jawahar,New Delhi, 2001
17. Newmann and Summers: The process of Management
18. Nicholas Henry: Public administration and Public affairs
19. Nira Singh: Administration and Development of Indian
20. P. D. Sharma: Police and Political Order in India
21. P. R. Dubashi: Recent trends in Public Administration, Delhi, KaveriBooks, 1995
22. Paul Appleby: Report on the Public Administration of India: Reexamination of India's Administrative System

23. Piffiner and Persthus: Administrative Organisation
24. Piffiner and Sherwood: Public Administration
25. Pigors and Mayers: The Public Personnel Administration
26. R. B. Jain: Public Administration
27. Richard and Neilender: Reading in Management
28. S. R. Maheshwari: Administrative reforms in India, Macmillan, New Delhi-2003
29. T. N. Chaturvedi: Contemporary Administrative Culture of India, NewDelhi, Mittal, 1997
30. Thavaraj and Iyer: Readings in Performance Budgeting
31. V. A. P. Panandikar: Personnel System for Development
32. Willoughby: Principles of Public Administration
33. Zia-ud-din Khan: The Span of Control
34. Vohra Committee Report: Government of India, Ministry of Home Affairs,1995

List of Papers for M.A.-II (Political Science)

Compulsory Papers (Two papers)

Nos.	Code No.	Name of the Papers
01	PC - 211	Political Theory
02	PC - 212	Public Administration
03	PO - 211	Political Sociology
04	PO - 212	Western Political Thought

Compulsory Papers:

01	PC-211	Political Theory

Course Rational:

The objectives of the papers to explain the major theories and ideology of Political Science. The paper highlights important theories and ideologies and their relevance in thecontemporary period.

Course Content:

Unit No.	Title of the Topic/sub-topics
I	Political theory: nature, significance, decline and revival.
II	Modern theories of State, Liberal, Marxist and neo-Marxist.
III	Marxism: nature and types
IV	Political Power and Political Authority
V	Legitimacy – grounds of legitimacy
VI	Political Obligation
VII	Sovereignty and popular sovereignty and Secularism.
VIII	Liberalism: Classical liberalism, Revisionist liberalism, Contemporary liberalism
IX	Theories of development, under development and development.
X	Key Concept in Political theory: Liberty – types.

XI	Concept of Equality and Justice: Types, Social Justice, John Rawlls Theory, distributive justice.
XII	Recent trends: Feminism and Environmentalism

Reading List:

1) A Brecht A., Political Theory – Foundations of 20th century Political theory, Bombay 1965.
2) S.P. Varma, Modern Political Theory, Delhi,1990.
3) Quinton A.(Ed.)Political Philosophy, Oxford,1967
4) Ray B.N.(Ed.) Contemporary Political Thinking,Kanishka,Delhi,2000
5) Carnoy,M.,McPherson, Democratic Theory, essays in retrieval,Oxford1977.
6) R.E.Goodin, Green Political Theory, Cambridge,1992.
7) S.E. Benn and R.S. Peters, Social principles and democratic state, Allen and Unwin,1959.
8) Barker E. Principles of social and political theory, Oxford, 1977.
9) Parekh B.C. Rethinking Multiculturalism, Macmillan 2000.
10) Bellamy Richard (Ed.), Theories and Concepts of Politics : An Introduction,1993, Manchester Univesity Press.
11) Bertens Hans, The idea of the post modern, 1995, Rout Ledge.
12) Goodin Robert and Phiplip Petit (Ed.), A companion to Contemporary political philosophy,1993, London, Blackwell.
13) Graham Gordon, Politics in its place: A study of six ideologies, 1986, Oxford Clarendon Press.
14) Harvey David, The condition of post modernity, 1989, London, Oxford University Press.
15) Jameson Fredric, Post Modernism: The cultural logic of late capitalism, 1992, London Verso,(paperback edition)
16) Sitton John F. Recent Marxian Theory, 1996, the state University of New York Press.
17) Vincent Andrew, Modern Political ideologies, 1992, London Blackwell.
18) Heywood Andrew, Political Ideologies, 1992, London, Macmillan.
19) Macridis Roy C, Contemporary Political Ideologies, 1985, Boston Little Brown and Co.

02	**PC-212**	**Public Administration**

Course Rational:

This paper intends to study public Administration in its large systemic outline, to identify key interacting factors and its apparatus and actions and to develop understanding of measuresthat affects its operational efficiency and strengthen its functional utility. It explains various theories approaches to the study of Public Administration and relates it to new developments in Public Administration.

Cause Contents:

Unit No.	**Title of the Topic/sub-topics**
I	Nature and Scope of Public Administration
II	Approaches to the study of Public Administration, New Public Administration and New Public Management.

III	**Organization:** Theories and Principles of Organization. Hierarchy, Span of control, unity of command, centralization, decentralization, Leader ship and Planning.
IV	**Chief Executive:** Staff and Line Agencies, Departments, Commissions and Boards, Public Corporations.
V	**Management**: Concept, principles of management. Leadership as a management functions
VI	**Personnel Administration:** Bureaucracy and Civil Service Structure, Conditions of Service and Retirement benefits, Discipline and Morale, Employer-Employee Relations. Generalist and Specialist Controversy, neutrality of civil service, whitely council. Human Resource Development – Trainings and Promotions.
VII	Financial Administration: Significance, Budgetary Process, and Parliamentary Control through Financial Committees. Administrative control over Finance, Accounting and Audit. CAG (Comptroller of Auditor of General) and Public Account Committee.
VIII	Accountability of public administration: Legislative control, Executive control and judicial control.
IX	Policy formation and Public Policy - Factors influencing policy making
X	Administrative Law: Delegated Legislation, Administrative Tribunals.
XI	Problems of Corruption: Ombudsman, Lokpal and Lokayukt, CVC (Central Vigilance Commission)
XII	Administrative Improvements: Scientific Management O & M., Lakhina Pattern, Administrative Reform Commission- I and II.

Reading List:

1. L. D. White: - Introduction to the study of Public Administration. New York: Macmillan 1948
2. Nigro, F. A.: - Modern Public Administration., New York: Harper and Row, 1970
3. Calden, G. E.: - The Dynamics of Public Administration. New York: Holt-Rinehard, Winstan.1971
4. Avasthi, A. and Maheshwari, S: Public Administration. (latest edition)
5. Gladden, E. N.: Central Govt. Administration, London: Staples Press 1972.
6. Fesher, James, W.: Public Administration: Theory and practice , New Jersey: Prentice Hall,1980
7. Indian Institute of Public Administration, Maharashtra Branch: Organization of Govt.in Maharashtra, Bombay, Popular Prakashan, 1965
8. Administrative Reforms Commission (Govt. of India)

a. Report on Machinery of Govt.

b. Report on State Administration.

9. Self, P: - Administrative Theories and Politics, London: George Allen & Unwind 1972.
10. Vishnoo Bagman, Vidya Bhushan: Public Administration. Ram Nagar, New Delhi-2003.
11. S. L. Goal: Advanced Pub. Administration Deep & Publication Pvt. Ltd. 2003.
12. S. R. Maheshwari - Administrative Theory an introduction 1998. New Delhi. Mcmillan India Ltd.

13. Publishers. K. D. Trivedi - Organization and Administrative theories. 1994. Jqipur. Illustrated Book
14. S. P. Naidu - Public Administration: Concepts and theories 1996 Hydrabad. New Age International Publication.
15. B. L. Saldana 7 M. P. S. Public Administration in theory and practice 2001. Allahabad.
16. Awasti and Maheshwari - Public Administration. Laxmi Narayan Agarwal. Latest Agra.
17. P. R. Dubhashi Recent Trends in Public Administration - 1995 - Delhi. Kaveri Books.
18. G.E.Robert & H.D. Kingemann -(Ed) New Handbook of Political Science- Oxford University Press Publication 1996.
19. Gole S. L. Advanced Public Administration - Deep and Deep Publication 2003.

Elective Papers (Any one)

01	**PO-211**	**Political Sociology**

Course Rational:

The main Object of this course is to expose the students to the early origins and development of social aspect of political science. Also analytical abilities of students to enable them to understand and interpret the social reality.

Course Contents:

Unit No.	Title of the Topic/sub-topics
I	Nature and Scope of Political Sociology.
II	Intellectual Foundations of Political ociology: - Karl Marx: Class, State and Revaluation. Max Weber: class, Status and Authority. Behavioral and Structural- Functional Approach.
III	Political Modernization, Political Change, Development and Revolution.
IV	Political Culture, Types of Culture.
V	Political Socialization and its agencies.
VI	Political Participation:Different forms of Political Participation, Methods, and Techniques.Problems of Political Participation.
VII	Social Movements and its impact on Political Process.
VIII	The Elite: Theories of elite (Moscow, Pareto, C. Wright Mills, Braham), Role of Elite in Political Process, Elite and Democracy.
IX	Political Parties: Party Politics, Ideologies and Coalitions Politics.
X	Interest Groups, Pressure Groups (Lobbying) and Political Parties: Their Social bases and role in Political Process
XI	Caste and Class Politics.
XII	Gender and Religious Politics

Reading List:

1. Bendix, Rein hard (ed.) State and Society (Boston: Little, Brown and co., 1968.)
2. Bottomore, T.B.: Political Sociology, (Bombay, B. I. Publication, 1980.
3. Cozier, Lewis (Ed) Political Sociology- Selected Essay (New Yourk: Harper and Row, 1967.
4. Dowse, Robert, E. and Hughes, Johan: A Political Sociology, New York, Basik books, 1971.
5. Duverger, Maurice, The idea of Politics: The use of power in society, London, Meuthen,1967
6. Eisenstadt, S. N., Political Sociology, New York , Basic Books, 1971.
7. Horowitz, Lrving L., Foundations of Political Sociology, New York, Harper & row,1972
8. Nordlinger Eric A, Politicas and Society, Englewood Clefts, Prentice Hall, 1970
9. Runciman, W. C. Social Science and Political Theory, London, Cambridge University Press, 1965
10. Varma S. D, Modern Political Theory, New Delhi, Vikas 1982
11. Wasbum, P. C, Politicas of Sociology, Englewood Cliffs, Prentice Hall, 1982
12. Galtung, Johan, Structral Theory of Revolution, Rotterdam University Press, 1974
13. Michael Rush and Althoff, An Introduction of Political Sociology, Nelson's University Paperback, 1972
14. S. Puri, Modern Political Analysis, New Academic Printers, 1997
15. Dr. Kumar Narain's , Political Sociology, Lakshmi Agrawal Publication, 2004

02	PO- 212	Western Political Thoughts

Objectives:

The Purpose of this paper is to create awareness about the distinctive features of Political Theories in Modern World. It critically analyses the studies of different aspects of Political Thoughts and emphasizes the destructive contributions of the western Political Thinkers

Course Contents:

Unit No.	Title of the Topic/sub-topics
I	Plato
II	Aristotle
III	Saint Augustine
IV	Machiavellian
V	Hobbes
VI	Lock
VII	Rousseau
VIII	Karl Marx
IX	Hegel
X	J.S. Mill
XI	Gramsci
XII	John Rawls

Reading List:-

1. Avineri Shlomo, Hegel's theory of Modern State, 1972. Cambridge, CambridegeUniversity Press.
2. Avineri Shlomo : Social and Political Thought of Karl Marx, 1977. (Indian edition), Delhi, S. Chand and Company, Cambridge University Press.
3. M. H. Lessnoh, Political Philosophers of 20th Century, Blackwell, Oxford, 1990.
4. B. Parekh, Contemporary Political Thinkers, Martin Robertson, Oxford, 1982.
5. D. M. Kellner, H. Marcuse and the crisis of Marxism, Macmillan, London, 1984.
6. W. B. Liess, C. B. Macpherson : Dilemmas of Liberalism and Soclialism, St. Martin's Press, New York, 1989.
7. Macpherson, C. B. Life and Times of Liberal Democracy, New York, 1979.
8. J.Rowls, Theory of Justice, Oxford University Press, 1972.
9. Kolokavsky, L. Main currents of Marxism Vol. III, Oxford University Press, 1981.
10. R. Simon, Grasses Political Thoughts, Latorence and Wishart, London, 1982.
11. Gandhi M. K., Hind Swaraj, Nav Jeevan, Ahemadabad, 1998.
12. Scram S., The Political Thought of Mao Tse Tung, Praeger, New Yorkk, 1963.
13. M. Sandel, Liberalism and Limits of Justice, Cambridge University Press, 1982.
14. A. Gutman (ed.) Multiculturalism, Princeton, University Press, Princeton, 1994.
15. B.Parekh, Rethinking Multiculturalism, Cultural Diversity and Political Theory, Macmillan Press, London, 2000.
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PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.A. SOCIOLOGY

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

PROGRAMME PROJECT REPORT

1. INTRODUCTION

A Master of Arts (MA) in Sociology in Open and Distance Learning (ODL) is a postgraduate degree program that provides students with an in-depth understanding of social structures, processes, and phenomena. ODL is a mode of education that allows students to study at their own pace and convenience, using online learning platforms and other distance learning technologies. The MA in Sociology in ODL program typically covers topics such as social inequality, social change, social policy, globalization, and gender studies. Students will also develop research skills and critical thinking abilities that are essential for analyzing social issues and formulating effective solutions.

The program is designed to be flexible, allowing students to balance their studies with other personal and professional commitments. Students can access course materials and participate in discussions with their peers and instructors using online platforms. They will also be required to complete assignments and research projects, which they can submit online.

MA in Sociology in ODL program can pursue a variety of career paths, such as social research, policy analysis, community development, social services, education, and advocacy. They can also choose to pursue a PhD in Sociology or related fields to deepen their knowledge and expertise in the discipline.

2. PROGRAMME MISSION AND OBJECTIVES

2.1 OUR VISION

The MA in Sociology in ODL program aims to foster a deep appreciation of the complexity and diversity of human societies and cultures, and to encourage critical thinking and reflexivity in the analysis of social phenomena. Through a flexible and technology-enabled learning environment, the program seeks to provide students with a dynamic and engaging educational experience that suits their individual needs and preferences.

2.2 OUR MISSION

The mission of the MA in Sociology in ODL program reflects a commitment to social transformation, academic excellence, and innovation, and aims to prepare graduates to

become leaders and agents of change in their communities and the world.

2.3 OUR OBJECTIVES

The objectives of a Master of Arts (MA) in Sociology program are to provide students with a deep understanding of social structures, processes, and phenomena, and to equip them with the knowledge, skills, and tools to analyze and address social issues and challenges. Specifically, the objectives of an MA in Sociology program include:

- Developing a comprehensive understanding of the theoretical frameworks and concepts used to analyze social structures and processes, and the ability to apply these concepts to real-world social issues.
- Developing the ability to conduct research using appropriate quantitative and qualitative research methods, and to analyze and interpret research findings.
- Fostering critical thinking and reflexivity in the analysis of social issues and phenomena, and the ability to formulate and evaluate solutions to social problems.
- Developing a deep appreciation of the diversity of human societies and cultures, and the ability to engage in interdisciplinary and cross-cultural dialogue and collaboration.
- Developing the ability to communicate effectively and persuasively in written and oral formats, and to engage in effective teamwork and collaboration.
- Promoting a commitment to social justice and equity, and the ability to understand and challenge social inequalities, discrimination, and oppression.
- Preparing graduates for advanced academic and professional pursuits in the field of sociology and related disciplines, such as social research, policy analysis, community development, social services, education, and advocacy.

The objectives of an MA in Sociology program reflect a commitment to academic excellence, social justice, and innovation, and aim to prepare graduates to become leaders and agents of change in their communities and the world.

3. RELEVANCE WITH HEI'S MISSION AND GOALS

The Master of Arts (MA) in Sociology program offered through Open and Distance Learning (ODL) is highly relevant to the mission and goals of Higher Education Institutions

(HEIs) in several ways:

- Accessibility: ODL programs enable HEIs to expand access to education and training to a wider and more diverse population of students, including those who are unable to attend traditional on-campus programs due to geographical, financial, or other barriers. This aligns with HEIs' mission to provide equitable and accessible education to all.
- Flexibility: ODL programs are designed to be flexible and self-paced, allowing students to balance their academic pursuits with their personal and professional commitments. This aligns with HEIs' mission to provide education that is responsive to the needs and preferences of individual learners.
- Innovation: ODL programs leverage technology and innovative teaching methods to deliver education that is dynamic, engaging, and interactive. This aligns with HEIs' mission to promote innovation and creativity in teaching, learning, and research.
- Social justice: The MA in Sociology program's focus on social justice, human rights, and equity aligns with HEIs' mission to foster a culture of social responsibility and community engagement. The program equips students with the knowledge, skills, and tools to understand and challenge social inequalities and to work towards a more just and equitable society.
- Academic excellence: The MA in Sociology program's rigorous curriculum, emphasis on research skills, and commitment to intellectual inquiry aligns with HEIs' mission to promote academic excellence and to prepare graduates for advanced academic and professional pursuits in their fields.

Overall, the MA in Sociology program offered through ODL aligns with HEIs' mission and goals by providing accessible, flexible, innovative, socially responsible, and academically rigorous education to a diverse and global student population.

4. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The prospective target group of learners for a Master of Arts (MA) in Sociology program is typically individuals who have completed a Bachelor's degree in Sociology or a related field and who wish to pursue advanced studies in the discipline. Some of the characteristics

of this group may include:

Academic background: Prospective learners are likely to have a strong academic background in Sociology or related fields, with a demonstrated ability to critically analyze and interpret social phenomena.

Professional experience: Some prospective learners may have professional experience in fields related to Sociology, such as social work, community development, policy analysis, or education.

Age and life stage: Prospective learners may range in age and life stage, from recent graduates to mid-career professionals or individuals looking to make a career change.

Motivation: Prospective learners are likely to be highly motivated to pursue advanced studies in Sociology, with a desire to deepen their knowledge and skills in the discipline, and to contribute to social change and development.

Diversity: The prospective target group of learners for the MA in Sociology program may include individuals from diverse backgrounds in terms of race, ethnicity, religion, culture, language, and socioeconomic status, bringing a variety of perspectives and experiences to the program.

Overall, the prospective target group of learners for the MA in Sociology program is a diverse and motivated group of individuals with a strong academic background and a desire to deepen their knowledge and skills in the discipline of Sociology. They may come from a variety of professional and personal backgrounds, but share a common interest in contributing to social change and development through advanced studies in Sociology.

5. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN ODL MODETO ACQUIRE SPECIFICSKILLS AND COMPETENCE

An MA Sociology ODL (Open and Distance Learning) program can be appropriate for acquiring specific skills and competencies, depending on how the program is designed and implemented. Here are some ways in which an ODL program can be suitable for acquiring skills and competencies in sociology:

- Flexibility: One of the major advantages of an ODL program is its flexibility, which allows students to study at their own pace and in their own time. This flexibility can be particularly useful for acquiring specific skills and competencies in sociology, as it enables students to explore and engage with various sociological

theories and concepts at their own pace.

- Multimedia Learning Materials: An effective ODL program in sociology should provide multimedia learning materials, such as videos, podcasts, and interactive simulations, that enable students to explore and learn about sociological theories and concepts in an engaging and interactive manner. This can help students acquire specific skills and competencies in sociology, such as critical thinking, analysis, and interpretation.
- Online Collaborative Learning: An ODL program can also provide opportunities for online collaborative learning, where students can engage in discussions and exchange ideas with their peers and instructors. This can be particularly useful for acquiring specific skills and competencies in sociology, such as teamwork, communication, and leadership.
- Self-Assessment and Feedback: An effective ODL program in sociology should provide students with self-assessment tools and feedback mechanisms, such as quizzes, assignments, and exams, that enable them to assess their understanding of the subject matter and receive feedback from their instructors. This can help students acquire specific skills and competencies in sociology, such as self-reflection, self-regulation, and problem-solving.
- Applied Learning: An effective ODL program in sociology should also provide opportunities for applied learning, such as internships, research projects, and case studies, that enable students to apply their knowledge and skills in real-world settings. This can help students acquire specific skills and competencies in sociology, such as data collection, analysis, and interpretation.

Overall, an ODL program in sociology can be appropriate for acquiring specific skills and competencies, as long as it is designed and implemented effectively, with a focus on flexibility, multimedia learning materials, online collaborative learning, self-assessment and feedback, and applied learning.

6. INSTRUCTIONAL DESIGN

6.1 CURRICULUM DESIGN

The Syllabus contains Core Courses (CR) and Department Electives (DE). A student is required to take compulsorily 15 credits of Core courses and 10 credits from a pool of Department Electives from parent Programme in each semester.

6.2 CURRICULUM FOR M.A. ENGLISH

First Year							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**
1	MASO 11	– Principles of Sociology	5	0	0	5	5
2	MASO 12	– Sociology of Indian Society	5	0	0	5	5
3	MASO 13	– Sociological Theories	5	0	0	5	5
4	MASO 14	– Social Research and Statistics	5	0	0	5	5
5	MASO 15	– Rural Society in India	5	0	0	5	5

Second Year							
S. No	**Course Code**	**Name of the Course**	**L**	**T**	**P**	**C**	**TCH**
1	MAEL-206	– Urban Sociology	5	0	0	5	5
2	MAEL-207	–Population Studies	5	0	0	5	5
3	MAEL-208	–Human Resource Management	5	0	0	5	5
4	MAEL-209	–Medical Sociology	5	0	0	5	5
5	MAEL-210	– Social Psychology	5	0	0	5	5

7. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTIONS& EVALUATION:

7.1 PROCEDURE FOR ADMISSIONS

1. The admission for the different programmes offered by the University is done by the Institution in consultation with the University.

2. Application forms are invited from the aspirants through online form floated on the University website.

3. Aspirants have liberty to pay the application fee/Admission fee either through online bankingand they are required to submit the hard copies of the form to the institute.

4. Once the deadline for submitting the application form is over, the online submitted application forms are scrutinized and list of all the candidates who has applied will be floated on the website.

7.2 ELIGIBILITY FOR ADMISSION CRITERIA

- Candidates for admission to the M.A. Sociology PG Degree Programme shall have passed any Under Graduate Degree or equivalent examination of any authority, recognized by this university.

6.3. ELIGIBILITY AND DURATION OF THE COURSE

Programme	Eligibility	Duration	Credits
MA Sociology	Any UG Degree	2 Years	80

6.4 EVALUATION SYSTEM:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment “CIA”: This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination “ESE”: This assessment will be carried out at the end of the Semester as per the Academic Schedule.

6.4.1 CONTINUOUS INTERNAL ASSESSMENT "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

6.4.2 THEORY COURSE ASSESSMENT WEIGHTAGES:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Seminar/Assignments/Project/ Lab	5%	--
4.	Surprise Test / Quiz / Lab	5%	--
5.	End Semester Exam	70%	2 to 3 hours

8. 4.3 GRADING SYSTEM

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the

corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

6.4.4 GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

6.4.5 GRADE SHEET

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.

- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

6.4.6 CLASS/DIVISION

Classification is based on as follows: CGPA

≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

6.5 ELIGIBILITY FOR THE AWARD OF M.A. SOCIOLOGY

A student will be declared to be eligible for the award of the M.A. Sociology degree if he/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

6.6 RE-VIEW OF ANSWER SCRIPTS / SINGLE VALUATION

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

9. INSTRUCTIONAL DELIVERY MECHANISM

9.1 PERSONAL CONTACT PROGRAMMES

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

9.2 OPTIONAL CONTACT PROGRAMMES

On demand of a sufficient number of students, the Directorate may organize optional contact programmes.

9.3 EXTENSION LECTURES

MPBOU organizes extension lectures to be delivered by eminent scholars of national repute from time to time. Students are informed in advance about such extension lectures.

9.4 INDIVIDUAL COUNSELLING AND GUIDANCE

The students can visit the Directorate and seek individual guidance and counselling from the concerned coordinators. Besides, students can seek guidance from the counsellors engaged bythe Centre for Open and Digital Education of MPBOU.

10. MEDIA

10.1 SELF-LEARNING PRINTED MATERIAL

The students will be provided learning material following the four quadrant approach by the UGC.

10.2 E STUDY MATERIAL & E TUTORIALS

The students are also provided the study material in the e-form which is availableon the official website of the institution. Besides, e-Tutorials are also prepared from time to time in accordance with the general and specific theme related contents of the course syllabus. These are also made available on the same website and are offered as a supplement to the Study Material.

11. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARYRESOURCES

Internet Leased Line

BSNL - 1 Gbps – Lease Line Link are available at the university.

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: Institute is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-the-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

12. COST ESTIMATE OF THE PROGRAMME

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MA Sociology	5,00000/-	3,00000/-	8,00000/-

13. QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMMEOUTCOMES

Centre for Quality Assurance Cell (CIQA) MPBOU created under the NAAC guidelines, is an august body at MPBOU comprising Senior Academicians, Thought Leaders, Eminent Alumni, Industry representative, Retired and Serving Senior Academicians from institutions ofrepute, Management Representative and a Local Body Member. The CIQA acts as a guiding force to ensure the quality of services and undertake reforms in terms of Infrastructure and Personnel addition. CIQA meets once in three monthswith a set agenda, for which the inputs are sought from various stake

holderssuch as students, teachers, parents, alumni, administration and management. The CIQA in MPBOU ensures the adoption of qualitative distance education right through all the processes of each programme offered by the university**.** The salient features of OL programme in MPBOU are

- Very Strong Industry - Academic Collaboration
- Live class room sessions
- Online virtual class room sessions with one to one interactions
- Highly productive learning environment and digital library access
- Hands on training on latest cutting edge technologies and laboratoryfacilities
- Experiential learning with case studies and mini project
- MOOC courses enabled Curriculum
- Industry focused electives offered by well experienced faculty

M.A., Sociology

Syllabus

I – YEAR		**Course Code**
Paper I	– Principles of Sociology	MASO 11
Paper II	– Sociology of Indian Society	MASO 12
Paper III	– Sociological Theories	MASO 13
Paper IV	– Social Research and Statistics	MASO 14
Paper V	– Rural Society in India	MASO 15

II - YEAR		
Paper VI	– Urban Sociology	MASO 21
Paper VII	–Population Studies	MASO 22
Paper VIII	–Human Resource Management	MASO 23
Paper IX	–Medical Sociology	MASO 24
Paper X	– Social Psychology	MASO 25

FIRST YEAR

Paper – I

PRINCIPLES OF SOCIOLOGY (MASO 11)

Block - I Introduction to Sociology

Meaning, Definition and origin - Nature and Scope of Sociology - Uses of Sociology Primary Concepts – Society, Community, Association and Institution - Social structure – Status and role, Culture – Its traits and complexes.

Block - II Scientific Study of Social Phenomena

Sociology as a Science, Methods and Perspectives - Sociology and other SocialSciences - Psychology, Anthropology and Economics

Block - III Individual and Society

Theories of the Origin of Society - Socialisation – definition, Processes, Theories,Stages and Agencies - Social Interaction - Social Processes – Associative and Disassociative Social Processes – Social Groups – Definition and Characteristics – Primary and Secondary groups.

Block IV Social Stratification and Social institutions

Social Stratification – Definition concept of Inequality – Caste and Class - Social Institutions – Marriage – Characteristics, types, functions. Family-Characteristics, Types, Functions and recent trends. Religion – Definition and basic components of religion. The social functions of religion.

Block V Social Control and Social change

Meaning, Definition, Nature and Types of Social Control - Meaning and nature ofSocial change - Factors and Theories of social change.

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http:// www.trinity.edu/mkearl/strat.html.www.jert.org.
Social Science Information Gateway
http:// www.sosig.ac.uk

Paper –II

SOCIOLOGY OF INDIAN SOCIETY (MASO 12)

Block – I Hindu Social Organization

Traditional Hindu Social Organization – characteristics of Traditional Indian Society– Three Perspectives of traditional Indian society – Basic Tenets of Hinduism - Purusharthas – Ashramas – Varnas – Caste, Karma, Rinas, Sanskaras.

Block – II The Caste System: Caste, Concept, Origin and its future

a) Meaning - Definition – Three Perspectives – Caste and Varna, Sub- Caste, Caste and Class - Characteristics, Merits and Demerits of Caste system – Changes in the Caste system.

b) Origin of the Caste System : Theories – Structural views about caste, caste among other Communities - Jajmani System – Definition – Merits and demerits – changes

c) Scheduled Castes, Schedule Tribes and Backward classes - Scheduled Castes – Definition – Problem of Scheduled Castes and Tribes

Untouchability: Origin – Eradication of untouchability – Role of Ambedkar and Gandhiji in the Removal of untouchability – Measures for the welfare of Scheduled

Castes/Tribes – Backward Classes /Castes Reservation Policy.

Block-III Marriage, Family and Kinship

a) Marriage – Meaning – Definition – Forms. Hindu Marriage – Aims – Hindu Marriage as a Sacrament – Forms of Hindu Marriage – Changes in Hindu Marriage – Problems of Hindu Marriage (Child marriage, widow Remarriage, Dowry)- Impact of Recent Social legislations on Hindu Marriage – Divorce – Muslim Marriage – Christian Marriage.

b) Family - Joint Family – Definition – types – features – Merits and Demerits, Causes of Disintegration - Future of Joint Family.

c) Kinship : Meaning, Definition, Types, Usages and Functions.

Block-IV Status of Women in India

Women in Ancient India: Vedic and Post – Vedic Periods – Buddhist period,Medival Period – British Period Social Movements initiated by the social reformers –Growth of Womens' organizations –Enactment of Social legislation – Rights of Women.

Block-V Social Movements and Social change in India

Reform Movement: Brahma Samaj – Arya Samaj – Ramakrishna MissionBackward Class Movement: SNDP Movement – Self Respect Movement
Social Change in India : Sanskritization, Westernization, Industrialisation, Modernization, Secularization, Globalisation.

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1. David G. Mandelbaum – Vol-I -Society in India Continuity and change Popular Prakasam – Bombay -1972
2. Ram Ahuja - Indian Social System Rawat Publications 1994 Jaipur and New Delhi
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8. K M Kapadia - Marriage and Family in India Popular Book Depot 1947

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Paper-III

SOCIOLOGICAL THEORIES (MASO 13)

Block-I Introduction to Sociological Theory

Meaning of Theory-Elements of Theory- Characteristics of Theory- Functions of Theory -Types of Theories-Theory and Research – The Reciprocal Relationship

Block – II Sociological Functionalism

Nature and origins of Sociological Functionalism -Emile Durkheim and his Contributions – Social Facts, Social Solidarity – Mechanical and Organic, Sociology of Religion and Suicide. - Robert. K. Merton and his contributions – Latent and manifest functions, Codifications of Functional Analysis - Talcott Parsons – Analytical Functionalism - Functionalism of A.R Radcliffe Brown.

Block – III Conflict Theory

Historical background – Types of conflict - Habermas- critical theory - Karl Marx- Theory of Class Struggle - Ralf Dahrendorf – The Ruler and Ruled- Max Weber – Theory of Conflict.

Block – IV Symbolic Interactionism

Meaning of Human Interactionism – Blumer and the Chicago School - Kuhn and Iowa School - Edmund Husserl and Alftred Schutz - Phenomenology – Geoffman and Garfinkel and Ethnomethodology.

Block – V Exchange Theory

George C. Homans – Exchange Behaviorism- Peter M. Blau- Structural Exchange – **Richard** Emerson – The Exchange Network

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Paper-IV

SOCIAL RESEARCH AND STATISTICS (MASO 14)

Block-I Social Research –An Introduction.

Nature and definition of Social Research, Aims of Social Rearch, Types -Principles of Social Research, Steps in Scientific Research.

Basic elements in Social research - Concepts, Constructs, Variables, Operationalization. Hypotheses- Types, Sources, Uses and Testing of hypothesis.

Block-II Designing of Research

Formulation of research problem, Selection of Sample-Research design- Meaning, Purpose, characteristics of a good research design, Steps in research model -Designs for different types of research-Quantitative research, Qualitative research, Evolution research, Action research.

Block-III Techniques of Data Collection

Introduction - Observation - Types, Process of Observation, Problems inobservation, Advantages and limitations, Observations, Schedule.

Interview- characteristics, Types of interview, Conditions for a successfulinterview, Process of interview, Advantages and limitation, Interview schedule.

Questionnaire – Format, Types of questions, arranging the sequence ofQuestions, Strengths and limitations.

Case study – Purpose of case study, Advantages and criticisms.

Block-IV Data Processing, Analysis and Interpretation

Data processing, Editing, Coding and Tabulation of data, Diagrammatic representation of data.

Data Analysis, Hypothesis testing and interpretation of data.

Report writing – Basic components of Research report other elements of thereport, Optional Elements.

Block-V Application of Statistics to Social Research

Introduction - Relation measures-Rate, Ratio, Percentage Measures of central tendency – Mean, Median and Mode Measures of dispersion – Standard decimation,variance Measures of Association – Correlation, Rank correlation, Yule's Q

Test of Significance – Chi-Square test, the 't'-test, ANOVA, one-way classification.

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Paper V

RURAL SOCIETY IN INDIA (MASO 15)

Block – I Sociology of Rural Society – An Introduction

Subject Matter of rural Sociology - Its relevance - Indian Rural Sociology and Village Studies -Sociology and rural development

Block -II Rural Social System

Family and Kinship - Caste and Class – Religion – Economy Polity - Dysfunctional aspect of the rural Social Structure - Laud form, human habitate andenvironment. –

Block - III Dynamics of Directed Change in Rural India

Panchayat Raj and its institutions - Rural Development in Post Independent India - Green revolution and agricultural modernization - Co-operatives - Evaluation of these initiatives - Self – Help groups.

Block IV Peasant Movements and Agrarian Unrest.

Santhal Rebellion - Moplah Rebellion - Bardoli Satyagraha - Naxal bari movement, Telegana movement.

Block -V Macro Social Processes and Village India

Mainstream body politics and its impact on Villages - Globalisation and its impact on Village - Mass media of Communication and its impact on Rural Society.

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Rawat.
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SECOND YEAR

Paper – VI

URBAN SOCIOLOGY (MASO 21)

Block – 1 Introduction

Definition – origin and scope of urban sociology – rural – urban differences – rural – urban typology study of urban sociology in India – culturalists and structuralistapproaches.

Urbanism and urbanization: concept of urban , urban locality – urban agglomeration urbanism – urbanism as a way of life.

Urbanization :Definition – Process- Impacts of urbanization on family, religion andcaste – empirical social consequences of urbanization - Sub- urbanization – over-urbanization.

Block – II Urban Ecology

Definition – Elements of ecology – Ecological theories – Factorial ecology –Social area analysis – Social indicators movement.

Block –III Growth of Cities

Pre – industrial and industrial cities

City :-Definition – causes for the growth of cities. Types of cities – metropolis – megalopolis – rural urbanization – conurbation.

Block – IV Urban problems

Crime – juvenile delinquency – beggary – alcoholism and drug addiction poverty and unemployment – housing and slums – pollution – water supply – urban development policies.

Block –V Town Planning

Meaning – Objectives – Principles – Necessity of Town Planning of Growth oftowns, satellite growth, forms of town planning – planning of the modern town.

REFERENCE BOOKS:-

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2. J.R. Mellor – Urban Sociology in an unurbanised society. Routledge & Kegan Paul – London.
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5. Ram Ahuja – Social problems in India Rawat publications – N.Delhi
6. C.N.Sankar Rao – Sociology – S. Chand & Co – N. Delhi
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Paper – VII

POPULATION STUDIES (MASO 22)

Block – I Introduction to Population Studies:

Definition and nature of demography
Scope of demography
Importance of demographic study
Concepts :- (a) fertility – factors influencing fertility, measures of fertility – CBK,GFR,TFR.
(b) mortality – causes of mortality, measures of mortality – CDR, IMR, MMR.
(C) migration – immigration and emigration, push and pull factors in migration.

Block – II Theories of Population:

Malthusian theory of population

Theory of demographic transition – C.P. Blacker

Social Theories of Population,- theory of social capillary, theory of increasing prosperity and pleasure, Theory of Rationalism and theory of voluntarism

Block – III Source of Demographic Data:

Population census – census of India – history and procedureVital statistics – vital registration

Civil registration in different countries

Sample service

Dual report – system

Block – IV Structure, characteristics and distribution of Indian population

Sex and age characteristics Education and religious composition

Population density – concepts and consequences – measuring density

Urbanization and human population - urbanization and migration.

Block – V Population policy and programme in India

Population and health in India

Sociology of health policy in India

- the Kartar singh committee – 1973
- the shrivastava committee – 1975
- health for all by the year 2000 A.D.
- committee on multi purpose workers under health and family planning programmes – 1972 – 73

Population control, family size and quality of life.

Importance of sex education and population education for population control - Family welfare strategies.

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Paper VIII

HUMAN RESOURCE MANAGEMENT (MASO 23)

Block – I Conceptual Introduction

The Concept - Human Resources Management - Personnel Management -Human Resources Development - Human Resource Planning - Scope of Human Resource Management - Importance of Human Resource Management

Block – II Staffing

Recruitment, Selection, Placement, Training, Performance Appraisal, Supervision.

Block – III Job Analysis

Job & Job design, methods of job analysis; job description, job Specification

Block – IV Human Relations

Nature of Human Relations, Its objectives, scope and importance Relevance of the concept of organizational culture, determinants of human relations Relevance of the concept of group, types of personnel relations, role of technology, approaches to humanrelations.

Block – V Workers' participation in Management

Nature of Workers' participation, objectives of workers' participation - Types of participation, Limitations of workers' participation - Evaluation or workers' participation inthe Indians context.

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PAPER IX

MEDICAL SOCIOLOGY (MASO 24)

Block – I : **Medical Sociology – An Introduction:**

The emerging relationship between Medicine and Sociology.The
present status of Medical Sociology.
Contribution of Medical measures.
The development of Social Epidemiology in complex Societies. The basicvariables in epidemiological measures – age. Sex and Social class.
Health and Society – Occupational health. Disease and Social Structure.

Block – II: **The Sick Role:**

Illness as dysfunction.
The functional approach to sick role
The criticism of the sick role
Labelling theory.
Illness as Social deviance.

Block–III: **The Organisation of Health Services :**

The physician in a changing society.
The Socialisation of the Physician.
Nursing and the Para medical practioners.The
Hospital – Doctor – Patient role.

The rising cost of Hospitalisation.
Technology in Medicine Development
Diffusion and health policy.

Block IV :Social Legislation in Health care:

Social Networks and Social Supports in Health care.
Healthcare in developing countries.
Sociological Perspectives on ethical issues in medical and health care.
Quality of Life and Health care interventions.

Block V : Health and Social Problems:

Mental disorders - Theoretical models. Social Epidemiology of Mental Disorders. The Social process of Mental Hospitalization.Aging and life cycle - Social Gerontology.
Theories of aging.
Death and dying – death and the individual.
Death and society – Changing attitudes towards death.

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Paper – X

SOCIAL PSYCHOLOGY (MASO 25)

Block – I : Introduction to Social Psychology:

Nature, Definition and scope of Social Psychology.

Social Psychology and related disciplines – Social Psychology and Sociology,Social Psychology and Personality Psychology, Levels of explanation.

Methods of Social Psychology – Correlational research, Experimental research.

Theoretical foundations – Field theory, Role theory, Cognitive theory, Behavioristic theory.

Block – II : Social Motives and Attitudes:

Social motives – Nature of Social Motives, Types of Social motives – Achievement, Power motivation and need for affiliation.

Attitudes – characteristics of attitudes, Measurement of attitudes, Formation of attitudes, Attitude change.

Block – III : Social Interaction:

Interpersonal attraction, Determinants of interpersonal attraction.

Prosocial behaviour. Personal influences in helping – Genetic factors, Emotional factors, motivational factors, Interpersonal influences – Characteristics of the person in need, The fit between the giver and receivers; Situational influences – models, place of living.

Aggression – Origins and forms of aggression, Prejudice and Intergroup hostility, Control of aggression.

Block – IV : Group Processes:

Groups – Characteristics and functions of groups. Important aspects of group functioning – roles, Norms and cohesiveness.

Leadership – Characteristics of leaders, Functions of leaders, Types ofleadership, Leadership training.

Public Opinion – Meaning, Formation of Public opinion, Methods of measuringpublic opinion.

Propaganda – principles of propaganda, Media of Propaganda.

Block – V: Applying Social Psychology:

Organizational Behaviour – Personnel selection, Motivating employees, performance appraisal, Increasing Productivity.

Health Psychology – Social Psychological aspects of health care, Preventive behaviour in illness, Doctor – Patient interaction.

REFERENCE BOOKS:

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PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.Sc. Information Technology

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.Sc. Information Technology

Introduction :

M.Sc. IT, or Master of Science in Information Technology, is a postgraduate program that focuses on developing the skills and knowledge required to manage and analyze information technology in various industries. The program covers a wide range of topics such as software development, database management, computer networks, cybersecurity, and artificial intelligence.

Students who enroll in an MSc IT program are typically individuals who already have an undergraduate degree in computer science, information technology, or a related field. The program typically takes one to two years to complete, and students are required to complete coursework, research projects, and a dissertation.

The program is designed to equip graduates with the necessary skills to become IT professionals, and prepares them for roles such as systems analyst, database administrator, network administrator, cyber security specialist, and software developer. An MSc IT degree is highly valued in the job market, and graduates can expect to earn competitive salaries in their chosen field.

(i) (a) Programme's Mission: The mission of an MSc IT program is to provide students with a comprehensive understanding of information technology and its applications in various industries. The program aims to equip students with the necessary skills to analyze, design, and develop IT systems that are efficient, effective, and secure.

The program is designed to prepare students for careers in the rapidly evolving field of information technology, where there is a constant demand for professionals who can adapt to new technologies and solve complex problems. The program emphasizes practical, hands-on experience, and encourages students to engage in research and development activities.

In addition, the program aims to develop students' communication and teamwork skills, as these are essential for success in the field of IT. Graduates of the program are expected to be leaders in their field, with the ability to innovate, manage and lead IT projects.

Overall, the mission of an MSc IT program is to produce graduates who are well-rounded IT professionals, capable of contributing to the growth and success of organizations in various industries.

(b) Objectives:

The objectives of an MSc (Master of Science) in IT (Information Technology) program vary depending on the specific program and institution offering it. However, some common objectives of MSc IT programs include:

- Developing advanced knowledge and skills: MSc IT programs aim to provide students with advanced knowledge and skills in areas such as computer networks, database management, programming, artificial intelligence, cybersecurity, and more.
- Preparing for leadership roles: MSc IT programs often prepare students for leadership roles in the IT industry by providing them with the knowledge, skills, and confidence to lead teams and make strategic decisions.
- Promoting innovation: MSc IT programs encourage students to think creatively and innovatively by exposing them to cutting-edge technologies and research.
- Enhancing career prospects: MSc IT programs are designed to enhance students' career prospects by providing them with specialized knowledge and skills that are in high demand in the IT industry.
- Encouraging lifelong learning: MSc IT programs promote a culture of lifelong learning by providing students with the tools and resources they need to stay up-to-date with the latest advancements in the IT industry.

(ii) Relevance of the Programme with HEI's Mission and Goals: The relevance of an M.Sc IT program with an HEI's (Higher Education Institution) mission and goals depends on the specific institution's mission and goals. However, in general, MSc IT programs are highly relevant to many HEI's missions and goals for the following reasons:

Meeting the needs of the IT industry: Many HEIs aim to prepare their graduates to meet the needs of the industries they will work in. MSc IT programs do exactly that by equipping students with advanced knowledge and skills in areas such as computer networks, cybersecurity, and artificial intelligence, which are highly sought after by employers in the IT industry.

Supporting research and innovation: Many HEIs aim to support research and innovation by providing their students with access to cutting-edge technologies and research facilities. MSc IT programs often involve research projects, internships, and other opportunities for students to explore and develop innovative solutions to real-world problems.

Enhancing the institution's reputation: Many HEIs aim to enhance their reputation by offering high-quality academic programs that produce successful graduates. MSc IT programs are highly regarded in the IT industry, and graduates of these programs are often sought after by employers, which can enhance the institution's reputation.

Encouraging lifelong learning: Many HEIs aim to promote a culture of lifelong learning by providing their students with the tools and resources they need to continue learning throughout their careers. MSc IT programs often involve ongoing professional development opportunities and access to industry experts, which can help students stay up-to-date with the latest advancements in the IT industry.

Overall, an MSc IT program can be highly relevant to an HEI's mission and goals, particularly if the institution aims to prepare its graduates for successful careers in the IT industry, support research and innovation, and promote lifelong learning.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an M.Sc. IT (Master of Science in Information Technology) program can vary depending on the specific program and institution offering it. However, in general, the target group of learners for an M.Sc. IT program are individuals who:

- Have an undergraduate degree in computer science, information technology, or a related field: M.Sc. IT programs typically require applicants to have an undergraduate degree in a relevant field. This ensures that students have a solid foundation in IT fundamentals before embarking on more advanced coursework.
- Are interested in advancing their knowledge and skills in IT: M.Sc. IT programs are designed for individuals who want to deepen their understanding of IT concepts, technologies, and applications. Prospective students may be interested in pursuing careers in areas such as software development, network administration, cybersecurity, or data analytics.
- Are motivated and self-directed learners: M.Sc. IT programs require a high level of self-direction and motivation, as students must complete complex coursework, research projects, and other assignments with minimal supervision.
- Have strong analytical and problem-solving skills: M.Sc. IT programs involve complex problem-solving and require students to think critically and analytically. Prospective students should have strong analytical and problem-solving skills to succeed in the program.
- Are interested in pursuing leadership roles in the IT industry: M.Sc. IT programs often prepare students for leadership roles in the IT industry by providing them with the knowledge, skills, and confidence to lead teams and make strategic decisions. Prospective students who are interested in pursuing leadership roles in the IT industry may find an M.Sc. IT program particularly appealing.

Overall, the target group of learners for an M.Sc. IT program is typically composed of motivated, self-directed learners with a strong foundation in IT fundamentals who are interested in advancing their knowledge and skills in IT and pursuing careers in the field.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The M.Sc. Information Technology program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence. Here are some reasons why:

- Flexibility: The ODL mode provides flexibility in terms of time, pace, and place of learning, which is especially important for learners who are already working or have other commitments. This mode allows learners to design their own study schedules and access course materials at their convenience, which can help them to balance their work, family, and educational commitments.
- Access to learning resources: ODL mode can provide access to a wide range of learning resources, including digital textbooks, audio and video lectures, interactive simulations, and virtual laboratories. This mode allows learners to access these resources from anywhere, which can help them to deepen their understanding of key concepts and develop specific skills and competencies.
- Personalized learning: ODL mode can provide personalized learning experiences to learners by using adaptive learning technologies, providing individual feedback, and offering personalized tutoring. This mode can help learners to focus on their specific needs and interests and acquire the skills and competence they need to succeed in their chosen field.
- Cost-effective: ODL mode can be a cost-effective option for learners who are unable to attend traditional, on-campus programs. This mode can reduce the cost of tuition, accommodation, and transportation, making it more accessible to learners from diverse socioeconomic backgrounds.
- Practical components: Although some practical components of the M.Sc. Information Technology program may require access to laboratory equipment, there are still many theoretical components of the program that can be delivered effectively through the ODL mode. Furthermore, some universities offer online laboratories and simulations that can be used to supplement or replace the practical components of the program.

Overall, the M.Sc. Information Technology program can be appropriately conducted in the ODL mode, providing learners with the opportunity to acquire specific skills and competence in a flexible, accessible, personalized, and cost-effective manner.

(v) Instructional Design: The M.Sc. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

Subject Code	Subject Title	Type of Course	Credits	CIA	Ext.	Total Marks
MIT 101	Introduction to Information Technology	C	4	40	60	100
MIT 102	Introduction to Programming Language through C (C)	C	4	40	60	100
MIT 103	Operating Systems and System Software (OS)	C	4	40	60	100
MIT 104	Data Structures and Algorithms	C	4	40	60	100
MIT 105	Basic Electronics and Communication (E&C)	C	4	40	60	100
MIT 106	Lab 1 (based on C, OS and E&C)	C	4	40	60	100
SS	Soft Skill Elective	SS	4	40	60	100

Second Semester

MIT 201	Computer Organization & Architecture	C	4	40	60	100
MIT 202	Data Base Management System (DBMS)	C	4	40	60	100
MIT 203	Object Oriented Programming Structures (OOPS)	C	4	40	60	100
MIT 204	Data Communication and Computer Networks	C	4	40	60	100
MIT 205	Lab 2 (based on DBMS)	C	4	40	60	100
MIT 206	Lab 3 (based on OOPS)	C	4	40	60	100
SO	Social Orientation Elective	SO	4	40	60	100

Third Semester

MIT 301	Software Engineering	C	4	40	60	100
MIT 302	Formal Languages and Automata Theory	C	4	40	60	100
MIT 303	Introduction to Java	C	4	40	60	100
MIT 304	Visual Language Programming	C	4	40	60	100
Elective	Elective Course- I	E	4	40	60	100
MIT 306	Lab 4 (based on Java)	C	4	40	60	100
MIT 307	Lab 5 (based on Visual Programming)	C	4	40	60	100

Fourth Semester

MIT 401	Computer Graphics	C	4	40	60	100
Elective	Elective Course– II	E	4	40	60	100
MIT 403	Lab 6 (based on Computer Graphics)	C	4	40	60	100

MIT 404	Industrial Training	C	4	40	60	100
MIT 405	Project	C	12	120	180	300

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.Sc. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.Sc. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: B.Sc. with Information Technology

Fee Structure: M.Sc. Previous & M.Sc. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.

- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has nodisciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility

for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.Sc. Information Technology	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms are important in ensuring that MSc IT programs meet the desired standards and deliver the expected outcomes. The following are some of the quality assurance mechanisms that can be put in place for an MSc IT program:

- Curriculum design and review: The curriculum of an MSc IT program should be designed to meet the needs of the industry and reflect the latest developments and trends in the field. Regular reviews should be conducted to ensure that the curriculum remains relevant and up-to-date.
- Faculty qualifications and training: Faculty members should have the necessary qualifications and experience to teach the courses in the program. They should also receive regular training to enhance their teaching skills and keep up with the latest developments in the field.
- Student assessment: A variety of assessment methods should be used to evaluate student learning and mastery of the course material. These assessments should be aligned with the program's learning outcomes.
- Student support: Adequate support should be provided to students, including academic advising, mentoring, and counseling services. The program should also provide access to resources such as a library, online databases, and study materials.
- Continuous improvement: The program should have a process in place for continuous improvement, which involves gathering feedback from students, alumni, and employers to identify areas of strength and weakness and make necessary adjustments.

The expected program outcomes of an MSc IT program may include the following:

- Advanced knowledge and skills in IT: Graduates of an MSc IT program should have advanced knowledge and skills in areas such as software development, network administration, cyber security, and data analytics.
- Critical thinking and problem-solving skills: Graduates should be able to apply critical thinking and problem-solving skills to analyze complex IT problems and develop effective solutions.
- Effective communication skills: Graduates should be able to communicate effectively with both technical and non-technical stakeholders, including colleagues, clients, and managers.
- Leadership and teamwork skills: Graduates should be able to work effectively in teams and demonstrate leadership skills in managing projects and teams.
- Ethical and professional conduct: Graduates should be aware of ethical and professional standards in the IT industry and demonstrate ethical and professional conduct in their work.

Overall, an MSc IT program should aim to produce graduates who are well-prepared for careers in the IT industry and can make significant contributions to the field. Quality assurance mechanisms can help ensure that the program meets these goals and delivers the expected outcomes.

Detailed Syllabus

MIT-101 Introduction to Information Technology

Unit-I

Introduction to computers: Computer system concepts, characteristics of computer, generations and types of computer, components of computer system, Booting process , classification of digital computer system, organization of computers. Input and Output devices, Storage devices.

Unit-II

Computer software : System software, application software, firmware , Programming languages classification: machine language, assembly language & high-level language. Evolution of programming languages: first generation, second generation, third generation & fourth generation languages, Language translator: Compiler, Interpreter, Assembler. Operating System - Definition, Job, Objective and evolution of operating system, Types of operating systems.

Unit-III

Network Communication : Definition, Criteria, advantages and limitations of computer networking, Communication process, Communication types, Types of computer network ,Network topology, LAN and other network related protocols, OSI model, TCP/IP model, Networking Components.

Unit –IV

Network Applications- Internet: Introduction, Internet basic, Internet protocols, Internet addressing, Browser WWW, E-mail, telnet, ftp, application, benefits and limitation of internet, electronic conferencing, and teleconferencing.

Unit-V

Latest IT Trends:-e-Commerce, M-Commerce, Artificial Intelligence, Computational Intelligence, Geographic Information System (GIS), Data Mining . Role of IT in different Area - Education, Industry, Banking, Marketing, Public Services and others.

References:

1. Computer fundamentals: By V. Rajaraman ; PHI
2. Fundamentals of IT: Leon and Leon; Leon Tec World
3. Fundamentals of Information Technology, Alexis Lean and Mathews Leon, Vikas Publication House, Delhi
4. Information Technology - inside and outside, Cyganski, Pearson Publication
5. Introduction to computer Science, ITL ESL, Pearson Education

MIT-102 Introduction to Programming Language through 'C'

Unit-I

Basic Programming Concepts: Introduction to the basic ideas of problem solving and programming using principles of top-down modular design, Flowcharts, Compilation of a Program with examples

Unit-II

Introduction to Programming Language C: Data Types, Instruction and its Types, Storage Classes, Operators and Hierarchy of Operations, Expressions in C, Control and Repetitive Statements, break, continue, Arrays, Strings,

Unit-III

Functions: User Defined Functions and Library Functions, Local and Global Variables, Parameter Passing, Pointers, C Preprocessors, Structures, Union,

Unit- IV

Input and Output in C, C-Library, File: Introduction, Streams and File types, file Operations, File I/O, Low level Disk I/O, Command line Arguments, and Software Interrupts.

Unit V

Graphics Library: initgraph function, clrscr( ), Pixel Drawing, line( ), circle( ), rectangle(), closegraph(), setcolor(), setlinestyle(), setfillstyle(), floodfill(), sound and motion.

References:

1. Y. Kanetkar, Let us C, BPB Publications.
2. Programming in ANSI C by E Balaguruswami, Tata McGraw Hill
3. Schaum's Outline of Theory and Problems of programming with C, B.S.Gottfried, McGraw-Hill.
4. C Made Easy, H.Schildt, Osborne McGraw-Hill.
5. A Structured Programming Approach Using C, Behrouz A Forouzan, Cengage Learning

MIT-103 Operating Systems and System Software

Unit-I

Introduction: Definition, Design Goals, Evolution; Concept of User, job and Resources; Batch processing, Multi-programming, Time sharing; Structure and Functions of Operating System. Process Management: Process states, State Transitions, Process Control block, Context Switching, Process Scheduling, Scheduling algorithm, Threads.

Unit-II

Inter process synchronization and communication: need, Mutual exclusion, semaphore and hardware support for mutual exclusion, queuing implementation, and classical problem in concurrent programming, critical region and conditional critical region, Monitors, Messages, Deadlock

Unit-III

Management (Contiguous and non contiguous) : Address Binding, Dynamic Loading and Linking Concepts, Logical and Physical Addresses, Contiguous Allocation, Fragmentation, Paging, Segmentation, Virtual Memory, Demand Paging, Page fault, Page replacement algorithms, Global Vs Local Allocation, Thrashing, Working Set Model, Paging.

Unit- IV

File : File Attributes, File Types, File Access Methods, Directory Structure, File System Organization and Mounting, Allocation Methods, Free Space management; Secondary.

Unit-V

Storage Management: Disk Structure, Logical and Physical View, Disk Head Scheduling, Formatting, Swap Management. Protection & Security. System Software: Definition, their types, Loader, linker, editor, Assembler, Compiler, Interpreter.

References:

1. Silberschatz and Galvin, Operating System Concepts, Addison Wesley6/ed.
2. Modern operating Systems, A S Tanenbaum, , PHI.
3. Operating System Concepts, Peterson and Silberschatz, , Addison Wesley.
4. Operating Systems: Internals and Design Principles , William Stalling, PHI.
5. System Software ,Dhamdhare, , TMH.

MIT- 104: Data Structures and Algorithms

Unit I

Basics: Basic terminologies; introduction to basic data Structures: Arrays, linked list, trees, stack, queue, Graph; Data structure operations; Algorithm complexity: definition, types and notations .

Unit II

Stacks, Queues and Recursion: Stacks; Array representation of stack; Linked representation of stack; Various polish notation's-Prefix, Postfix, infix; Evaluation of a postfix & Prefix expression; Conversion from one another; Application of stack; Recursion; Towers of Hanoi; Implementation of recursive procedures by stacks; Queues; Linked representation of queues; Dequeues; Circular queue; Priority queue; Singly Linked list- Operation on it; Doubly linked list- Operation on it; Circular linked list.

Unit III

Trees: Binary trees; Representation of binary tree in memory; Traversing binary tree; Traversing using stack; Header nodes; Binary search trees; Searching and inserting in binary search trees; Deleting in a binary search tree; AVL search trees; Insertion and deletion in binary search trees; m-way search trees: searching, insertion, deletion;
B trees: searching, insertion, deletion; Heap.

Unit IV

Algorithm Design techniques: Divide and Conquer, Greedy, Dynamic programming, back Tracking. Searching algorithm: linear search, binary search; Sorting algorithms: Bubble sort, Insertion sort, Selection sort, Quick Sort, Merge sort and Heap sort, Hashing, Hash function.

Unit- V

Graphs: Terminology & representation; Linked representation of graph; Operation on graph; Traversing a graph. Depth First Search, BFS, Warshall algorithm, Dijkstara algorithm,

Minimum spanning tree; Kruskal & Prim's algorithm,

References:

1. Data Structure , Lipschutz , Mc Graw Hill.
2. Data Structures with C++", John R. Hubbard, Schaum's Outline, Tata McGraw
3. Hill.
4. Data Structure using C, AM Tanenbaum, Y Langsam and MJ Augenstein, Prentice-Hall, India
5. Data structures, Algorithms, and Applications in Java", Sahani, McGraw Hill

MIT-105: Basic Electronics and Communication

Unit I Analogue Electronics

Basic components and Circuits: R, C and L, Current and Voltage, AC and DC Fundamentals. PN junction and diode action, Rectifier: Half wave and Full wave rectifier, Uses in Power Supplies, Basics of Regulated and Switched Mode Power Supply (SMPS). Transistors: Brief introduction and applications in Amplifiers, Feed Back Amplifier, Oscillators and Operational Amplifier. Basics of Linear Integrated Circuits, Construction and working of Cathode Ray oscilloscope (CRO).

Unit II Digital Electronics – I

Number System, Conversion from one number system to another, Binary arithmetic and codes, Representation of Floating point, 1's, 2's complement and signed binary numbers. Logic gates, Boolean algebra and logic design, Karnaugh map method of simplification of logic expressions, Flip-Flops, Latches, Registers, Shift registers, Buffers and Drivers.

Unit III Digital Electronic II

Arithmetic circuits: Half-adder, Full- Adder, n-bit adder, subtraction, Multiplication of binary number, Encoders, Decoders, Code converters, Multiplexer, De-Multiplexers, Counters analogue to digital and digital to analogue converter (ADC and DAC)

Unit IV Electronic Communication

Brief description of elements of Communication Systems: Transmitter, Receiver, Communication Channel, Noise and Signals, Modems . Basic principles of Analogue and Digital Communication, Modulation techniques and types with brief introduction to Amplitude Frequency and Phase modulation, Amplitude, Frequency and Phase Shift Keying. Pulse code modulation. Concept of bandwidth, basics of microwave communication.

Unit V Selected Advanced topics

Topics like very large scale integration (VLSI) circuits, optical fibre communication, communication satellites, very small aperture terminal (V-Sat) and cellular communication .

References:

1. Principles of Linear Electronics ,A P Malvino , TMH Publishing Company
2. Electronics made simple , Henery Jacobowitz – Vakils, Feffer and Simons Pvt Ltd Bombay

3. Digital Principle and Applications , A.P. Malvino and Leech , TMH Publishing Co
4. Digital logic and Computer Design , M.Morris Mano , Pearson Education
5. Electronic communication systems , Wayne Tomasi , Pearson Education
6. Analogue communication A P Godse and U A Bakshi –,Technical publications Pune
7. Digital Communication , Harold Kolimbiris , Pearson Publications.

MIT-201: Computer Organization and Architecture

Unit- I

Register transfer language, Bus and memory transfer, Arithmetic, micro operation, Logic micro operation, Shift micro operation, Arithmetic logic shift unit

Unit- II

Instruction codes, Computer registers, Computer instructions, Timing and control, Instruction cycle, Memory reference instruction, I/O and interrupt, Design of basic computer and Accumulator logic.

Unit- III

Machine language, assembly language, Assembler programming, arithmetic and logic operation, I/O programming. Micro programmed and hardwired control unit, General register organization of C.P.U, Stack organization, Instruction format, Addressing modes, Program control, RISC v/s CISC.

Unit- IV

Parallel processing, Pipelining, Arithmetic pipelining, Instruction pipeline, RISC pipeline, Vector processing, Memory interleaving, Array processor, multiprocessor.

Unit- V

Peripheral devices, I/O interfaces, Asynchronous Data transfer DMA, Priority Interrupt, I/O processor, Multiprocessor system organization and Data communication processor. Auxiliary memory, Microcomputer, memory, Memory hierarchy, Associative memory, Virtual memory, Cache memory, Memory management hardware.

References:

1. Morris Mano “computer System Architecture”,
2. Computer Organization & Architecture, W. Stallings, “, PHI.
3. Computer Architecture and Organization, J. P. Hayes, McGraw Hill,
4. Computer Architecture, A Quantitative Approach, John L. Hennessy & David A. Patterson,”,Morgan Kaufmann, .
5. Modern Computer Architecture ,Rafiquzamman and Chandra,”. Galgotia Publication.

MIT-202: Data Base Management System.

Unit- I

Overview of Database Management : Data processing versus data management , File oriented

approach versus verses database oriented approach to data management ,Data independence , Database administration, DBMS architecture, Importance of data dictionary ,Contents of data dictionary, Data Models, Object oriented database

Unit-II

Design Theory for Relational Database: E-R Model, Concept of Keys, Normalization, Functional Dependencies, Decomposition of Relation schemes, Normal Forms for Relations, Multivalued and other kinds of Dependencies.

UNIT-III

Query Optimization: Relational algebra Queries , SQL Queries ,Basic Optimization Strategies, Algebraic Manipulation, Optimization of Selections in System, Exact Optimization for a Subset of Relational Queries, Optimization under Weak Equivalence.

Unit-IV

Database Protection: Protecting the database- Integrity, Security and recovery Security in query-by-Example, Domain constraints, Referential integrity, Assertion, Triggers, Security and authorization in SQL. Concurrent Operations on the Database: Basic Concepts, A simple Transaction Model, Model with Read and Write-Locks, Read-only, Write-only Model, Concurrency for Hierarchically Structured Items, Protection against Crashes, Optimistic Concurrency Control.

UNIT-V

Principles of Distributed Data Bases: Framework for distribution. Translation of global queries into fragment queries. Query optimization and management of distributed transaction. Concurrency control and reliability in distributed databases. Administration of Distributed Data Bases.

References:

1. An Introduction to Data base Systems , C J Dates, / Kannan, Pearson Education.
2. Database system concepts By H.Korth and A. Silberschatz ,TMH Publication
3. Data Base Systems , J.D.Ullman, Galgotia, New Delhi.
4. Distributed Databases ,S.Ceri and G. Relagatti, McGraw-Hill.
5. The Theory of Database concurrency Control C.Papadimitriou , , Computer Science Press.

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MIT-203: Object Oriented Programming Structures

Unit-I

Principal of OOP ,Procedure oriented Vs Object oriented, OOP paradigm, Features of OOP , Basic Data types Tokens, Keywords, Constant ,Variables, Operator I/O statements , Structure of C++ program, Arrays, pointers, Object modelling technique (OMT)

UNIT-II

Function, Object and Class, Defining class, Abstract class ,Function prototype, Function with parameter ,Passing object as a parameter, Constructor function ,Types of constructor, Destructor Friend function , Friend class, Dynamic allocation operator new and delete.

UNIT-III

Polymorphism and Inheritance ,Types of polymorphism, Constructor overloading ,Operator overloading, Template function Template class, Types of inheritance ,Private ,protected and public derivation of class ,Resolving ambiguity Pointer to object, This pointer ,Virtual class , virtual function

UNIT-IV

Input - output and File handling I/O classes ,File and stream classes ,Opening and closing file Detecting end of file, String I/O**,** Char I/O, Object I/O, I/O with multiple object ,File pointer, Disk I/O**.**

UNIT-V

Exception handling, Name spaces and Standard Template library (STL), Need of Exception handling, try, catch and throws keywords, defining namespace, benefit of namespace, Component of STL.

References:

1. Object Oriented Programming with C++ programming ,E.Balaguruswamy,Mc Graw Hill .
2. C++ Complete reference. By Herbert Schildt, Mc Graw Hill
3. Principles and Practices using C++ , Bjarne Stroustrup, Addison Wesley
4. Mastering C++ b, Venugopal , Mc Graw Hill
5. Object Oriented Programming in C++ , Robert Lafore, Galgotia Pub.

MIT-204: Data Communication and Computer Networks

Unit-I

Introduction: Goal and application Network Hardware and Software , Protocol hierarchies, Design Issue of the layers, Interfaces and services, Connection oriented and connection less services, Service Primitives, Reference Models – The OSI Reference model, The TCP/IP Reference Model ,Types of computer Network :LAN,MAN,WAN, Topologies, Transmission mode .Physical Layer: Transmission Media ,Concept of data transmission ,Switching Techniques ,Communication Satellites – Geosynchronous Satellite – VSAT, Low Orbit Satellites, ISDN and ATM. Digital Modulation and Demodulation Techniques

Unit-II

Data Link Layer: Data Link Layer design issues, Framing, Flow control, Error Detection and Correction DLL Protocol: Stop and Wait Protocol, Sliding window protocol, A Simplex

protocol for noisy channel, Medium access sublayer: Channel allocation –static and dynamic ,Multiple access protocol FDDI, Data Link Layer in the Internet – SLIP,PPP.

Unit-III

Network Layer: The Network Layer Design Issue, comparison of virtual circuits and datagram subnets, connectionless internetworking, Tunnelling, Internetwork routing, Routing algorithm , Fragmentation, The Network Layer in the Internet – The IP Protocol, IP Address, subnets, Internet control protocols, internet multicasting.

Unit-IV

Transport Layer: The Transport layer services, The concept of client and server in terms of socket addressing Quality, of service, Transport service primitives and buffering, Multiplexing, Crash Recovery. The Internet Transport Protocols (TCP/IP) – The TCP Service Model, The TCP protocol, The TCP segment header, TCP connection management, TCP transmission policy, TCP congestion control, TCP timer management, UDP.

Unit-V

Presentation and Application Layer: Network Security – Traditional Cryptography, Two fundamental Cryptographic Principles, Secret Key Algorithms Public key Algorithms, Authentication protocols, DNS,E-mail.

References:

1. Computer Networks ,A.S. Tanenbaum, Pearson Education
2. Data Communications and Networking ,Forouzan, Tata McGraw Hill Company
3. Computer Network , S.S.Shinde ,New Age International Publisher.
4. Data and computer Communication , Shashi banzal ,Firewall media
5. Data & Computer communication, William Stallings, Pearson

MIT- 301: Software Engineering

Unit-I

Software Engineering Fundamentals: Software Engineering, Software Product: Software development paradigms, software Characteristics and Application. Software Development life cycle, water fall model, Prototyping, Incremental & Spiral model, 4th Generation Techniques. Project Management: Concepts, Software Process and Project Metrics; Software Measurements; Software Projects Planning: Objectives, Scope and Resources. Empirical Estimation Models: COCOMO Model, Software Equation, Project Scheduling and Tracking.

Unit-II

Software Requirement System(SRS) and Analysis: System Engineering, Product Engineering: Characteristics of a Good SRS, Requirement analysis, Principal, Software prototyping. Analysis modelling: data modelling, mechanics for structured analysis, system analysis tools and techniques, DFD, ER- Diagrams. Data Dictionary (DD), System Design: Design concept and principles and its elements, effective modular design, Cohesion & Coupling, Feature of modern graphics interface (GUI). Design Methods: data design, interface design guidelines, procedural design.

Unit-III

Software Quality Assurance(SQA): Quality and factors, Quality Assurance, Software Quality Metrics, Process and Product Quality, Capability Maturity Model (CMM). Software Quality Assurance(SQA), Need for SQA, SQA Activities, Building blocks of SQA, SQA Planning & Standards, Software Reliability, Reliability Measures. Introduction to Software Testing: Need of software(s/w) testing, Error, fault and failure. s/w Testing fundamentals, Testing objectives, test information flows, Testing lifecycle, Test Cases.

Unit-IV

Levels of Testing**:** Unit Testing, Integration Testing, System Testing, Acceptance Testing, Alpha testing & Beta testing, Static vs. Dynamic testing, Manual vs. Automatic testing, Different types of Testing: Installation Testing, Usability testing, Regression testing, Performance testing, Load testing, stress testing, Security testing, Static & Dynamic testing, Static testing techniques, Review types : Informal Review, Technical or peer review, Walkthrough, Inspection, static analysis, Review meeting and reporting , Review guidelines & Review checklist, Data flow analysis, Control flow analysis, Cyclometric Analysis, Dynamic testing – need & Advantages

Unit-V

Black Box & White Box Testing (Test Case Design Techniques):Functional Testing (Black Box), Equivalence partitioning, BVA, Decision table based testing, Cause-Effect graphing, Syntax testing (Concept & Test case generation only), Structural Testing (White Box), Coverage testing, Statement coverage, Branch & decision coverage, Path coverage, Validation testing Activities, Low level testing, High level testing, Black box Vs. White Box

References:

1. Software Engineering – A Practitioners Approach Roger S. Pressman, Mcgraw Hill, International Education.
2. An Integrated Approach To software Engineering, Pankaj Jolote, ,Narosa
3. Software Engineering – A Programming Approach, D. Belie I. Moray, J. Rough, PHI.
4. Software Testing Techniques, Barrios Bier, Van N Ostrand Reinhold.
5. Software Engineering Concepts-Richard Fairley, CDAC. Tata McGraw-Hill Series.

MIT 302 Formal Languages and Automata Theory

Unit- I

Introduction to theory of computation: Significance of theoretical computer science, Mathematical model of computer and programming languages, Automata, historical aspect of automata, application of Automata theory. Mathematical preliminaries & Notation: Sets, Cartesian product (cross product of two sets), various operations on sets, Relation and Functions, Graphs and Trees.

Unit- II

Basics of Languages: Informal & formal definitions. Alphabets, Strings, Languages, Grammar, automata and other related definitions, various operation on languages: - union,

concatenation, negation, reverse, star closure, Positive closure properties. Grammar: Informal and formal definitions. Illustrations for generating grammar for various languages

Unit- III

Finite Automata: Components of Automata, types of Automata, Deterministic Automata, Non- Deterministic Automata, Representation of Finite Automata, Deterministic Finite Automata (DFA), Representation of Deterministic Finite Automata using Transition Graphs, Transition diagraphs, Transition Tables, Languages generated by Deterministic Automata.

Unit- IV

Regular Languages: Definition of Regular Languages, Application of Finite Automata, Non-Deterministic Finite Automata (NFA): Definition of Non- Deterministic Automata, Properties of Transitive function, λ-NFA, Conversion of NFA to DFA. Finite Automata with λ-transition, λ-Closure, λ-NFA. Regular Expression : Formal Definition of Regular Expression, Languages Associated with Regular Language. Relationship between Regular Expression and Regular Language. Conversion of Regular Expression to λ-NFA, Conversion of Finite Automata (DFA or NFA) to Regular Expression (Kleen'stheorm).

Unit- V

Types of grammars, Classification of Chomsky Hierarchy, Phase structured grammars, context free grammar, context sensitive grimmer, regular grammar. Pushdown Automata: Definition and Representation of Pushdown automata, Non Deterministic Pushdown automata, operations on Pushdown automata. Turing machine: Basic Model, definition and representation of Turing Machine. Application of Turing Machine.

References:

1. Introduction to Automata Theory, Languages and Computation, J. E. Hopcroft and J. D.Ullman and Rajeev Motwani: Pearson Education Asia
2. Elements of the Theory of Computation, H. R. Lewis and C. H. Papadimitriou: Pearsoneducation asia.
3. Introduction to languages and the Theory of Computation , J. C. Martin, Tata Mc-Graw Hill
4. Introduction Formal Languages and Automata , Peter Linz, Narosa,.
5. Theory of Computer Science: Automata, Language and Computation, M. Chandrasekaran,and K.L.P. Mishra: Prentice Hall of India .

MIT-303 Introduction to JAVA

Unit-I

Overview of JAVA: The genesis of java, An overview of java, java virtual machine (JVM) ,Java development kit(JDK) ,Java Vs C++, Data types, Literals, Variables, and Arrays, Operators, Control statements, Introducing Class, closer look at Methods and class ,Nested and inner class , String handling ,Constructor ,Garbage collection and finalize() method.

Unit-II

Inheritance, Packages and interface-Types of inheritance ,Access specifiers class inheritance, using super, method overriding ,Abstract class ,constructor in multilevel inheritance ,using

final with inheritance ,Dynamic method dispatch, Defining package, CLASSPATH, Access protection ,Importing package ,Defining and implementing interface, Extending interface, Nested interface.

Unit-III

Exception handling and Using try and catch ,multiple catch classes, Nested try statements , throw throws and finally ,Built in exception ,Uncaught exception , Creating own exception class . Multithreading: Java Thread Model – Main thread, Creating own Thread, Life cycle of thread, Thread priorities ,Synchronization and messaging , communication ,Suspending ,Resuming and stopping thread.

Unit-IV

Input Output: Byte stream and character stream, Predefined stream, reading console input, writing console output, Print Writer class, Reading and writing files

Unit- V

Applet , AWT and Event handling – Applet life cycle, Creating an applet, Using image and sound in applet ,passing parameter. AWT- Overview of java.awt package, Component and Containers, control component and layout manager Event handling –The delegation-event model, Event classes, Source of event, Event listener interfaces, handling mouse and keyboard event, Adapter class.

References:

1. Java: The complete reference, Naughton P and schildt H., TMH Publication.
2. Simply JAVA :An Introduction to JAVA programming , James R. Levenick ,Firewall Media Publication New,Delhi
3. Java Programming, Balguruswami , Mc Graw Hill.
4. Core JAVA for beginners ,RashmiKantaDas ,Vikas Publication.
5. Core Java , Horstmen, Pearson.

MIT 304 Visual Language Programming

Unit I

Introduction to .Net Framework, Pre Microsoft.Net days, Microsoft.net, .Net Architecture and framework, VB.Net as Programming language.

Unit II

VB.Net Language Fundamentals, Data Types, constant and variable declarations, Operators, Built in methods ,Decision structures, Loops, Arrays manipulation in VB.Net, MDI and SDI, Dynamic Programming in VB.Net , Using Modules and Procedures .

Unit III

Menu and Dialog controls in VB.Net, Menu bar implementation In VB.Net, OpenFileDialog, SaveFiledialog, Colordialog, Font Dialog, Input and Output Using Stream Reader and stream Writer.

Unit IV

Common Controls and Application Development in VB.Net, Performing File input / output operations, implementing Multi threading, Exception Handling.

Unit V

Data Access with ADO.Net: Database Access Using Wizard, Database Access Using Code, On-Line Connection, Off-Line connection, Understanding the role of Dataset, Data Adapter, Datareader, NonExecutequery, Execute scalar, Minor Project development.

References:

1. Beginning VB .Net , Richard Blair, Matthew Reynolds, Jonathan Crossland, Wrox Publications.
2. Applied Microsoft .Net Frame Work Programming, Jeffrey Richter, Microsoft Press.
3. Microsoft.Net for Programmers, Fergal Grimes, Microsoft Press.
4. Understanding the .Net Frame work, TonyBaer, Kent Tegels, Wrox Publications.
5. Visual Basic. Net Programming , Steven Holzner. Paraglyph press

MIT 401 Computer Graphics

Unit -I

Overview of Graphics Systems: Video Display Devices , Refresh cathode ray tubes, Refresh scan displays, Random scan displays, color CRT Monitors, DVST, Flat- Panel displays, Three Dimensional viewing devices, Raster scan systems, Input Devices: Keyboards, Mouse, Track ball, Joysticks, Data Glove, Touch Panels, Light pens.

UNIT –II

Curves and Surfaces:Line Drawing Algorithm, DDA Algorithm, Bresenham's Line Drawing Algorithm, Bresenham's Circle Drawing Algorithm, Ellipse Drawing Algorithm, Pixel Addressing and object geometry: Screen Grid coordinates, Maintaning Goemetry properties of Displayed objects.

UNIT –III

Geometric Transformation:Homogeneous Coordinate System for 2D and 3D, Various 2D, 3D Transformation matrices (Translation, Scaling, Rotation, Shear), Rotation about an arbitrary point (2D), Rotation about an arbitrary axis (3D), Computing location of V.P, Clipping Algorithms, Sutherland-Cohen Clipping Algorithm.

UNIT-IV

Curves and Visible Surface Detection Methods: Bezier Curves, 4 point and 5 point Bezier curves using Bernstein Polynomials, B-Spline Curves, Computing control points given end slopes for a specified curve segment. Back Face Detection, Depth Buffer (Z-Buffer, A-Buffer) Method, Scan Line Method, Depth Sorting Method, Area Subdivision Method.

UNIT –V

Illumination Model and Surface Rendering: Basic Illumination models, shading models for curve surfaces, Half tone Pattern and Dithering Techniques, Rendering, Color Models: XYZ Color Model, RGB, YIQ, CMY, HSV, HLS.

References:

1. Computer Graphics, D. Hearn and P. Baker, Prentice Hall.
2. Computer Graphics, R. Plastock and Z.Xiang, Schaum's Series, McGraw Hill.
3. Computer Graphics Principles & Practice, Foley et. al., Addison Wesley.
4. Procedural Elements for Computer Graphics, David F. Rogers, McGraw Hill.
5. Principles of Interactive Computer Graphics, W. Newman and R. Sproul, McGraw-Hill.

Electives

Web Design and Development

UNIT-I:

Basic web designing: Introduction to web browser, architecture of web browser, web page, static & dynamic web pages, home page, web-site. Web-servers & clients. www. Introduction to HTML: History, structure of HTML document, creating & executing HTML. Tags of HTML. Tables and Frames:Creating Table with <TABLE> tag,.spanning cells with rowspan, colspan attributes. <FRAMESET>&<FRAME> tag, it's attributes, using nested <frameset>tag, Inline frame.

UNIT II

Forms and CSS:Understanding Form, <FORM> tag, creating text boxes, buttons, checkboxes, radio buttons, hidden control, password, lists & dropdown list,textarea. Submitting a form, get & post method. Creating CSS, applying CSS toHTML documents. Use of <META> Tag. Event Handling & Form Validation: onClick, onChange, onLoad, onSelect, onSubmit, onMouseOver, onFocus, onBlur, Validation of text box entries, checkboxes, radio buttons, e-mail address validation, date validation.

UNIT III

C#.NET : Features, Data Types ,Variables, Arrays, Namespaces, Enumeration, Operators, Control flow structures, Arrays manipulation in C#.Net, MDI and SDI, Dynamic programming in C#.Net, Using Modules and Procedures ,Object Oriented Concepts & features, Class, Object, Data Binding

UNIT-IV

Creating WEB Application: ASP.NET Tools, Advanced Tools & Features, User Interface, Creating Master Pages, Creating Web Pages, User Controls, Data Binding Controls, Query String, and Session State.

UNIT-V:

Data Access with ADO.Net: Database Access Using Wizard, Database Access Using Code, On-Line Connection, Off-Line connection, Understanding the role of Dataset, Data Adapter, Datareader, NonExecutequery, Execute scalar, creating connections , connecting to SQL server , connection to MS-Access, closing an open connection, Executing SQL statements with connection object –creating, inserting, updating, deleting database table.

References:

1. HTML 4.0, E. Stephen Mac, J. Platt, bpb
2. Completer Reference HTML - Thomas A. Powell ,TMH
3. Applied Microsoft .Net Frame Work Programming, Jeffrey Richter, Microsoft Press.
4. Microsoft.Net for Programmers, Fergal Grimes, Microsoft Press.
5. Teach yourself ASP programming in 21 days – Fleet, Warret, Hen Stojanovic , Techmedia.

Artificial Intelligence

Unit-I

Introduction, AI problems, foundation of AI and history of AI intelligent agents: Agents and Environments, the concept of rationality, the nature of environments, structure of agents, problem solving agents, and problem formulation.

Unit-II

Searching for solutions, uniformed search strategies – Breadth first search, depth first search, Depth limited search, Iterative-deepening depth first search bi-direction search - comparison. Search with partial information (Heuristic search) Greedy best first search, A* search, Memory bounded heuristic search, Heuristic functions. Local search Algorithms: Hill climbing, simulated, annealing search, local beam search, genetical algorithms. Constrain satisfaction problems: Backtracking search for CSPs local search for constraint satisfaction problems.

Unit-III

Game Playing: Adversial search, Games, minimax, algorithm, optimal decisions in multiplayer games, Alpha-Beta pruning, Evaluation functions, cutting of search., Knowledge representation Reasoning and Agents :knowledge – Based Agents, the Wumpus world, logic, propositional logic, Resolution patterns in propos ional logic, Resolution, Forward & Backward. Chaining. First order logic. Inference in first order logic, propositional Vs. first order inference, unification & lifts forward chaining, Backward chaining, Resolution.

Unit-IV

Planning: Classical planning problem, Language of planning problems, Expressiveness and extension, planning with state – space search, Forward states spare search, Backward states space search, Heuristics for stats space search. Planning search, planning with state space search, partial order planning Graphs.

Unit-V

Learning :Forms of learning, Induction learning, Learning Decision Tree, Statistical learning methods, learning with complex data, learning with Hidden variables – The EM Algorithm, Instance Based learning, Neural Networks.

Refrences :

1. Introduction to Artificial Intelligence – Rajendra Akerkar, PHI.
2. Artificial Intelligence – A Modern Approach. Second Edition, Stuart Russel, Peter Norvig, PHI/Pearson Education.
3. Artificial Intelligence, 3rd Edition, Patrick Henry Winston., Pearson Edition,
4. Artificial Intelligence and Expert Systems – Patterson PHI
5. Expert Systems: Principles and Programming- Fourth Edn, Giarrantana/ Riley, Thomson

Network Security

UNIT-I:

Introduction, Security Concepts, Threats and Risks, Attacks – Passive andActive, Security Services, Confidentiality, Authentication, Non-Repudiation,Integrity, Access Control, Availability.

UNIT-II:

Access Control Models, Bell-LaPadula, Non- Interference and Role Base Model. Cryptography, Secret Key and Public Key Cryptosystems, Symmetric Ciphers, Block Ciphers and Stream Ciphers, DES,Triple DES, RSA.

UNIT-III:

Secure Hash and Key management, Digital Signature and Non-repudiation, cryptanalysis. Network Security, Objectives and Architectures, Internet Security Protocols, IP encapsulating Security Protocol, Network and Transport Layer Security

UNIT-IV:

Network Security Applications, Authentication Mechanisms: a) Passwords, b) Cryptographic authentication protocol, c) Smart Card, d) Biometrics,e) Digital Signatures and seals, f) Kerberos, g) X.509 LDAP Directory. Web Security :SSL

UNIT-V:

E-mail Security, PGPs / MIME, IP Security, Access and System Security ,Intruders, Intrusion Detection and Prevention , Firewall a) Hardware Firewall b) Software Firewall c) Application Firewall d) Packet Filtering. e). Packet Analysis , Proxy Servers, Firewall setting in Proxy, ACL in Proxy

References :

1. Network Security Essentials ,William Stallings, Prentice-Hall.
2. Fundamentals of Computer Security Technology, Edward Amoroso, Prentice-Hall.
3. Cryptography and Data Security ,Dorothy E. Denning, Addison-Wesley.

4. Computers under Attack ,Peter J. Denning, Addison-Wesley.
5. Cryptography: Theory and Practice ,Douglas R. Stinson, CRC Press.

Distributed Computing

Unit-I

Distributed Computing-introduction, history; Distributed Computing system: Strength and weaknesses, Different forms of Computing: Minicomputer model, workstation model, worksatation server model, Cluster:-definitions,cluster computer system architectutre, Windows cluster, distributed Computing System models: Distributed operating system, Introduction to DCE, architecture of Distributed Applications,. Frameworks, and component, Message passing:- Featues, Issues in IPC by Message passing, synchronization.

Unit II

Group Communication: Unicasting versus multicasting, Multicast API, Connectionless versus connection oriented Multicast Reliable multicast versus unreliable multicast API, Reliable multicast API, Ordering and their implementation: Absolute, causal, Consistant Distributed Computing Paradigms, Client-server paradigm, Peer to Peer paradigm. Message system paradigm Remote Procedure call model, Network services Paradigm.

Unit-III

Remote Procedure Calls(RPC): Introduction, RPC model its transparency, implementation, stub generation, RPC messages, Marshalling Arguments and result, server management Call semantics, Communication protocols for RPCs, Complicated RPCs, client server binding special RPCs, RPC in heterogeneous environment, Light weight RPC, Datagram Socket API, Stream mode Socket API, sockets with non blocking I/O Operations Secure Socket API Client server paradigm issues, software engineering issues for a network service, Connection Oriented and connectionless Servers Iterative servers and concurrent server, stateful servers

Unit IV

Synchronization :Mutual exclusion, deadlock, election algorithm, Resource Management: Introduction, desirable features of a good global scheduling algorithm, task assignment approach, load balancing approach, Load sharing approach; Process management: introduction, Process migration, threads

Unit V

Distributed file system: introduction, desirable features of a good DFS, file models, File accessing models, file sharing semantics, file caching semantics, file replication, fault tolerance, atomic transaction, design principles, Distributed object: Message passing versus distributed objects, distributed object architecture, distributed object system, RPC, remote method invocation, RMI architecture API for RMI,RMI application, comparison of RMI and socket API, Client Call back, Stub downloading, RMI security manager

References:

1. Distributed Computing Principles and Application,M.L.Liu, Pearson Education
2. Distributed Computing : Concepts and Application, M L Liu, Addison Wesley
3. Distributed Operating system, Pradeep k Singha,PHI
4. Distributed System Concepts and design, Coulooouris, Pearson education
5. Distributed System, Principles and paradigm , Tanenbaum,PHI

E- Commerce

Unit I

An introduction to Electronic commerce, E-Commerce (Introduction And Definition),activities of E-Commerce, Goals of E-Commerce, Technical Components of E-Commerce, Functions of E-Commerce, Advantages and disadvantages of E-Commerce, Scope of E-Commerce, Electronic Commerce Applications, Electronic Commerce and Electronic Business(C2C)(2G,G2G, B2G, B2P, B2A, P2P, B2A, C2A, B2B, B2C).

Unit II

The Internet and WWW, Evolution of Internet, Domain Names and Internet Organization (.edu,.com, .mil,.gov, .net etc.), Types of Network, Internet Service Provider, World Wide Web

Unit III

Internet and Security: Internet and Extranet, Definition of Internet, Advantages and Disadvantages of the Internet, Development of a Intranet, Extranet and Intranet Difference, Role of Internet in B2B Application, Secure Transaction, Computer Monitoring, Privacy on Internet, Corporate , Email privacy, Computer Crime(Laws , Types of Crimes), Threats, Attack on Computer System, Software Packages for privacy, Hacking, Computer Virus.

Unit IV

Encryption and Decryption, Secret key Cryptography, DES, Public Key Encryption, RSA, Authorisation and Authentication, Firewall, Digital Signature. Electronic Data Exchange : Introduction, Concepts of EDI and Limitation, Applications of EDI, Disadvantages of EDI, EDI model. Electronic Payment System: Introduction,

Unit V

Electronic Payment System: Types of Electronic Payment System, Payment Type, Traditional Payment, Value Exchange System, Credit Card System, Electronic Fund Transfer, Paperless bill, Modern Payment Cash, Electronic Cash, E – Governance for India: E – Governance of India, Indian customer EDI System, Imports, Exports

References :

1. E-Commerce Concepts, Models, Strategies- :- G.S.V.Murthy Himalaya Publishing House
2. E- Commerce Technology and Management, Kamlesh K Bajaj and Debjani Nag, Mc Graw Hill
3. Electronic commerce :- Gray P. Schneider , Wiley

4. e-Business Essentials : Successful e-Business Practices - From the Experts at PC Magazine, Frank J. Derfler, Pearson.
5. Building E-Commerce Sites With . Net Framework, Bentrum, Pearson.

Complier Design

Unit I

Introduction to Compiling- Compilers-Analysis of the source program-The phases- Cousins-The grouping of phases-Compiler construction tools. The role of the lexical analyzer- Input buffering-Specification of tokens-Recognition of tokens-A language for specifying lexical analyzer.

Unit II

Syntax Analysis- The role of the parser-Context-free grammars-Writing a grammar-Topdown parsing-Bottom-up Parsing-LR parsers-Constructing an SLR(1) parsing table. Type checking, Type Systems-Specification of a simple type checker.Run-Time Environments-Source language issues-Storage organization-Storage-allocation strategies.

Unit III

Intermediate languages-Declarations-Assignment statements - Boolean expressions- Case statements-Backpatching-Procedure calls

Unit IV

Issues in the design of a code generator- The target machine-Run-time storage management-Basic blocks and flow graphs- Next-use information-A simple codegenerator-Register allocation and assignment-The dag representation of basic blocks - Generating code from DAG.

Unit V

Introduction-The principle sources of optimization-Peephole optimization- Optimization of basic blocks-Loops in flow graphs- Introduction to global data-flow analysis-Code improving transformations.

References:

1. Compilers- Principles, Techniques, and Tools",Alfred V. Aho, Ravi Sethi Jeffrey D. Ullman, , Pearson Education Asia,
2. Modern Compiler Design, David Galles, Pearson Education Asia.
3. Advanced Compiler Design &Implementation, Steven S. Muchnick,Morgan Kaufmann Pulishers,.
4. Crafting a Compiler with C, C. N. Fisher and R. J. LeBlanc ", Pearson Education.
5. Modern Compiler Design, Galles, Pearson.

Object Oriented Analysis and Design

Unit-I

Object Oriented Methodolgy: Object model - Elements-Class and object - Nature of object/class-Relationship among Object-Relationship among classes-Quality classes and objects - Classification-Classical categorization - Conceptual clustering - prototype theory - Analysis and design .

Unit-II

Unified Modeling Language(UML): Introduction, Model, Use case - usage-class diagrams - Perspectives - Association - Attributes - Operation –CRC cards-Usage -Interaction diagram-Sequence diagrams-Collaboration diagrams-Package diagrams-Concurrent state diagrams-Activity diagrams-Decomposition and activity.

Unit-III

Object and Responsibilty Identification: Object Oriented model, traditional techniques-Current techniques-Approach to identify attribute- Service-Method.

Unit-IV

Behaviour Specification: Static behaviour specification techniques-Control-Documenting control-Documenting static behaviour -Dynamic behaviour identification-Specification techniques-Documenting Event specifications-Identifying relationships.

Unit-V

UML and Programming :Domain model-specification model-System design-Detailed design-Coding.

References:

1. UML distilled-Applying the standard object modelling language, Martin Forwler, Kendall Scott., Addison Wesley.
2. "UML and C++ - A practical guide to object oriented developement ,Richard C lee, William M Tepfenhart, Prentice Hall.
3. Object Oriented Analysis and design with applications, Grady Booch, ", Addison Wesley.
4. Object Oriented Methods-A foundation , James martin & James J.Odell, Prentice Hall.
5. Object-Oriented Analysis and Design, John Deacon, Addison-Wesley,

Bioinformatics

Unit-I

Introduction: genomes - diversity size and structure - proteins proteonomes - Information Content in Biological sequences - Production of molecular function and strcture.

Unit-II

Internet resources and public data bases:databases and tools -sequence similarity searches - Alignment - Production sewer - Molecular Biology Software - blast-fasta-blosum.

Unit-III

Sequence Comparison in Biology: global alignment - local alignment - gaps Multiple slung comparison - Multiple alignment to Psychogenetic trees.

Unit-III

Maps Mapping and Sequencing :DNA mapping and sequencing problems - Mapping and genome project - Large-scale sequency and sequence assembly - shotgun sequencing.

Unit-IV

Stings And Evolutionary Trees: Ultra metric Trees and distances - Maximum parsimony - stenes trees - phylogenetic alignment.

Unit-V

SPECIAL TOPICS IN BIOINFORMATION: Molecular computing - Gene production.

References:

1. Bioinformatics : Tools and Applications , Edwards, David; Stajich, Jason; Hansen, David (Eds.)
2. Bioinformatics. Sequence and Genome Analaysis Mount D.W.. , Cold Spring Harbar,New york.
3. Bioinformatics: A practical guide to the analysis of genes and proteins, John Wiley & Sons, New York.
4. Introduction to Bioinformatics ,Attuvod T.K. Smith D.J. Parry:, Addison Wesley .
5. Bioinformatics: sequence structure and data banks , Higgins Des, Taylor, ,Oxford Univ. Press, Oxford

Pattern Recognition

Unit-I

Introduction: Pattern and feature-Training and learning in Pattern recognition approaches- Statistical pattern recognition-Syntactic pattern recognition-Neural pattern recognition- Reasoning driven pattern recognition-Discriminant functions-Linear and Fisher's discriminant functions

Unit-II

Statistical Pattern Recognition: Gaussian model-Supervised learning-Prametric estimation- Maximum likelihood estimation-Bayesian parameters estimation-Perception algorithm- LMSE algorithm-Problems with Bayes approach-Pattern classification by distance functions- Masximum distance pattern classifier

Unit-III

Cluster Analysis: Unsupervised learning-Clustering for Unsupervised learning and classification-C-means algorithm-Hierarchical procedures-Graph theoretic approach to pattern clustering-Validithy of clustering solutions

Unit-IV

Syntactics Pattern Recognition: Elements of formal grammar-String generation as pattern description-Recognition of syntactic description- Parsing-Stochastic grammer and appllications-Graph based structural representation

Unit-V

Feature Extension And Recent Advances: Entropy minimisation-Karhunen-Loeve transformation-Neural Network structures for pattern recognition-Unsupervised learning -self organising networks-Fuzzy pattern classifiers-Genetic algorithms-Application to pattern recognition

References:

1. Pattern Recognition and Image Analysis Richard,E.G.,Johnsonbaugh and Jost .S.,Prentice Hall of India Private Ltd.
2. Pattern classification and Scene analysis: Duda R.O. and Hart P.E.,Wiley
3. Pattern Recognition Engineering ,Morton Nadler and Eric Smith p, John Wiley andSons.
4. Pattern Recognition Principles ,Tou and Gonzaler R., Addison Wesley.
5. Pattern Recognition:Statistical and Neural Approaches , Robert J. Schalkoff," ",JohnWesley

Multimedia Database Systems

Unit-I

Introduction To Multimedia Databases:Types of multimedia information, multimedia database applications, characteristics of multimedia object, components of a multimediadatabase management system.

Unit-II

Multimedia Storage And Retrieval :Image database, text/document database, video database, audio databases, retrieving multimedia data from disks/cd-rom/tapes.

Unit-III

Multimedia Information Modeling :Data analysis, data structuring and accessing, examples ofmultimedia Structures, Metadata for multimedia, multimedia data access, object-orientedmodels, temporal models, modelss and multimedia authoring, relevant

data structures (k-D trees, point quadtrees, the MX-quadtree, r-trees, etc.).

Unit-IV

Querying Multimedia Databases : Operations on multimedia data, Query processing and query languages .

Unit-V

MultiMedia DBMS (MMDBMS) Architecture :Distributed MMDBMS architecture, client- server components, implementation considerations, creating Distributed Mulitmedia Presentations.

References:

1. Principles of Multimedia Database Systems, V.S. Subrahmanian, , Morgan KaufmannPublishers.
2. Multimedia Database Management Systems, B.Prabakaran, , Kluwer AcademicPublishers, 1997.
3. Modern Database Systems. W.Kim, , Addison-Wesley.
4. Multimedia, computing, communications and applications Ralf Steinmetz, KlaraNahrstedt, , Prentice Hall.

Soft Computing

Unit- I

Introduction :Soft computing paradigms - Neural network - Fuzzy logic - Derivation free optimization methods of genetic algorithms - Soft computing characteristics.

Unit-II

Fuzzy Logic: Sets - properties - Arithmetics - Members function - Fuzzy relations - Relation equations - Fuzzy measures - Types of uncertainty - Memberes of uncertainties - Measures of fuzziness - Probabilities Vs Possibility - Measures of fuzzy events.

Unit-III

Neural Computing: Neuronmodeling - learning in simple neuron - Perception learning curve -Proof - Limitations of perception

Unit-IV

Neural Networks :Multi-level perception - Algorithm - Visualizing network behaviour - Self organizing network -Kohenen algorithm - Hopfield network - Adaptive resonance theory - Pattern classification.

Unit-V

Gentic Algorithms :Introduction - Biological terminology - Search space and fitness landscapes - Elements of genetic algorithms - Genetic algorithms in problem solving.

References:

1. Theory of Fuzzy subsets, Kauffmann a, Academic Press.
2. Neural Computing - An Introduction ,R.BealeC.T.Jacson, Adam Hilge.
3. An Introduction to Genetic Algorithms, Melanie Mitchell, PHI.
4. Neuro - Fuzzy and Soft Computing , JS Jang, C.T.Sun, E.Mizutani, , MatlabCurriculamseries, Prentice International.
5. Neural Networks-A Comprehensive foundation ,Simon Haykin, Prentice Hall of India.

Embedded Systems

Unit-I

Embedded system:- Definition, components, I/O, Processor, Memory, Characteristics, attributes, design metrics , design challenges, application areas, Issues of designing efficient Embedded system, Difference between ES and PC, Design Technology, Integration and Testing of Embedded Hardware and Firmware, Embedded System Development Environment:-IDE,compiler, assembler, simulator, Emulator, debugging, Target hardware debugging and Boundary Scan , EDLC, Trends in the Embedded Industry:-Processor trends, OS trends, Development languages trends, Open Standard and framework. S/W H/W Co- design.

Unit-II

Microcontroller:-Introduction, criteria for choosing a microcontroller**,** Overview of 8051 Microcontroller family: Architecture, basic assembly language programming concepts, Memory Organization of 8051,SFR, Addressing Modes, Instruction set including bit manipulating instruction and programming using it, Subroutine, Stack, Time delay generations and calculations, I/O port programming, Programming of 8051 Timers, Counter Programming. Watch Dog Timer, Real Time clock.

Unit -III

8051 hardware connections, basics of Communication with 8051**,** Basics of Communication, Overview of RS-232, I^2C Bus, UART, USB, 8051 connections to RS-232, 8051 serial communication programming, 8051 interrupts, Programming of timer interrupts, Programming of External hardware interrupts, Programming of the serial communication interrupts, Interrupt priority in the 8051

Unit-IV

Basic Concepts of Interfacing, Introduction8051 Interfacing to an external memory and Accessing External data Memory and External Code Memory, Interfacing to LCD/Keyboard, DAC/ADC, Sensors, a Stepper Motor, Interfacing with 8255

Unit-V

Real-Time Operating Systems: Review of Concepts, Basic Concepts, Types of RTOS, RTOS Issues, Implementing of RTOS, Distributed Processing Systes-Networking with msCAN: Design Approaches, CAN protocol, RTOS:- introduction, type, overview of commercially available RTOS, Introduction to ES design using RTOS .

References:

1. Introduction to Embedded Systems ,Shibu K V , TMH.
2. Embedded System Design ,Frank Vahid& Tony Givargis, John Wiley & sons.
3. "The 8051 Microcontroller and Embedded Systems", M.A. Mazidi and J. G. Mazidi,PHI.
4. An Embedded Software Primer , David E. Simon, Pearson Education.
5. "Embedded Systems",Raj Kamal, TMH.

Mobile Computing

UNIT – I

Introduction to Personal Communications Services (PCS): PCS Architecture, Mobility management, Networks signalling.Global System for Mobile Communication (GSM) system overview: GSM Architecture, Mobility management, Network signalling, Performance Analysis: Admission control and handoffs

UNIT – II

2.5/3G Mobile Wireless systems: packet switched Data ,Introduction, 3G CDMA cellular standards, Wideband Code Division Multiple Access (W-CDMA), and CDMA 2000, Quality of services in 3G. 2.5/3G TDMA: General Packet Radio Services (GRPS) and EDGE.

UNIT – III

Access Scheduling techniques in cellular systems Slotted Aloha access, integrated access: voice and data, scheduling in packet based cellular systems. Mobile Data Communication: WLANs (Wireless LANs) IEEE 802.11 standard, Mobile IP.

UNIT – IV

Wireless Application Protocol (WAP): The Mobile Internet standard, WAP Gateway and Protocols, wireless mark up Languages (WML).

Unit- V

Wireless Local Loop(WLL): Introduction to WLL Architecture, wireless Local Loop

Technologies.Global Mobile Satellite Systems; case studies of the IRIDIUM and GLOBALSTAR systems.

References

1. Yi-Bing and Imrich Chlamtac, "Wireless and Mobile Networks Architectures", JohnWiley & Sons, 2001.
2. Raj Pandya, "Mobile and Personal Communication Systems and Services", PHI, 2001
3. Mischa Schwartz, "Mobile Wireless Communications", Cambridge University Press,UK, 2005.
4. Mark Ciampa, "Guide to Designing and Implementing wireless LANs", Thomsonlearning, Vikas Publishing House, 2001.

Data Mining

UNIT I

Introduction, Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture,Implementation, Further Development, Data Warehousing to Data Mining

UNIT II

Pre-processing, Cleaning, Integration, Transformation, Reduction, Discretization, Concept Hierarchy Generation, Data Mining Primitives, Query Language, Graphical User Interfaces,Architectures, Concept Description, Data Generalization, Characterizations, Class Comparisons, Descriptive Statistical Measures.

UNIT III

Association Rule Mining, Single-Dimensional Boolean Association Rules from TransactionalDatabases, Multi-Level Association Rules from Transaction Databases

UNIT IV

Classification and Prediction, Issues, Decision Tree Induction, Bayesian Classification, Association Rule Based, Other Classification Methods, Prediction, Classifier Accuracy, Cluster Analysis, Types of data, Categorisation of methods, Partitioning methods, OutlierAnalysis.

UNIT V

Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Databases, Multimedia Databases, Time Series and Sequence Data, Text Databases, World Wide Web, Applications and Trends in Data Mining

References:

1. Data Mining: Concepts and Techniques, J.Han, M.Kamber, Academic Press,Morgan Kanf Man Publishers.
2. Data Mining, Pieter Adrians, DolfZantinge, Addison Wesley.

3. Data Mining with Microsoft SQL Server, Seidman, Prentice Hall of India.
4. Mastering Data Mining: The Art and Science of Customer Relationship Management,Berry and Linoff, John Wiley and Sons.
5. Data Ware housing: Concepts, Techniques, Products and Applications, C.S.R. Prabhu,Prentice Hall of India.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

BACHELOR OF BUSINESS ADMINISTRATION

(B.B.A.)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: B.B.A.

Introduction :

B.B.A. (Bachelorr of Business Administration) is a graduate-level program that provides advanced knowledge and skills in business and management. The B.B.A. program is designed to prepare students for leadership roles in various industries and organizations.

ODL (Open and Distance Learning) is a mode of education that allows students to study at their own pace and convenience, without the need to attend classes in a physical classroom. ODL mode of education typically makes use of technology such as online learning platforms, video conferencing, and other digital tools to deliver course content and enable interaction between students and instructors.

B.B.A. ODL programs combine the flexibility of distance learning with the rigor and quality of a traditional B.B.A. program. B.B.A. ODL programs allow students to access course materials and complete assignments and exams from anywhere, at any time, and on any device with an internet connection. This makes the program more accessible to students who are working or have other commitments that may make attending a traditional classroom-based program difficult.

B.B.A. ODL programs typically cover core business topics such as finance, accounting, marketing, human resources, and operations management. The program may also offer specializations in areas such as entrepreneurship, international business, healthcare management, and information technology.

One of the advantages of B.B.A. ODL programs is that they allow students to customize their learning experience based on their specific interests and career goals. Students can choose to take courses and modules that are relevant to their field or industry and can complete the program at their own pace, allowing them to balance their studies with other commitments.

Overall, B.B.A. ODL programs offer a flexible and convenient option for students who want to earn an B.B.A. degree while balancing their work and personal life. The quality of the program is ensured through the use of modern technology, qualified faculty, and effective quality assurance mechanisms.

(i) (a) Programme's Mission: The mission of an B.B.A. program is to provide students with advanced knowledge and skills in business and management that will enable them to become effective leaders and decision-makers in various industries and organizations. The B.B.A. program is designed to equip students with the necessary tools and perspectives to address complex business challenges and to make strategic decisions that drive organizational success.

- The specific mission of an B.B.A. program may vary depending on the institution and the program's focus. However, some common objectives of an B.B.A. program include:

- Developing leadership skills: B.B.A. programs aim to develop students' leadership skills by exposing them to real-world business scenarios and providing opportunities for them to practice decision-making and problem-solving.
- Building a strong foundation in business fundamentals: B.B.A. programs provide a comprehensive understanding of business fundamentals such as finance, marketing, accounting, operations management, and strategy.
- Enhancing critical thinking and analytical skills: B.B.A. programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Fostering an entrepreneurial mindset: B.B.A. programs aim to foster an entrepreneurial mindset by encouraging students to think creatively, identify business opportunities, and take calculated risks.
- Cultivating ethical and socially responsible business practices: B.B.A. programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the mission of an B.B.A. program is to produce graduates who are equipped with the knowledge, skills, and perspectives to make a positive impact in their chosen field and contribute to the success of the organizations they serve.

(b) Objectives:

The objectives of an B.B.A. (Bachelorr of Business Administration) program are to provide students with advanced knowledge and skills in business and management that will enable them to become effective leaders and decision-makers in various industries and organizations. Some specific objectives of an B.B.A. program may include:

- Developing business acumen: B.B.A. programs aim to develop students' understanding of various aspects of business, such as finance, marketing, accounting, operations, and strategy.
- Enhancing leadership and management skills: B.B.A. programs aim to develop students' leadership and management skills by exposing them to real-world business scenarios and providing opportunities to practice decision-making and problem-solving.
- Fostering critical thinking and analytical skills: B.B.A. programs aim to enhance students' critical thinking and analytical skills by challenging them to analyze complex business situations and make data-driven decisions.
- Providing global business perspectives: B.B.A. programs aim to provide students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world.

- Encouraging innovation and entrepreneurship: B.B.A. programs aim to encourage students to think creatively, identify business opportunities, and take calculated risks by providing them with a framework for entrepreneurship.
- Cultivating ethical and socially responsible business practices: B.B.A. programs aim to cultivate ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions.

Overall, the objectives of an B.B.A. program are to provide students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment. The program aims to produce graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

(ii) Relevance of the Programme with HEI's Mission and Goals: The relevance of an B.B.A. program with a Higher Education Institution's (HEI) mission and goals depends on the specific goals of the institution. However, in general, an B.B.A. program aligns with the mission and goals of HEIs in several ways:

Developing skilled professionals: An B.B.A. program provides students with advanced knowledge and skills in business and management that enable them to become effective leaders and decision-makers in various industries and organizations. This aligns with HEI's goal of developing skilled professionals who can make a positive impact in their respective fields.

Fostering entrepreneurship and innovation: An B.B.A. program encourages students to think creatively, identify business opportunities, and take calculated risks, which aligns with HEI's goal of fostering entrepreneurship and innovation.

Promoting ethical and socially responsible business practices: An B.B.A. program cultivates ethical and socially responsible business practices by exposing students to various ethical dilemmas and providing them with a framework for making ethical decisions, which aligns with HEI's goal of promoting ethical and socially responsible practices.

Providing global perspectives: An B.B.A. program provides students with a global perspective on business by exposing them to various business practices, cultures, and economies from around the world, which aligns with HEI's goal of providing a diverse and international education.

Advancing research and knowledge: An B.B.A. program contributes to the advancement of research and knowledge in the field of business and management by producing graduates who are equipped with the necessary tools and perspectives to address complex business challenges and make strategic decisions that drive organizational success.

Overall, an B.B.A. program aligns with HEI's mission and goals by providing students with the knowledge, skills, and perspectives to succeed in a dynamic and complex business environment and by contributing to the advancement of research and knowledge in the field of business and management.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an B.B.A. (Bachelorr of Business Administration) program can vary depending on the specific program and institution. However, in general, the B.B.A. program is designed for individuals who have completed a bachelor's degree and who seek to advance their knowledge and skills in business and management.

The target group for an B.B.A. program typically includes:

Recent graduates: Graduates who have recently completed their undergraduate degrees and are seeking to gain advanced knowledge and skills in business and management to enhance their career prospects.

Early to mid-career professionals: Professionals who have been working for a few years and seek to gain a competitive edge in their careers by enhancing their leadership and management skills.

Entrepreneurs: Individuals who have started their own business or seek to start their own business and want to gain knowledge and skills in various aspects of business, such as finance, marketing, and operations.

Career changers: Individuals who are seeking to make a career change and move into the field of business and management.

International students: Individuals from around the world who seek to gain a global perspective on business and management and enhance their career prospects.

Overall, the target group for an B.B.A. program includes individuals who are seeking to enhance their career prospects, gain advanced knowledge and skills in business and management, and develop as leaders and decision-makers in their respective fields.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

An B.B.A. program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competencies. The ODL mode allows learners to access learning materials and resources from anywhere, at any time, and at their own pace. This makes it a flexible and convenient mode of learning, especially for working professionals who may not have the time or resources to attend a traditional on-campus program.

Some of the ways in which an B.B.A. program can be appropriately conducted in the ODL mode include:

Online course materials: B.B.A. programs in the ODL mode typically provide online access to course materials, including lectures, readings, and assignments. This allows learners to access the materials from anywhere, at any time, and at their own pace.

Interactive learning: ODL B.B.A. programs may use a range of interactive learning technologies, such as video conferencing, discussion forums, and webinars, to facilitate communication and interaction between learners and instructors.

Flexibility: ODL B.B.A. programs allow learners to study at their own pace and on their own schedule, which makes it possible for working professionals to balance their work and personal commitments with their academic pursuits.

Assessment and feedback: ODL B.B.A. programs typically use a range of assessment methods, including assignments, quizzes, and exams, to evaluate learners' knowledge and skills. Instructors also provide feedback and support to learners through online channels.

Overall, the ODL mode can be an appropriate and effective way to acquire specific skills and competencies through an B.B.A. program, provided that the program is well-designed and supported by appropriate technologies and resources.

(v) Instructional Design: The B.B.A. programme is a three-year degree programme of 120 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of Three year duration with annual examinations. The maximum period allowed is 5 years. The Programme structure is as below.

First Semester			
S. No	**Name of Subject**	**Credits**	**Total Marks**
1	Foundation Course in Environmental Science	4	100
2	Organizational Behavior	5	100
3	Principles of Management	5	100
4	Management & Financial Accounting	5	100
5	Business Economics	5	100
Total		**24**	

Second Semester			
S. No	**Name of Subject**	**Credits**	**Total Marks**
1	English Grammar & Composition	4	100

2	Legal & Regulatory Framework	5	100
3	Marketing Management	5	100
4	Human Resource Management	5	100
5	Organization, Competition & Environment	5	100
Total		**24**	

Third Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Soft Skills for Business	4	100
2	Corporate Accounting	5	100
3	Consumer Behavior	5	100
4	Corporate Environment	5	100
5	Business Ethics	5	100
Total		**24**	

Fourth Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Business Research Methods	5	100
2	Financial Management	5	100
3	Services Management	5	100
4	Banking Regulations & Operations	4	100
5	Cost Accounting	5	100
Total		**24**	

Fifth Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Entrepreneurial Management	5	100
2	Computer Applications in Business	4	100
3	Investment Management	5	100
4	International Finance	5	100
5	Business Regulations	5	100
Total		**24**	

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is three years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the B.B.A. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the B.B.A. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications-for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree from a recognised university.

Fee Structure: B.B.A. (Three Year):

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods

2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and

successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has nodisciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked

with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
B.B.A.	10,00000/-	5,00000/-	15,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are important aspects of any educational program, including B.B.A.. Here are some quality assurance mechanisms and expected program outcomes of B.B.A.:

Quality assurance mechanisms are critical in ensuring that an B.B.A. program delivers on its expected outcomes and meets the needs of learners and the industry. The following are some of the quality assurance mechanisms that can be put in place for an B.B.A. program:

- Accreditation: B.B.A. programs can be accredited by recognized bodies to ensure that they meet certain standards of quality. Accreditation can also provide assurance to learners, employers, and other stakeholders that the program meets industry standards.
- Curriculum design and review: B.B.A. programs should have a well-designed and up-to-date curriculum that aligns with industry needs and trends. Regular curriculum reviews can ensure that the program remains relevant and up-to-date.
- Faculty qualifications and development: The faculty teaching in an B.B.A. program should have appropriate qualifications and experience in the field of business and management. Regular professional development opportunities can also ensure that faculty remain up-to-date with the latest developments in their field.
- Student support: B.B.A. programs should provide appropriate student support services, such as academic advising, career counseling, and access to resources such as libraries and technology.

- Assessment and evaluation: B.B.A. programs should use appropriate assessment methods to evaluate learners' knowledge and skills. Evaluation can also be used to gather feedback from learners and other stakeholders to improve the program.

Expected program outcomes for an B.B.A. program typically include:

- Mastery of business and management concepts and practices: Learners should demonstrate a deep understanding of the fundamental concepts and practices of business and management.
- Advanced critical thinking and problem-solving skills: B.B.A. learners should be able to apply advanced critical thinking and problem-solving skills to complex business problems.
- Effective communication and interpersonal skills: Learners should be able to communicate effectively in a range of business contexts and demonstrate strong interpersonal skills.
- Leadership and management skills: B.B.A. learners should demonstrate advanced leadership and management skills, including the ability to lead and manage teams and organizations.
- Ethical and socially responsible decision-making: Learners should demonstrate an understanding of ethical and socially responsible decision-making and be able to apply this knowledge in a range of business contexts.

First Semester

First Semester			
S. No	**Name of Subject**	**Credits**	**Total Marks**
1	Foundation Course in Environmental Science	4	100
2	Organizational Behavior	5	100
3	Principles of Management	5	100
4	Management & Financial Accounting	5	100
5	Business Economics	5	100
Total		**24**	

Subject Name: FOUNDATION COURSE IN ENVIRONMENTAL SCIENCE

Unit 1: The Multidisciplinary nature of environmental studies Definition; Scope and importance,Need for public awareness.

Natural Resources: Renewable and non-renewable resources:

Natural resources and associated problems

a) Forest resources: Use and Over-exploitation, deforestation, case studies. Timberextraction, mining, dams and their effects on forests and tribal people.

b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.

c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy resources: Growing energy needs, renewable and non-renewable energy sources,

use of alternate energy sources, Case studies.

f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit 2: Ecosystems:

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession. - Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:

a. Forest ecosystem
b. Grassland ecosystem
c. Desert ecosystem
d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Biodiversity and its Conservation

a. Introduction-Definition: genetic, species and ecosystem diversity.
b. Biogeographical classification of India.
c. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
d. Biodiversity at global, National and local levels.
e. India as a mega-diversity nation.
f. Hot-spots of biodiversity.
g. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.
h. Endangered and endemic species of India.
i. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit 3: Environmental Pollution:

- Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster management: floods, earthquake, cyclone and landslides.

Social Issues and the Environment

- From Unsustainable to Sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.

  Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act. - Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.

Unit 4: Human Population and the Environment

- Population growth, variation among nations.
- Population Explosion-Family welfare Programme.
- Environment and human health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and Child Welfare.
- Role of information Technology in Environment and human health.
- Case Studies.

Unit 5: Field Work (Practical)

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain.
- Visit to a local polluted Site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc.

Subject Name: ORGANIZATIONAL BEHAVIOR

Unit 1: Introduction: Emergence, Concepts, Importance, Nature, Characteristics, Models, Cognitive, Behaviorist, Social Cognitive Framework, Relationship with other fields. Perception- Nature, Concept, Process and Importance, Attitude- Concept, Process, Importance, Attitude Measurement, Personality- Concept, Nature, Types and Theories, Learning- Concept and Theories

Unit 2: Work Motivation: Concept, Application, Principles Theories, Involvement, Theories of Motivation: Maslow's need hierarchy, Herzberg theory of Motivation.

Unit 3: Group Dynamics: Definition types of group, Stage of Group Development, Group Characteristics, Group Structure, Group Norms and Group Norms and Group Cohesiveness, Group Decision-Making.

Unit 4: Leadership: Definition and framework of leadership perspectives, Leadership theories and models: Trait theories, Behavior Theories, Leadership Styles, Nature of Conflict, Reactions ofConflict, Managing Conflict.

Unit 5: Organizational Change: Forces of change, Process for Planned Organizational Cultures, Globalization and Organizational Cross Cultures, the emergence of global organization.

Subject Name: PRINCIPLES OF MANAGEMENT

Unit 1: Definition of Management: Its Nature and Purpose, Management as a Science and Art, The Elements of Science, Patterns of Management Analysis – Systems approach to operational management. Functions of Managers. Management and Society- Social Responsibilities and Ethics with reference to India and EN India. Operating in a Pluralistic Society, Social Responsibilityof Managers, and Ethics in Managing. A Broad overview of the Different Forms of Business Enterprises in India.

Unit 2: Nature and Purpose of Planning: Types of Plans, Steps in Planning, the Planning Process-A Rational Approach to Goal Achievement. Objectives- The Nature of Objectives, Evolving Concepts in Management by Objectives (MBO), The Process of MBO, Setting Objectives, Benefits and weakness of MBO, The Nature and Purpose of Strategies Planning Process, The TOWS Matrix, The Portfolio Matrix, Major Kinds of Strategies and Policies, The Three Generic Competitive Strategies by Porter, Effective Implementation of Strategies, Premising and Forecasting. Decision Making- The Importance and Limitations of Rational Decision Making, Evaluation of Alternatives, Selecting an Alternative, Programmed and Non-Programmed Decisions.

Unit 3: Nature and Purpose of Organizing: Formal and Informal Organizations, Organizational Division- The Department, Organization Levels and the span of Management, Factors Determining an Effective Span, Organizational Environment for

Entrepreneur, The Structure and process of Reorganizing. Authority and Power, Line and Staff Concepts, Art of Delegation.

Unit 4: Human Resource Management and Selection: Definition of Staffing, Definition of Managerial Job, Systems Approach to HRM – An overview the staffing function, Situational Factors affecting staffing, Selecting – Matching the person with the job, Systems Approach, Position Requirements and job Design, Skills and Personal Characteristics required by Managers, Matching Qualifications with Position Requirements, Selection Process, Techniques and Instruments, Orienting and Socializing New Employees. Performance Appraisal: Purpose and uses of Appraisal, Problem of Management Appraisal, Choosing The Appraisal Criteria, Traditional Trait Appraisals, Apprising Managers Against Verifiable Objectives, Appraising Managers as Managers, Rewards and Stress of Managing, Formulating the Career Strategy. Manager Development Process and Training, Approaches to Manager Development on – the – Job Training

and Internal and External Training, Managing Changes, Organizational Conflict, Organizational Development.

Unit 5: Controlling the Basis Control Process: Critical Control Points and Standards, Control as a Feedback Systems, Real – Time information and Control Feed Forward Control, Requirements for Effective Controls. Budget- Traditional non-budgetary control Devices, Time – Event Network analysis, Information Technology, Use of Computers in handling information, Challenges Created by Information Technology. Control of Overall Performance, Budget summaries and report, profit and loss control, Control through return on investment, Direct Control VS Preventive Control, Developing Excellent Managers.

Subject Name: FINANCIAL & MANAGEMENT ACCOUNTING

Unit I: Financial Accounting: Definition, Nature and Scope of Accounting. Accounting Principles. Accounting Concepts, Indian Accounting Standards. Difference between traditional and modern accounting.

Unit II: **Basics of financial Accounting**: Journal, Ledger, Trial Balance, Preparation of Annual Accounts - Profit and Loss Account and Balance Sheet. Adjustment Entries.

Unit III: Analysis of Financial Statement: Financial Statements - Meaning, Nature and Limitations. Meaning of Financial Analysis. Significance of Financial Analysis to Different Parties. Vertical vs. Horizontal Analysis. Internal Vs. External Analysis. Trend percentages and Common size statement.

Techniques of Financial Analysis: Accounting Ratios - Meaning, Significance and Limitations. Classification, Computation and interpretation of Liquidity Ratios, Leverage Ratios, Activity/ turnover Ratios and Profitability Ratios. **Du-point Analysis.** Funds

Flow Statement - Meaning and Need. Preparation and Interpretation. Cash Flow Statement - Meaning, Need, Preparation and Interpretation.

Unit IV: Management Accounting Introduction-Meaning, Functions, Scope and Limitations of Management Accounting, Financial Accounting vs. Management Accounting

An orientation to Cost Accounting-Purpose of Cost Accounting, Elements of cost, Kinds of costing, Classification of Costs, Methods of Cost variability, Marginal Costing & **Break-Even Analysis-**Meaning of Marginal Costing, Marginal Costing Techniques, Break Even Point, Graphic presentation, Preparation of break-even charts and their interpretation, Managerial uses of Break-even analysis, **Activity Based Costing-** Concept, main activities and their cost drivers, developing ABC System.

Unit V: Budgeting Definition of a budget, Kinds of budgets, Preparation of a Budget, BudgetaryControl, Flexible Budgeting, Zero Base Budgeting, Performance Budgeting **Responsibility**

Centres-Cost Centres, Profit Centres and Investment Centres, Inter divisional transfer pricing – concept and methods.

Suggested Readings:

1. Anthony Robert N. & Reece James S : Management Accounting, Irwin
2. Anthony Robert N & Welsch Glenn A: Fundamentals of Management Accounting, R.D. Irwin
3. Hongren Charles T. : Introduction to Management Accounting, Pearson Education India
4. Bhattacharya S.K. & Dearden John : Accounting for Management, Tata McGraw-Hill Pub.Co.Ltd., ND 5. Hingorani N.L., Ramanathan A.R. & Grewal T.S.: Management Accounting,Sultan Chand & Sons.
6. Khan M.Y. and Jain P.K. :Management Accounting Tata McGraw-Hill Publishing Co. Ltd. ,New Delhi
7. Kishore Ravi M. : Taxman's Advanced Management Accounting
8. H.G.Guthman : Financial Statements Analysis, PHI
9. Jain & Narang :Advanced Accountancy, Kalyani
10. Myer :Financial Statements Analysis PHI Publishers
11. Robert Anthony & Reece :Management Accounting - Text
12. Khan & Jain : Management Accounting, TataMcGrawHill

Subject Name: BUSINESS ECONOMICS

Unit 1: Managerial Economics: Nature of Managerial Economics, Integration of Economics Theory and Business Practice, Importance of Managerial Economics, Managerial Economics andTraditional Economics, Managerial Economics and Operation research, Models.

Unit 2: Concept of Business Economics: Fundamental Concepts.

Tools and Techniques of Economics: Some Formal Definitions and derivations, Use of calculus tools, Econometric Estimations, Case Methodology, Overview,

Unit 3: Consumption and Demand Analysis: Price Elasticity of Demand, Elasticizes of Demand, Income Elasticity of Demand, Cross Elasticity of Demand, Promotional Elasticity city of Demand, Elasticity of Price Expectation.

Unit 4: Business Forecasting: Objective of Demand Forecasting, Importance of Forecasting, Techniques of Forecasting.

Industry and Market Structure Analysis: Pure and Perfect Competition, Pure Monopoly, Competition Analysis.

Unit 5: Market Analysis: Profits, Investments, Socio – Psychological Aspects of Demand, Control and Management of Demand.

Production Analysis: Theory of Cost, Internal Economics, External Economics, Cost Function.

Second Semester

Second Semester			
S. No	**Name of Subject**	**Credits**	**Total Marks**
1	English Grammar & Composition	4	100
2	Legal & Regulatory Framework	5	100
3	Marketing Management	5	100
4	Human Resource Management	5	100
5	Organization, Competition & Environment	5	100
Total		**24**	

Subject Name: ENGLISH GRAMMAR & COMPOSITION

Unit 1: English Grammar

1. **An Introduction to Part of Speech:** Verb, Tenses, Voice, Direct and Indirect Forms of Speech.
2. Prepositions
3. List of Appropriate Preposition Used
4. Sentence
5. Synthesis of Sentences
6. Transformation of Sentences
7. Syntax
8. Punctuation
9. **Vocabulary:** Antonyms and Synonyms, Similar Words Distinguished, One Word Substitutions,More about words, Idioms & Phrases, Idioms.
10. **Common Error:** Some fundamental Rules for Correction, Sentences with error.
11. Comprehension (with answers)

Unit 2: Composition

1. Paragraph Writing
2. Letter writing
3. Essay Writing
4. The Essays

Subject Name: LEGAL AND REGULATORY FRAMEWORK

Unit I: Law relating to Societies and Trusts: General concept relating to registration of

societies; property of societies; suits by and against societies; enforcement of judgment against societies; dissolution of societies; general concept relating to trusts; creation of a trust; duties and liabilities of trustees; rights and powers of trustees, disabilities of trustees; rights and liabilities of the beneficiary.

Unit II: Law relating to Intellectual Property: Concept and development of intellectual property law in India; law and procedure relating to patents, trademarks and copyrights; geographical indications; design act; overview of laws relating to other intellectual property rights; intellectual property appellate board.

Unit III: Law relating to Pollution Control and Environmental Protection: Concept of sustainable development, biodiversity and carbon credit; government policy regarding environment; law relating to prevention and control of air pollution and water pollution; Environment (Protection) Act, 1986; national green tribunal.

Unit V: Law Relating to Information: Right to Information Act, 2005- Definitions, right to information, obligations of public authorities, request for obtaining information, disposal of request, exemption from disclosure of information, grounds for rejection to access in certain cases, severability; central information commission- its constitution, term of office, conditions of service and removal; powers and functions of Central Information Commissions, appeals and penalties.

Subject Name: MARKETING MANAGEMENT

Unit 1: Introduction to Marketing: Marketing: Definition, Key Concepts and Trends, Marketing Environment, Marketing Strategy, Market Segment, Target Marketing Selection and Marketing Mix.

Unit 2: Consumer Behavior: Consumer Behavior, Customer Decision Making Framework, Buying Process, Customer Satisfaction, Customer Relationship Marketing, The Product: Meaning, Levels, Product Mix Decisions, Product Life Cycle, New Product Development, Pricing, Objectives and Strategies.

Unit 3: Promotion and Distribution: Marketing Information Systems and Marketing Research, Promotion: Meaning, Types and Strategies, Channel Management, Supply Chain Management, Sales – Force Management and Process of Personal Selling.

Unit 4: Global Marketing: Contemporary Issues in Marketing: Green Marketing: Global Marketing, Retailing in India, Brand Management, Competitive Strategies, Customer Loyalty.

Subject Name: HUMAN RESOURCE MANAGEMENT

Unit 1: Introduction: Meaning, Definition, Scope, Evolution, Objectives of HRM, Qualities of HR / Personnel Manager, Role of Human Resource Manager, Development of HRM in India, Distinction between HRM and PM.

Unit 2: Human Resource Planning: Meaning, Objectives, Benefits of Human Resources Planning, Process and Problems in Human Resources Planning, Recent Implication in HRP, Staffing, Recruitment, Types of Tests.

Unit 3: Training and Development: Meaning, Definition, Need, Advantages, Objectives, Importance of Training, Types of Training, Difference between Training and Development, Education Classification of Training Methods, Executive Development, and Knowledge Management.

Unit 4: Trade Unions: Meaning, Characteristics, Functions and Role of Trade Unions, Union Structure, Wages and Salary Administration, Wage Boards and Pay Commissions, Wage Incentives, Quality Circles, Industrial Democracy, Socio – Technical Systems.

Unit 5: Performance Evaluation: Performance Appraisal, Promotions, Transfer Demotions, Separation, Grievance Procedure.

Subject Name: ORGANIZATION, COMPETITION & ENVIRONMENT

Unit 1: Microeconomic Foundation: Production and Costs, Production Theory, Cost Theory, Long – Run Production and Costs, Economics of Scale, Economics of Scope, Demand, Revenue, Elasticity and Profit Maximization, Elasticity, Theory of Perfect Competition and Monopoly, Efficiency and Welfare Properties of perfect competition and monopoly, Theory of Monopolistic Competition.

Unit 2: Market Structure Firm: Firm Strategy and Performance, Empirical Tests of the SCP Paradigm, Strategic Groups, And Sources of Variation in Profitability: Industry Corporate and Business Unit Effects, The New Empirical Industrial Organization (NEIO), Industry Level Studies, Firm Level Studies.

Unit 3: Pricing: Cost Plus Pricing, Price Discrimination, first – Degree Price Discrimination, second – Degree Price Discrimination, third – Degree Price Discrimination, Peak Load Pricing, Transfer Pricing, Transfer Pricing with no external market for the Product.

Third Semester

Third Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Soft Skills for Business	4	100
2	Corporate Accounting	5	100
3	Consumer Behavior	5	100
4	Corporate Environment	5	100
5	Business Ethics	5	100
Total		**24**	

Subject Name: SOFT SKILLS FOR BUSINESS

Unit 1: ELEMENTS OF COMMUNICATION

Meaning, Importance, Objectives & Principles of Communication, Process, impediments of effective communication, Strategies for effective communication. Types and forms of communication Nonverbal Communication-Body Language, Gestures, Postures, Facial Expressions, Dress codes, The Cross Cultural Dimensions of Business Communication, Listening & Speaking, Techniques of Eliciting Response, Probing Questions, Observation, Business and social etiquette.

Unit 2: PUBLIC SPEAKING

Importance of Public Speaking and Speech Composition - Principles of Effective Speaking& Presentations. Technical speeches & Non-technical presentations. Speech for introduction of a speaker - Speech for vote of thanks -Occasional speech - Theme speech. Moderating programs - Use of Technology

Unit 3: INTERVIEW TECHNIQUES 08 Hrs

Importance of Interviews, Art of conducting and giving interviews, Placement interviews - discipline interviews - Appraisal interviews – Exit interviews.

Unit 4: MEETINGS 08Hrs

Importance of Meetings -Opening and Closing Meetings - Participating and Conducting Group discussions. Brain Storming, e– Meetings, preparing agenda and minutes of the meeting

Unit 5: BUSINESS COMMUNICATION 16Hrs

Business Letters: Inquiries, Circulars, Quotations, Orders, Acknowledgments Executions, Complaints, Claims & Adjustments, Collection letter, Banking correspondence, Agency correspondence, Bad news and persuading letters, Sales letters, Job application letters - Bio-data, Covering Letter, Interview Letters,Letter of Reference. Memos, Minutes, Circulars &Notices.

SKILL DEVELOPMENT

1. Conduct a mock meeting and draft minutes of the meeting.
2. Draft a letter of enquiry to purchase a laptop.
3. Draft your bio-data.
4. Prepare your Career Plan.

BOOKS FOR REFERENCE

1. Rai & Rai – Soft Skill for Business, HPH
2. Santhosh Kumar – Soft Skill for Business, VBH.
3. C.G.G Krishnamacharyulu & Lalitha :Soft Skills of Personality Development, HPH.
4. Lesikar, R.V. & Flatley, M.E. (2005). Basic Business Communication Skills for Empowering the InternetGeneration. Tata McGraw Hill Publishing Company Ltd., New Delhi.
5. Rai & Rai: Business Communication Himalaya Publishing House
6. Rajkumar, Basic of Business Communication
7. Ludlow, R. & Panton, F.(1998). The Essence of Effective Communications. Prentice Hall of India Pvt.Ltd.
8. M.S. Rao : Soft Skills – Enhancing Employability I.K. International PH.
9. Rao & Das : Communication Skills, I.K. International PH.
10. Adair, J. (2003). Effective Communication. Pan McMillan.
11. Thill, J. V. & Bovee, G. L. (1993). Excellence in Business Communication. McGraw-Hill, New York.
12. Bowman, J.P. & Branchaw, P.P. (1987). Business Communications: From Process to Product. DrydenPress, Chicago.
13. Sharma S.P. & Others, Business Communication, VBH.
14. Banerjee : Soft Skills Business and Professional Communication, I.K. International

Subject Name: CORPORATE ACCOUNTING

Unit 1: COMPANY FINAL ACCOUNTS

Statutory Provisions regarding preparation of Company Final Accounts – Treatment of Special Items – Managerial Remuneration – Tax deducted at source – Advance payment of Tax – Provision for Tax – Depreciation – Interest on debentures – Dividends – Rules regarding payment of dividends (Theory only)

– Transfer to Reserves – Preparation of Profit and Loss Account and Balance Sheet as per Section 219(1)(b) (IV) and form 23AB. Abridged Profit and Loss Account – Abridged Balance Sheet (Vertical Form).

Unit 2: FINANCIAL STATEMENTS ANALYSIS 10 Hrs

Analysis of financial statements – comparative statements, comparative income statement, comparative Balance sheet – common size statements – Common size income statement, common size Balance Sheet

– Trend percentages. Reporting to management – Management Decision and Analysis.

Unit 3: VALUATION OF GOODWILL 8Hrs

Meaning – Circumstances of Valuation of Goodwill – Factors influencing the value of Goodwill – Methods of Valuation of Goodwill - Average Profit Method – Super Profit Method – Capitalization of Super Profit Method – Annuity Method – Capitalization of Profit Method.

Unit 4: VALUATION OF SHARES 8 Hrs

Meaning – Need for Valuation – Factors Affecting Valuation – Methods of Valuation – Asset Backing or Intrinsic Value Method – Yield Method – Earning Capacity Method – Fair Value Method - Rights Issue and Valuation of Rights Issue.

Unit 5: HOLDING COMPANY ACCOUNTS

Introduction – Meaning of Holding Company – Subsidiary Company – Steps – Pre Acquisition Profits – Post Acquisition Profits – Minority Interest – Cost of Control or Capital Reserve – Unrealized Profit – Mutual Indebtedness – Preparation of Consolidated Balance Sheet (As per AS21).

SKILL DEVELOPMENT

- Collect and fill the share application form of a limited Company.
- Collect a Prospectus of a company and identify the reasons to invest or not to invest in shares.
- List the various functions of underwriters.
- Collect annual report of a Company and List out its assets and Liabilities.
- Collection of latest final accounts of a company and find out the net Asset value of shares
- List out the conditions to be fulfilled for redemption of Preference shares.

BOOKS FOR REFERENCE

1. Anil Kumar - Marriappa – Corporate Accounting, HPH.
2. M.A.Arunachalam & K.S.Raman: Corporate Accounting – II, HPH.
3. Dr. S.N. Maheswari , Financial Accounting, Jain Book Depot.

4. V.K. Goyal: Corporate Accounting, PHI.
5. Soundrarajan A & K. Venkataramana, Corporate Accounting, SHBP.
6. S. P. Jain and K. L. Narang – Corporate Accounting, Kalyani Publishers.
7. SP Iyengar, Advanced Accountancy, Sultan Chand and Sons, New Delhi.
8. R L Gupta, Advanced Accountancy, Sultan Chand and Sons, New Delhi.

Subject Name: CONSUMER BEHAVIOR

Unit 1: INTRODUCTION

Introduction to Consumer Behaviour - A managerial & consumer perspective; Need to study Consumer Behaviour; Applications of consumer behaviour knowledge; current trends in Consumer Behaviour; Market segmentation & consumer behaviour.

Unit 2: INDIVIDUAL DETERMINANTS OF CONSUMER BEHAVIOUR

Consumer needs & motivation; personality and self-concept; consumer perception; learning & memory; nature of consumer attitudes; consumer attitude formation and change.

Unit 3: ENVIRONMENTAL DETERMINANTS OF CONSUMER BEHAVIOUR

Family influences; Influence of culture; subculture & cross cultural influences; group dynamics and consumer reference groups; social class & consumer behaviour.

Unit 4: CONSUMER'S DECISION MAKING PROCESS

Problem recognition; Search & Evaluation; Purchase processes; Post-purchase behaviour; personal influence& opinion leadership process; Diffusion of innovations; Models of Consumer Behaviour; Researching Consumer behaviour; Consumer research process.

Unit 5: CONSUMER SATISFACTION & CONSUMERISM

Concept of Consumer Satisfaction; Working towards enhancing consumer satisfaction; sources of consumer dissatisfaction; dealing with consumer complaint. Concept of consumerism; consumerism in India; The Indian consumer; Reasons for growth of consumerism in India; Consumer protection Act 1986.

SKILL DEVELOPMENT:

1. Conduct an informal interview of a local retail store owner and determine what demographic and socio economic segments the store appears to satisfy. How did the owner select this segment or segments?
2. Conduct formal interview to the managers of three retail-clothing stores. Determine the degree to which they believe consumer's personality and self-image are important to the marketing activities of the stores.
3. Visit three local restaurants and assess how each attracts clientele in different stages of the family life cycle.
4. You are the owner of two furniture stores, one catering to upper-middle class consumers and the other to lower-middle class consumers. How do social class differences influence each store's

   o Product lines & styles

   o Advertising media selection

- The copy & communication styles used in the advertisements
- Payment policies

5. For each of the following Products & services, indicate who you would go to for information andadvice;
   - The latest fashion in clothes
   - Banking
   - Air travel
   - Vacation destinations
   - A personal computer
6. For each situation; indicate the person's relationship to you and your reasons for selecting him/heras the source of information and advice.

BOOKS FOR REFERENCE:

1. Leon. G. Schiffman & Leslve Lazer Kanuk; Consumer behaviour; 6th Edition; PHI, New Delhi, 2000.
2. Suja.R.Nair, Consumer behaviour in Indian perspective, First Edition, Himalaya Publishing House,Mumbai, 2003.
3. Batra/Kazmi; Consumer Behaviour.
4. David. L. Loudon & Albert J. Bitta; Consumer Behaviour; 4th Edition, McGraw Hill, Inc; New Delhi,1993.
5. K. Venkatramana, Consumer Behaviour, SHBP.
6. Assael Henry; Consumer behaviour and marketing action; Asian Books(P) Ltd, Thomson learning, 6thEdition; 2001.
7. Jay D. Lindquist & M. Joseph Sirgy, Shopper, Buyer and Consumer Behaviour, 2003.
8. Blackwell; Consumer Behaviour, 2nd Edition.
9. S.A.Chunawalla : Commentary on Consumer Behaviour, HPH.
10. Sontakki; Consumer Behaviour, HPH.

Subject Name: CORPORATE ENVIRONMENT

Unit 1: FORMATION OF COMPANY

Promotion of Company – Promotion – Incorporation – Capital Subscription and Certificate of Commencement of Business. **Memorandum of Association** – Definition – Clauses.

Articles of Association – Definition – Contents – Distinction between Memorandum of Association and Articles of Association – Alteration of Memorandum of Association and Articles of Association. **Prospectus** Meaning – Contents – Statement in Lieu of Prospectus. Corporate Social Responsibility initiatives under Companies Act 2013 (Section 135)

Unit 2: CAPITAL OF COMPANY

Share Capital – Meaning of Shares – Kinds of Shares – Merits and Demerits of Shares. Debentures –
Meaning – Features – Types – Merits and Demerits, Listing of Shares.

Unit 3: COMPANY MEETINGS

Meaning and Definition – Types of Meeting – Statutory Meeting – Annual General Meeting –
Extraordinary General Meeting – Board Meeting and Resolutions.

Unit 4: COMPANY SECRETARY

Meaning and Definition – Position – Appointment – Rights – Duties – Liabilities – Qualification and Removal of Company Secretary.

Unit 5: WINDING UP OF COMPANIES

Modes of winding up – commencement of winding up – consequences –official liquidator – powers andduties of liquidator.

SKILL DEVELOPMENT

1. Drafting of Memorandum of Association, Drafting of Articles of Association.
2. Drafting Notice of Company Meetings – Annual, Special, Extraordinary and Board meetings.
3. Drafting Resolutions of various meetings – different types.
4. Chart showing Company's Organization Structure.
5. Chart showing different types of Companies.
6. A case study on CSR initiatives of any one company

BOOKS FOR REFERENCE

1. Maheshwari & Maheshwari, Elements of Corporate Laws, Himalaya Publishers
2. Dr. P.N. Reddy and H.R. Appanaiah, Essentials of Company Law and Secretarial Practice, HimalayaPublishers.
3. M.C. Shukla & Gulshan, Principles of Company Law, S. Chanda & Co.
4. Pradeep K. Shinde, Corporate Environment, VBH.
5. C.L. Bansal, Business & Corporate law, Excel Books.
6. N.D. Kapoor, Company Law and Secretarial Practice, Sultan Chand & Sons.
7. S.S Gulshan, Company Law, New Age International.
8. M.C. Bhandari, Guide to Company Law Procedures, Bhandari Publications.
9. S.C. Kuchal, Company Law and Secretarial Practice, Chaitanya Publishing.
10. K. Venkataramana, Service Management, SHBP.

Subject Name: BUSINESS ETHICS

Unit 1: BUSINESS ETHICS

Introduction – Meaning - Scope – Types of Ethics – Characteristics – Factors influencing Business Ethics
– Importance of Business Ethics - Arguments for and against business ethics- Basics of business ethics -Corporate Social Responsibility – Issues of Management – Crisis Management

Unit 2: PERSONAL ETHICS

Introduction – Meaning – Emotional Honesty – Virtue of humility – Promote happiness – karma yoga –

proactive – flexibility and purity of mind.

Unit 3: ETHICS IN MANAGEMENT

Introduction – Ethics in HRM – Marketing Ethics – Ethical aspects of Financial Management – TechnologyEthics and Professional ethics.

Unit 4: ROLE OF CORPORATE CULTURE IN BUSINESS

Meaning – Functions – Impact of corporate culture – cross cultural issues in ethics

Unit 5: CORPORATE GOVERNANCE

Meaning, scope, composition of BODs, Cadbury Committee, various committees, reports on corporate governance, scope of Corporate Governance, Benefits and Limitations of Corporate Governance with living examples.

SKILL DEVELOPMENT

1. State the arguments for and against business ethics
2. Make a list of unethical aspects of finance in any organization
3. List out ethical problems faced by managers
4. List out issues involved in Corporate Governance.
5. List out unethical aspects of Advertising

BOOKS FOR REFERENCE

1. Murthy CSV: Business Ethics and Corporate Governance, HPH
2. Bholananth Dutta, S.K. Podder – Corporation Governance, VBH.
3. Dr. K. Nirmala, Karunakara Readdy: Business Ethics and Corporate Governance, HPH
4. H.R.Machiraju: Corporate Governance
5. K. Venkataramana, Corporate Governance, SHBP.
6. N.M.Khandelwal : Indian Ethos and Values for Managers
7. S Prabhakaran; Business ethics and Corporate Governance
8. C.V. Baxi: Corporate Governance
9. R. R. Gaur, R. Sanghal, G. P. Bagaria; Human Values and Professional ethics
10. B O B Tricker, Corporate Governance; Principles, Policies and Practices
11. Michael, Blowfield; Corporate Responsibility
12. Andrew Crane; Business Ethics
13. Ghosh; Ethics in Management and Indian ethos.

Fourth Semester

Fourth Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Business Research Methods	5	100
2	Financial Management	5	100
3	Services Management	5	100
4	Banking Regulations & Operations	4	100

5	Cost Accounting	5	100
Total		**24**	

Subject Name: BUSINESS RESEARCH METHODS

Unit 1: INTRODUCTION TO RESEARCH

Meaning – Objectives – Types of Research – Scope of Research – Research Approaches – Research Process – Research Design – Research Methods Vs Research Methodology - Steps in Research – ProblemFormulation – Statement of Research Objective – Exploratory – Descriptive – Experimental Research.

Unit 2: METHODS OF DATA COLLECTION

Observational and Survey Methods – Field Work Plan - Administration of surveys - Training fieldinvestigators - Sampling methods - Sample size.

Unit 3: TOOLS FOR COLLECTION OF DATA

Questionnaire Design; Attitude measurement techniques – Motivational Research Techniques –
Selection of Appropriate Statistical Techniques

Unit 4: STATISTICAL METHODS

Tabulation of data - Analysis of data –Testing of Hypothesis, Advanced techniques – ANOVA, Chi-Square
- Discriminant Analysis - Factor analysis, Conjoint analysis - Multidimensional Scaling - Cluster Analysis (Concepts Only).

Unit 5: REPORT WRITING

Types of Reports, Business, Technical and Academic Report writing – Methodology Procedure – Contents
– Bibliography

SKILL DEVELOPMENT

- Illustrate different types of samples with examples
- Construct a questionnaire for collection of primary data keeping in mind the topic chosen forresearch
- Narrate your experience using observation technique
- diagrammatically present the information collected through the questionnaire

BOOKS FOR REFERENCE

1. O.R.Krishnaswamy; Research methodology in Social Sciences, HPH, 2008.
2. R. Divivedi: Research Methods in Behavior Science, Macmillan India Ltd., 2001.
3. J.K. Sachdeva: Business Research Methodology HPH
4. S.N. Murthy, V. Bhojanna: Business Research Methods Excel Books
5. Levin &Rubin: Statistics for Management, Prentice Hall of India, 2002
6. Gupta S; Research Methodology and Statistical Techniques, Deep & Deep Publication (P) Ltd., 2002
7. Thakur D: Research Methodology in Social Sciences, Deep & Deep Publications (P) Ltd.,1998.

8. Tripathi P.C: A Textbook of Research Methodology, Sultan Chand & Sons, 2002.
9. Cooper: Business Research Methods 6th edition, MC Graw Hill,
10. C.R. Kothari, Research Methodology, Vikas Publications
11. Usha Devi N, Santhosh Kumar - Business Research Methodology

Subject Name: FINANCIAL MANAGEMENT

Unit 1: INTRODUCTION TO FINANCIAL MANAGEMENT 10 Hrs

Introduction – Meaning of Finance – Business Finance – Finance Function – Aims of Finance Function – Organization structure of finance - Financial Management – Goals of Financial Management – Financial Decisions – Role of a Financial Manager – Financial Planning – Steps in Financial Planning – Principles of a Sound Financial Planning.

Unit 2: TIME VALUE OF MONEY

Introduction – Meaning & Definition – Need – Future Value (Single Flow – Uneven Flow & Annuity) – Present Value (Single Flow – Uneven Flow & Annuity)– Doubling Period – Concept of Valuation – Valuation of Bonds & Debentures – Preference Shares – Equity Shares – Simple Problems.

Unit 3: FINANCING DECISION AND INVESTMENT DECISION

Financing Decisions: Introduction – Meaning of Capital Structure – Factors influencing Capital Structure

– Optimum Capital Structure – EBIT – EBT – EPS – Analysis – Leverages – Types of Leverages – Simple Problems.

Investment Decisions: Introduction – Meaning and Definition of Capital Budgeting – Features – Significance – Process – Techniques – Payback Period – Accounting Rate of Return – Net Present Value – Internal Rate of Return – Profitability Index - Simple Problems

Unit 4: DIVIDEND DECISION

Introduction – Meaning and Definition – Determinants of Dividend Policy – Types of Dividends –
Provisions under Campiness Act in relation to dividends.

Unit 5: WORKING CAPITAL MANAGEMENT

Introduction – Concept of Working Capital – Significance of Adequate Working Capital – Evils of Excess or Inadequate Working Capital – Determinants of Working Capital – Sources of Working Capital –Cash Management – Receivables Management – Inventory Management.

SKILL DEVELOPMENT

1. Draw the organization chart of Finance Function
2. Illustrate operating cycle for at least 2 companies of your choice.
3. Evaluate the NPV of an investment made in any one of the capital projects with imaginary figures for 5years.
4. Prepare an ageing schedule of debtors with imaginary figures.
5. Capital structure analysis of companies in different industries

BOOKS FOR REFERENCE

1. Reddy, Appananaih: Financial Management., HPH
2. Sudrashan Reddy – Financial Management, HPH.
3. Venkataraman R _ Financial Management, VBH.
4. S N Maheshwari, Financial Management., Sultan Chand.
5. R.M.Srivastava : Financial Management –Management and Policy, Himalaya Publishers.
6. Khan and Jain, Financial Management, Tata McGraw Hill.
7. Dr. K.V. Venkataramana, Financial Management, SHB Publications.
8. Sudhindra Bhatt: Financial Management, Excel Books.
9. Sharma and Sashi Gupta, Financial Management, Kalyani Publication.
10. M.GangadharRao& Others: Financial Management, Himalaya Publishers.
11. I M Pandey, Financial Management, Vika Publication House.
12. Prasanna Chandra, Financial Management, Tata McGraw Hill.
13. K. Venkataramana, Financial Management, SHBP.
14. Dr. Alice Mani: Financial Management, SBH.

Subject Name: SERVICES MANAGEMENT

Unit 1: INTRODUCTION TO SERVICES MANAGEMENT 08 Hrs

Meaning of Services – Concepts - Characteristics of Services – Classification of Services – Growth of Service Sector.

Unit 2: SERVICES MARKETING 18Hrs

Meaning – Differences between Products and Services – Importance of Services Marketing – Marketing Mix for Services – 7 P"s (in detail) Managing Demand and Supply in Service Industry. Service Delivery Process: Role of Customer in Service delivery process- Quality issues in Services – GAP Model, Managing moments of Truth

Unit 3: TOURISM AND HOSPITALITY SERVICES

Introduction – Evolution of Tourism Industry – Concept and Nature of Tourism – Significance of Tourism Industry- Market segmentation in tourism- Marketing mix of Tourism - Recent Trends in Tourism. Hospitality Services: Types of Hotels –Types of Accommodation – Departments in Hotels – Customer care in Hospitality Industry.

Unit 4: BANKING AND INSURANCE SERVICES

Banking - Introduction – Traditional Services – Modern Services – Recent Trends in Banking Services.

Insurance - Introduction – Meaning and Definition of Insurance – Types of Insurance – Life Insurance – Products of Life Insurance – General Insurance – Types of General Insurance – Insurance Agents and other Intermediaries.

Unit 5: HEALTHCARE AND INFORMATION TECHNOLOGY ENABLED SERVICES (ITES)

Hospitals – Evolution of Hospital Industry – Nature of Service – Risk involved

in Healthcare Services – marketing of medical services – Hospital extension services – Pharmacy, nursing – Medical Transcription. ITES: Introduction – Growth, Types, Job opportunities in ITES.

SKILL DEVELOPMENT

1. Prepare a chart on conditions to be complied for Star Hotel Status.
2. Procure any two insurance policies (Xerox) and paste them in the record.
3. Visit and Travel and Tour agencies and prepare organization chart.
4. Interact with tourist operators and identify the areas of tourism management.
5. Prepare a chart showing customer service rendered by at least two MF. (Preferably a comparativechart)
6. Procedures of Railway ticket booking with specimen of reservation/cancellation slip.
7. Procedure for Air ticket booking both domestic and International.

BOOKS FOR REFERENCE

1. S.M. Jha: Services Marketing HPH
2. Dr. Shajahan. S; Service Marketing (Concept, Practices & Cases); Himalaya Publishing House;Mumbai; First Edition 2001.
3. Sunil B Rao – Service Management, VBH.
4. Shanker, Ravi; Services Marketing – the Indian Perspective; Excel Books, New Delhi; First Edition;2002
5. Dutta: Service Management, I.K. International
6. Cengiz Hakseveretal – "Service Management and Operations"; Pearson Education.
7. K. Venkataramana, Service

Management, SHBP. **Subject Name**:

BANKING REGULATIONS &

OPERATIONS**Unit 1:**

COMMERCIAL BANKS 08 Hrs

Introduction – Role of Commercial Banks – Functions of Commercial Banks – Primary Functions and Secondary Functions – Credit Creation of Commercial Banks – Investment Policy of Commercial Banks – Profitability of Commercial Banks. Regulation and Control of Commercial Banks by RBI

Unit 2: BANKER AND CUSTOMER RELATIONSHIP

Banker and Customer: Meaning of Banker and Customer – Banking Company – General and Special Relationships between Banker and Customer.

Types of Customers and Account holders: Procedure and Practice in opening and conducting the accounts of customers particularly individuals including minors - Joint Account Holders. Partnership Firms

- Joint Stock companies with limited liability-Executors and Trustees-Clubs and Associations-Joint Hindu Family

Unit 3: NEGOTIABLE INSTRUMENTS

Introduction – Meaning & Definition – Features – Kinds of Negotiable Instruments (Meanings only) – Cheques – Meaning & Definition – Features -

Parties – Crossing of cheques – types of crossing. Endorsements – Meaning – Essentials – Kinds of Endorsement.

Unit 4: PAYING BANKER AND COLLECTING BANKER

Paying Banker – Meaning – Precautions – Statutory Protection to the Paying Banker – Dishonor of Cheques – Grounds of Dishonor – Consequences of wrongful dishonor of Cheque.

Collecting Banker – Meaning – Duties & Responsibilities of Collecting Banker –Statutory Protection to Collecting Banker

Unit 5: PRINCIPLES OF BANK LENDING

Different kinds of borrowing facilities granted by banks - Loans, Cash Credit, Overdraft, Bills Purchased, Bills Discounted, Letters of Credit - Types of Securities – NPA (Meaning only). Sound principles of Bank Lending.

SKILL DEVELOPMENT

1. Collect and fill account opening form of SB A/c or Current A/c
2. Collect and fill pay in slip of SB A/c or Current A/c.
3. Draw specimen of Demand Draft.
4. Draw different types of endorsement of cheques.
5. Past specimen of Travelers Cheques / Gift Cheques / Credit Cheques.
6. List customer services offered by atleast 2 banks of your choice.

BOOKS FOR REFERENCE

1. Gordon &Natrajan: Banking Theory Law and Practice, HPH.
2. Maheshwari. S.N.: Banking Law and Practice, Kalyani Publishers
3. Gagendra Naidu, S. K. Poddar, Law and Practice of Banking, VBH.
4. M. Prakash – Banking Regulation & Operations, VBH.
5. Tannan M.L: Banking Law and Practice in India, Wadhwa and company
6. P.SubbaRao ; Bank Management, HPH.
7. V. Iyengar; Introduction to Banking, Excel Books.
8. Kothari N. M: Law and Practice of Banking.
9. Shekar. K.C: Banking Theory Law and Practice, VBH.

Subject Name: COST ACCOUNTING

Unit 1: INTRODUCTION TO COST ACCOUNTING

Introduction – Meaning & Definition of Cost, Costing and Cost Accounting – Objectives of Costing - Comparison between Financial Accounting and Cost Accounting – Application of Cost Accounting – Designing and Installing a Cost Accounting System – Cost Concepts - Classification of Costs – Cost Unit – Cost Center – Elements of Cost – Preparation of Cost Sheet – Tenders and Quotations.

Unit 2: MATERIAL COST CONTROL

Meaning – Types – Direct Material – Indirect Material - Material Control – Purchasing Procedure – Store Keeping – Techniques of Inventory Control – Setting of Stock Levels – EOQ – ABC Analysis – VED Analysis

– Just In-Time – Perpetual Inventory System – Documents used in Material Accounting

- Methods of Pricing Material Issues – FIFO – LIFO – Weighted Average Price Method and Simple Average Price Method.

Unit 3: LABOUR COST CONTROL

Meaning – Types – Direct Labour – Indirect Labour – Timekeeping – Time booking – Idle Time – Overtime
– Labour Turn Over. Methods of Labour Remuneration - Time Rate System – Piece Rate System – Incentive Systems – Halsey plan – Rowan Plan – Taylor's differential Piece Rate System and Merrick's Differential Piece Rate System – Problems

Unit 4: OVERHEAD COST CONTROL

Meaning and Definition – Classification of Overheads – Procedure for Accounting and Control of Overheads – Allocation of Overheads – Apportionment of Overheads – Primary Overhead Distribution Summary – Secondary Overhead Distribution Summary – Repeated Distribution Method and Simultaneous Equations Method – Absorption of Factory Overheads – Methods of Absorption – MachineHour Rate – Problems.

Unit 5: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

Need for Reconciliation – Reasons for differences in Profit or Loss shown by

Cost Accounts and Profit orLoss shown by Financial Accounts – Preparation of

Reconciliation Statement and Memorandum Reconciliation Account.

SKILL DEVELOPMENT

1. Classification of costs incurred in the making of a product.
2. Identification of elements of cost in services sector.
3. Cost estimation for the making of a proposed product.
4. Documentation relating to materials handling in a company.
5. Collection and Classification of overheads in an organization.
6. Discuss the reasons for LTO in organizations.

BOOKS FOR REFERENCE

1. M. N. Arora: Cost Accounting, HPH
2. J.Madegowda: Advanced Cost Accounting, HPH.
3. N.K. Prasad: Cost Accounting, Book Syndicate.
4. Gouri Shankar: Practical Costing, HPH.
5. Khanna Pandey & Ahuja : Practical Costing, Sultan Chand.
6. K. S. Thakur: Cost Accounting, New Century Book House Pvt. Ltd.
7. M.L. Agarwal: Cost Accounting, Sahithya Bhawan Publications.
8. Palaniappan & Harihara : Cost Accounting I.K. International
9. Jain & Narang: Cost Accounting, Kalyani Publishers.
10. S.P. Iyengar: Cost Accounting, Sultan Chand.
11. S.N. Maheshwari: Cost Accounting, Mahaveer Publishers.

12. Horngren: Cost Accounting – A Managerial Emphasis, Prentice Hall.

13. Dr.A. Sundra Rajan & Dr. K. Venkataramana, SHB Publications.

14. R.G. Saha & Others – Cost Accounting

15. V. Rajesh Kumar & R.K. Sreekantha, Cost Accounting – I, Vittam Publications.

Fifth Semester

Fifth Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	Entrepreneurial Management	5	100
2	Computer Applications in Business	4	100
3	Investment Management	5	100
4	International Finance	5	100
5	Business Regulations	5	100
Total		**24**	

Subject Name: ENTREPRENEURIAL MANAGEMENT

Unit 1: ENTREPRENEURSHIP

Introduction – Meaning & Definition of Entrepreneurship, Entrepreneur & Enterprise – Differences between Entrepreneurship, Entrepreneur & Enterprise – Functions of Entrepreneur – Role of Entrepreneur for Economic Development - Factors influencing Entrepreneurship - Pros and Cons of being an Entrepreneur – Differences between Manager and Entrepreneur – Qualities of an Entrepreneur – Types of Entrepreneurs. Entrepreneurship Development- Need – Problems – National and State Level Institutions

Unit 2: SMALL SCALE INDUSTRIES

Small Scale Industries - Tiny Industries - Ancillary Industries - Cottage Industries – Definition – Meaning - Product Range - Capital Investment - Ownership Patterns - Importance and Role played by SSI in the development of the Indian Economy - Problems faced by SSI‟s and the steps taken to solve the problemsPolicies Governing SSI‟s

Unit 3: STARTING A SMALL INDUSTRY

Concept of Business opportunity, scanning the environment for opportunities, evaluation of alternatives and selection based on personal competencies. - An overview of the steps involved in starting a business venture – Location, Clearances and Permits required, Formalities, Licensing and Registration Procedures

- Assessment of the market for the proposed project - Importance of financial, technical and social feasibility of the project.

Unit 4: PREPARING THE BUSINESS PLAN (BP)

Business Plan, Importance of BP, Preparation of BP, Typical BP format - Financial aspects of the BP - Marketing aspects of the BP - Human Resource aspects of the BP - Technical aspects of the BP - Social aspects of the BP -

Preparation of BP - Common pitfalls to be avoided in preparation of a BP

Unit 5: IMPLEMENTATION OF THE PROJECT AND SICKNESS IN SSIs

Financial assistance through SFC‟s, SIDBI, Commercial Banks, KSIDC, KSSIC, IFCI, - Non-financial assistance from DIC, SISI, EDI, SIDO, AWAKE, TCO, TECKSOK, KVIC - Financial incentives for SSI‟s and Tax Concessions - Assistance for obtaining Raw Material, Machinery, Land and Building and Technical Assistance - Industrial Estates – Role and Types. Sickness: Meaning and definition of a sick industry - Causes of Industrial Sickness - Preventive and Remedial Measures for Sick Industries

SKILL DEVELOPMENT

1. Preparation of a Project report to start a SSI Unit.
2. Preparing a letter to the concerned authority-seeking license to the SS Unit, you propose to start.
3. Format of a business plan.
4. A Report on the survey of SSI units in the region where college is located.
5. Chart showing financial assistance available to SSI along with rates of interest.
6. Chart showing tax concessions to SSI both direct and indirect.
7. Success stories of Entrepreneurs in the region.

BOOKS FOR REFERENCE

1. Vasant Desai: The Dynamics of Entrepreneurship Development and Management, HPH
2. Mark. J. Dollinger, Entrepreneurship – Strategies and Resources, Pearson Edition.
3. Satish Taneja: Entrepreneur Development, HPH.
4. UdaiPareek and T.V. Rao, Developing Entrepreneurship
5. S.V.S. Sharma, Developing Entrepreneurship, Issues and Problems, SIET, Hyderabad
6. Srivastava, A Practical Guide to Industrial Entrepreneurs, Sultan Chand.
7. Government of India, Report of the committee on small and medium entrepreneurs, 1975
8. VidyaHattangadi ; Entrepreneurship, HPH.
9. N.V.R. Naidu : Management and Entrepreneurship, I.K. International
10. Bharusali, Entrepreneur Development,
11. K. Venkataramanappa, Entrepreneurial Development, SHB Publications
12. Anil Kumar : Small Business and Entrepreneurship, I.K. International
13. Rekha & Vibha – Entrepreneurial Management, VBH.

Subject Name: COMPUTER APPLICATIONS IN BUSINESS

Unit 1: INTRODUCTION TO INFORMATION SYSTEM

Meaning and definition of system, information and information system – business information system –Features of Information system – Uses of Business Information Systems, Users of Information Systems – Components of Business Information Systems.

Unit 2: TYPES OF INFORMATION SYSTEMS

Management Support Systems (MSS), Management Information systems, ,

Transaction Processing systems, Decision Support Systems (DSS), Group Decision Support System (GDSS), Office Automation system, Process Control systems, Executive Information systems, Levels of management and Information systems.

Unit 3: MS OFFICE

MS Word – editing a document- Formatting – Spell Checking – Page setup, using tabs, Tables and other features Mail Merge, MS Excel – building work sheet- data entry in work sheets, auto fill – working with simple problems- formula – statistical analysis, sort, charts, MS Power point – Design, Side Show – Presentation.

Unit 4: DATABASE MANAGEMENT SYSTEMS

Introduction- Purpose of Database Systems, Views of data, Data Models, Database language, Transaction Management, Storage Management, Database Administrator, Database Users, Overall System Structure, Different types of Database Systems

Unit 5: ACCOUNTING SOFTWARE

Introduction to Tally, opening new company, Safety of Accounts or Password, Characteristics, Making Ledger Accounts, writing voucher, voucher entry, making different types of voucher, correcting sundry debtors a sundry creditors accounts, preparation of Trail Balance, Accounts books, Cash Book, Bank Books, Ledger Accounts, Group Summary, Sales Register and Purchase Register, Journal Register, Statement of Accounts, & Balance Sheet.

SKILL DEVELOPMENT

- Maintain a Record on Practical's.

BOOKS FOR REFERENCE

1. James Obrein, Management Information Systems, Tata McGraw Hill
2. M. Suman _ Computer Application Business, VBH
3. R.G. Saha – Computer Application Business, HPH.
4. Amrutha Gowri & Soundrarajana A, Computer Application Business, SHBP.
5. Manjunath, GunduRao – Computer Business Applications, HPH.
6. Sudaimuthu& Anthony: Computer Applications in Business, HPH.
7. S. Perekar, Anindita Hazra; Computer Application in Business
8. Srivatasava : Enterprise Resource Planning I.K. International
9. S Sadagopan, Enterprise resource planning (ERP), Tata McGraw Hill
10. S.P. Rajagopal, Computer Application in Business
11. C.S.V.Murthy: Management Information, HPH

Subject Name: INVESTMENT MANAGEMENT

Unit 1: Introduction Investment Management

Investment management, nature and scope, investment avenues, types of financial assets and real assets, Security return and risk – Systematic and unsystematic risk - sources of risk, Measurement of risk and return, sources of investment information, Fixed income – securities – bonds, preference shares –

sources of risk, valuation, duration of bonds – theory of interest rates – yield curve, Bond innovations and their valuation.

Unit 2: Securities Analysis

Analysis of variable income securities, fundamental analysis – analysis of economy, industry analysis, company analysis – financial and non – financial, Equity valuation models, Options, futures, forwards, warrants, and their valuations, Technical analysis – Dow's theory, charts – Efficient market hypothesis and its implications, Tax aspects of investment, Securities Trading procedure. A Critical Survey ofsoftware packages for security analysis.

Unit 3: Portfolio Management

Meaning of portfolio management, portfolio analysis, why portfolios? Portfolio objectives, portfolio management process, selection of securities. Portfolio theory, Markowitz Model, Sharpe's single index model. Efficient frontier with Lending and borrowing, optimal portfolio capital Asset pricing model, Arbitrage pricing theory two factor and multi factor models.

Unit 4: Portfolio Management Strategies

Bond Portfolio Management strategies, Equity portfolio management strategies, strategies using derivatives, hedging. Portfolio revision – rebalancing plans, portfolio evaluation, Sharpe's index, Treynor's measure and Jenson's measure.

Unit 5: Mutual Funds

Mutual funds, Investors life cycle, Personal investment, Personal Finance, Portfolio Management of funds in banks, insurance companies, pension funds, International investing, International funds management, emerging opportunities. A brief survey of software packages for Portfolio Management.

Skill Development

Seminars, Group Discussion and Case Studies on various aspects of syllabus.

Books for Reference

1. Bombay Stock Exchange Directory.
2. Donald E. Fischer and Ronald J. Jordan: Security Analysis and Portfolio Management, Pearson Ed.
3. Stanely S.C. Haung Maury Stall: Investment Analysis and Management, Allyn and Bacon Inco., Massachustes.
4. Jerome B. Cohen and Edward D. Zinbarg Etal: Investment Analysis and Portfolio Management, Ricchard D., Irwin Inc., Illinois.
5. J.C. Fancis: Investment Analysis and Management
6. Panduan Puneethavarty, Securities Analysis and Portfolio Management, Vikas Pub. House.
7. Fuller & Farrel, Modern Investment and Security Analysis, McGraw Hill International.

Subject Name: INTERNATIONAL FINANCE

UNIT – 1: INTRODUCTION TO INTERNATIONAL FINANCE

Issues involved in International Business and Finance, methods of payment, International Monetary system – Fundamental terms and concepts – Home currency – foreign currency – direct quote – indirectquote – bid and ask, spot and

forward rate - appreciation and depreciation – cross currency rates.

UNIT – 2: FOREIGN EXCHANGE AND BALANCE OF PAYMENTS

Forex Market & Its Intermediaries, ADR, Foreign Exchange Rate, Theories of Foreign Exchange Rate Determination. Components of Balance of Payments – Disequilibrium in the balance of payments- methods of correction of disequilibrium.

UNIT – 3: INSTRUMENTS IN INTERNATIONAL FINANCIAL MARKETS

Meaning-Definition-International Financial Markets-Globalization of Capital markets, Innovation in foreign securities and International Portfolio Management.

UNIT – 4: FOREIGN EXCHANGE RISK

Exchange risks – Hedging, Forward, Future, Swaps Options, -Valuation of future and swaps- valuation ofoptions and efficiency of the exchange market.

UNIT – 5: INTERNATIONAL FINANCIAL INSTITUTIONS AND LIQUIDITY

The IMF, International liquidity and SDR's (special drawing rights) – International bank for reconstruction and development (World Bank), International development association, International investment guarantee agency.

SKILL DEVELOPMENT:

- Visit any authorized dealers' establishments and understand their activities.
- Analyze the trend of FDI into India in the last five years.

BOOKS FOR REFERENCE:

1. Avadhani B.K, International Finance Theory and Practice, HPH
2. Aswathanarayana T & K. Rajeswari – International Finance – VBH
3. K. Venkataramana, International Finance, SHBP.
4. Harris Manville, International Finance.
5. Madhu Vij, International Finance, Excel Books
6. Keith Pibean, International Finance, McMillan
7. Timothy Carl Kesta, Case and Problems in International Finance.
8. R.M Srivastava , Multinational Financial Management, Pragathi Publications
9. P.A. Apte, International Financial Management, TMH
10. Somanath : International Financial Management I.K. Intl
11. Levi, International Marketing Management.
12. Bandar D.C, International Finance.
13. Murthy E.N, International Finance & Risk Management.
14. M.L. Verma, Foreign Trade & Management in India.
15. Rao and Chary, International Finance.

Subject Name: BUSINESS REGULATIONS

Unit 1: INTRODUCTION TO BUSINESS LAWS

Introduction, Nature of Law, Meaning and Definition of Business Laws, Scope and Sources of Business Law, Fundamental Rights and Directive Principle of State Policies, Principles having economic significance, Overview of Business Laws in India.

Unit 2: CONTRACT LAWS

Indian Contract Act, 1872: Definition of Contract, essentials of a valid contract (all essentials need to be explained in great detail), classification of contracts, breach of contract and remedies for breach of contract.

Indian Sale of Goods Act, 1930: Definition of contract of sale, essentials of contract of sale, conditions and warrantees, rights and duties of buyer, rights of an unpaid seller.

Unit 3: INFORMATION LAWS AND RTE

Right to Information Act, 2005: Objectives of the RTI Act, Scope, SuoMoto disclosure, Method of seeking information, Eligibility to obtain information, Authorities under the Act,.

Right to Education Act: Objectives of the RTE Act – Salient Features.

Unit 4: COMPETITION AND CONSUMER LAWS

The Competition Act, 2002: Objectives of Competition Act, the features of Competition Act, components of Competition Act, CCI, CAT, offences and penalties under the Act.

Consumer Protection Act, 1986: Definition of the terms consumer, consumer dispute, defect, deficiency, unfair trade practices and services. Consumer Protection Act, Consumer Redressal Agencies – District Forum, State Commission, National Commission, any two landmark judgments of the Supreme Court.

Unit 5: ECONOMIC AND ENVIRONMENTAL LAWS

FEMA 1999: Objects of FEMA, definition of important terms – authorized dealer, currency, foreign currency, foreign exchange, foreign security, Directorate of Enforcement, salient features of the FEMA, offences and penalties,

Environment Protection Act, 1986: Objects of the Act, definitions of important terms – environment, environment pollutant, environment pollution, hazardous substance and occupier, types of pollution, global warming, causes for ozone layer depletion, carbon trade, rules and powers of central government to protect environment in India.

SKILL DEVELOPMENT

1. Prepare a chart showing sources of business law and Indian Constitution Articles having economicsignificance.
2. Draft an agreement on behalf of an MNC to purchase raw materials indicating therein terms andconditions and all the essentials of a valid contract.
3. Draft an application to the Chief Information Officer of any government office seeking informationabout government spending.
4. Draft digital signature certificate.

5. Draft a complaint to District Consumer Forum on the deficiency of service in a reputed corporatehospital for medical negligence.
6. Collect leading cybercrimes cases and form groups in the class room and conduct group discussion.
7. Draft a constructive and innovative suggestions note on global warming reduction.

BOOK REFERENCE

1. K. Aswathappa, Business Laws, Himalaya Publishing House,
2. K.R. Bulchandni: Business Laws, HPH.
3. N.D. Kapoor, Business Laws, Sultan chand publications.
4. S.S. Gulshan, Business Law 3rd Edition, New Age International
5. S.C. Sharama& Monica : Business Law I.K. International
6. Tulsian Business Law , Tata McGraw-Hill Education
7. Dr. K. Venkataraman, SHB Publications.

Sixth Semester

Sixth Semester			
S. No.	**Name of Subject**	**Credits**	**Total Marks**
1	International Business	5	100
2	E-Business	5	100
3	Income Tax	5	100
4	Strategic Management	5	100
5	Employee Welfare & Social Security	4	100
Total		**24**	

Subject Name: INTERNATIONAL BUSINESS

Unit 1: INTRODUCTION TO INTERNATIONAL BUSINESS

Meaning and Definition of International Business – Theories of International Trade – Economic Theories
– Forms of International Business - Nature of International Business

Unit 2: MODES OF ENTRY INTO INTERNATIONAL BUSINESS

Mode of Entry – Exporting – Licensing – Franchising – Contract Manufacturing – Turn Key Projects – Foreign Direct Investment – Mergers, Acquisitions and Joint Ventures – Comparison of different modes of Entry.

Unit 3: GLOBALIZATION

Globalization: Meaning - Features – Stages –Production –Investment and Technology, Globalization –
Advantages and Disadvantages – Methods and Essential Conditions for Globalization.

MNC's and International Business: Definitions – Distinction between Indian Companies – MNC – GlobalCompanies and TNC – Organizational Transformations – Merits and Demerits of MNC‟s in India

Unit 4: INTERNATIONAL MARKETING INTELLIGENCE

Information required – Source of Information – International Marketing Information System andMarketing Research.

Unit 5: EXIM TRADE

Export Trade, Procedure, Steps & Documentation, Direction of India's Trade – Export Financing – Documents related to Export Trade – Export Marketing – Import Trade, Procedure, Steps, Documentations and Problems - EXIM Policy - Balance of Payment – Disequilibrium and Measures for Rectification - Institutions connected with EXIM Trade.

SKILL DEVELOPMENT

1. List any three MNC"s operating in India along with their products or services offered.
2. Prepare a chart showing currencies of different countries
3. Tabulate the foreign exchange rate or at least 2 countries for 1 month
4. Collect and Paste any 2 documents used in Import and Export trade.

BOOKS FOR REFERENCE

1. Dr. Aswathappa International Business, Tata McGraw Hill.
2. P. SubbaRao – International Business – HPH
3. Shyam Shukla; International Business, Excel Books.
4. Francis Cherunilam; International Business, Prentice Hall of India
5. MahuaDutta, International Business, I.K. Intl
6. J. Maskeri- International Business
7. Rosy Joshi; International Business, Kalyani Publishers.
8. Venkataramana. K, International Business, SHBP.
9. Subhasre S – International Business, HPH.

Subject Name: E-BUSINESS

UNIT 1: E-BUSINESS

Introduction, E-Commerce – definition, History of E-commerce, types of E-Commerce B to B etc. Comparison of traditional commerce and e-commerce. E-Commerce business models – major B to B, B to C model, Consumer-to-Consumer (C2C), Consumer-to-Business (C2B) model, Peer to-Peer (P2P) model – emerging trends. Advantages/ Disadvantages of e-commerce, web auctions, virtual communities, portals, e-business revenue models.

UNIT 2: SECURITY FOR E-BUSINESS

Security threats – An area view – implementing E-commerce security – encryption – Decryption, Protecting client computers E-Commerce Communication channels and web servers Encryption, SSL protocol, Firewalls, Cryptography methods, VPNs, protecting, networks, policies and procedures

UNIT 3: E-PAYMENTS

E-payment systems – An overview. B to C payments, B to B payments. Types of E- payment system – Credit card payment, debit cards, accumulating balance, online stored value payment systems, digital cash, digital (electronic) wallets, agile wallet, smart cards and digital cheques. Secure Electronic Transaction

(SET) protocol

UNIT 4: E-BUSINESS MARKETING TECHNOLOGIES

E-Commerce and marketing B to B and B to C marketing and branding strategies. Web transaction logs, cookies, shopping cart database, DBMS, SQL, data mining, CRM (customer relationship Management) system – permission marketing, affiliate marketing, viral marketing.

UNIT 5: CYBER LAWS

Legal Aspects of E-Business, Internet frauds – Cyber Laws. IT Act 2000 salient features.

SKILL DEVELOPMENT

- Visit Few Business Websites and note down in Practical Record Book

BOOKS FOR REFERENCE

1. Marriappa M – E- Commerce,
2. R. G. Saha, E-Business, HPH
3. M. Suman – E – Commerce & Accounting
4. Kalakota Ravi and A. B. Whinston : "Frontiers of Electronic Commerce", Addison
5. Watson R T :"Electronic Commerce – the strategic perspective." The Dryden press
6. Agarwala K.N and Deeksha Ararwala: "Business on the Net – Whats and Hows of E-Commerce"
7. Agarwala and Ararwala : "Business on the Net – Bridge to the online store front,"
8. Murthy CSV: "E. Commerce" Himalaya Publishing House Pvt.Ltd.
9. Diwan, Prag and Sharma, "Electronic Commerce – A manager guide to E-business", Vanity Books

International

10. P. Diwan, S. Sharma; "E-Commerce", Excel Books.
11. JanalD.S :"Online Marketing Hand book." Van Nostrand Reinhold Network
12. Kosiur David, "Understanding Electronic Commerce Microsoft", press Washing-ton.
13. Minoli and Minol, "Web Commerce Technology Handbook", TMH New Delhi.
14. Schneider Gary P, "Electronic Commerce- course Technology, Delhi.
15. Young Margaret Levine: "The complete reference to Internet", TMH.
16. C.S.Rayudu: "Ecommerce and E Business", HPH.
17. Kalakota Ravi: "E-business 2: Road map for success." Pearson Education Ltd.
18. Kalkota Ravi. "Electronics Commerce": A managers Guide.
19. Mariammal & Soundra Rajan, E-business, SHB.

Subject Name: INCOME TAX

Unit 1: INTRODUCTION TO INCOME TAX

Income Tax: Brief History - Legal Frame Work – Types of Taxes - Cannons of Taxation – Important Definitions: Assessment – Assessment Year – Previous Year – Exceptions to the general rule of Previous Year - Assesse – Person –

Income - Casual Income – Gross Total Income – Total Income – Agricultural Income

Residential Status: Determination of Residential Status of an individual (simple problems) - Incidence of Tax (Simple Problems on Computation of Gross Total Income).

Exempted Incomes: Introduction – Exempted Incomes U/S 10 (Restricted to Individual Assesse) – Only theory

Unit 2: INCOME FROM SALARY

Meaning & Definition – Basis of Charge – Allowances – Fully Taxable Allowances – Partly Taxable Allowances: House Rent Allowance, Entertainment Allowance, Transport Allowance, Children Education & Hostel Allowances - Fully Exempted Allowances – Perquisites – Tax Free Perquisites – Perquisites Taxable in all Cases: Rent free accommodation - Concessional accommodation, Personal obligations of the employee met by the employer – Perquisites Taxable in Specified Cases : Gardener, Sweeper, Gas, Electricity, Water and Motor car facility (when the motor car is owned or hired by the employer)– Provident Funds – Deductions from Salary U/S 16 – Problems on Income from Salary(excluding retirement benefits).

Unit 3: INCOME FROM HOUSE PROPERTY

Basis of Charge – Exempted Incomes from House Property – Annual Value – Determination of Annual Value – Loss due to Vacancy – Deductions from Annual Value – Problems on Income from House Property (Excluding Pre-Construction interest)

Unit 4: PROFITS AND GAINS FROM BUSINESS AND PROFESSION

Meaning and Definition of Business & Profession – Expenses & losses Expressly Allowed – Expenses and losses Expressly Disallowed – Expenses Allowed on Payment Basis - Problems on computation of income from Business of Sole Proprietor.

Unit 5: COMPUTATATION OF TOTAL INCOME

Income from **Capital Gains (**excluding exemptions **-** Theory only) **- Income from Other Sources** (Theory only) - Deductions **U/S 80 C, D & G**. Simple problems on Computation of Total income of an Individual

SKILL DEVELOPMENT

1. Form No. 49A (PAN) and 49B.
2. Filling of Income Tax Returns.
3. List of enclosures to be made along with IT returns (with reference to salary & H.P).
4. Preparation of Form 16.
5. Computation of Income Tax and the Slab Rates.
6. Computation of Gratuity.
7. Chart on perquisites.
8. List of enclosures to be made along with IT returns (with reference to salary and house propertyincomes)

BOOKS FOR REFERENCE

1. Dr. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxmann publication.
2. B.B. Lal: Direct Taxes, Konark Publisher (P) ltd.
3. Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.
4. Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons.
5. Gaur &Narang: Income Tax, Kalyani Publisher s
6. 7 Lecturer – Income Tax – VBH
7. Dr.V.Rajesh Kumar and Dr.R.K.Sreekantha: Income Tax – I, Vittam Publications

Subject Name: STRATEGIC MANAGEMENT

Unit 1: INTRODUCTION TO STRATEGIC MANAGEMENT

Introduction - Meaning and Definition – Need – Process of Strategic Management – Strategic Decision Making – Business Ethics – Strategic Management.

Unit 2: ENVIRONMENTAL APPRAISAL

The concept of Environment – The Company and its Environment – Scanning the Environment, Technological, Social, Cultural, Demographic, Political, Legal and Other Environments Forces. SWOT Analysis – Competitive Advantage – Value Chain Analysis.

Unit 3: STRATEGIC PLANNING

Strategic Planning Process – Strategic Plans during recession, recovery, boom and depression – Stability Strategy – Expansion Strategy – Merger Strategy – Retrenchment Strategy – Restructure Strategy – Levels of Strategy – Corporate Level Strategy – Business Level Strategy and Functional Level Strategy – Competitive Analysis – Porter's Five Forces Model.

Unit 4: IMPLEMENTATION OF STRATEGY

Aspects of Strategy Implementation – Project Manipulation – Procedural Implementation – Structural Implementation – Structural Considerations – Organizational Design and Change – Organizational Systems. Behavioral Implementation – Leadership Implementation – Corporate Culture – Corporate Policies and Use of Power. Functional and Operational Implementation – Functional Strategies – Functional Plans and Policies. Financial – Marketing – OPERATIONAL and Personnel dimensions of Functional Plan and Policies – Integration of Functional Plans and Policies.

Unit 5: STRATEGY EVALUATION

Strategy Evaluation and Control - Operational Control - Overview of Management Control – Focus on KeyResult Areas.

SKILL DEVELOPMENT

1. Present a chart showing Strategic Management Process.

2. Select any organization and undertake SWOT analysis.
3. Present strategy followed by an FMCG company in Indian Market.
4. Select any sector and make competitive analysis using Porter's five forces model.
5. List social responsibility action initiated by any one company.
6. Select any organization and identify the Key Result Areas

BOOKS FOR REFERENCE

1. Dr. Aswathappa, Business Environment for Strategic Management, Tata McGraw Hill.
2. Subbarao: Business Policy and Strategic Management, HPH.
3. Charles W.L Hill and Gareth R. Jones, Strategic Management an Integrated Approach, CengageLearning
4. Azhar Kazmi, Business Policy and Strategic Management, Tata McGraw Hill
5. C. AppaRao; Strategic Management and Business Policy, Excel Books.
6. Ghosh P.K., Business Policy and Strategic Planning and Management, Tata McGraw Hill.
7. Pillai, Strategic Management,
8. Lawerence, Business Policy and Strategic Management, Tata McGraw Hill.
9. Sathyashekar : Business Policy and Strategic Management, I.K International Publishing House Pvt.Ltd.

Subject Name: EMPLOYEE WELFARE & SOCIAL SECURITY

Unit 1: SOCIAL & LABOUR WELFARE

Social Welfare; Labour Welfare: Concept, Scope; Philosophy and Principles of Labour Welfare; Indian constitution and Labour Welfare; Labour Welfare Policy and Five Year Plans, Historical Development of Labour Welfare in India;

Unit 2: INDIAN LABOUR ORGANIZATION

Impact of ILO on Labour Welfare in India; Agencies of Labour Welfare and their Roles, Labour Welfare Programmes: Statutory and Non-Statutory, Extra Mural and Intra Mural. Welfare Centers; Welfare Officer: Role, Status and Functions.

Unit 3: SOCIAL SECURITY

Concept and Scope; Social Assistance and Social Insurance, Development of Social Security in India; SocialSecurity measures for Industrial Employees.

Unit 4: LABOUR ADMINISTRATION – 1

Evolution of Machinery for Labour Administration; Central Labour Administrative Machinery in India, Labour Administration in India.

Unit 5: LABOUR ADMINISTRATION – 2

Director General of Employment and Training; Director General of Factory Advice Service; Provident FundOrganization; ESI Schemes; Central Board for Workers‟ Education;

SKILL DEVELOPMENT:

1. Preparation of a list of statutory welfare measures by visiting industry
2. Preparation of a list of voluntary welfare measures by visiting industry
3. Preparation of list of social security measures by visiting industry

BOOKS FOR REFERENCE

1. Moorthy, M.V. Principles of Labour Welfare, Oxford & IBH Publishing Co., New Delhi.
2. Vaid, K.N. Labour Welfare in India, Shri Ram Centre for Industrial Relations and Human Resources, NewDelhi.
3. K. Venkataramana, Employee Welfare& Social Security, SHBP.
4. Sharma, A.M. Aspects of Labour Welfare and Social Security, Himalaya Publishing, House, Mumbai.
5. Ram Chandra P. Singh, Labour Welfare Administration in India, Deep & Deep Pub., New Delhi.
6. Punekar, S.D. Deodhar S.B., Sankaran, Saraswathi, Labour Welfare, Trade Unionism and IndustrialRelations, Himalaya Publishing House, Mumbai.
7. Pant, S.C., Indian Labour Problems, Chaitanya Publishing House, Allahabad.
8. Saxena, R.C., Labour Problems and Social Welfare, K. Nath & Co., Meerut.
9. Bhogiliwala, T.N. Economics of Labour & Industrial Relations, Sahitya Bhavan Publishing Agra.
10. Memoria, C.B. Dynamics of Industrial Relations in India, Himalaya Publishing. House, Mumbai.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

Bachelor of Science (B.Sc.)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: B.SC.

Introduction :

B.Sc. in Open and Distance Learning (ODL) is an undergraduate degree program in science that is designed to provide students with a flexible and accessible way to pursue their education. The B.Sc. program in ODL is offered by many universities and institutions through online platforms, allowing students to learn at their own pace and convenience.

The B.Sc. program in ODL is suitable for students who are unable to attend traditional classroom-based courses due to various reasons such as work, family, or geographical location. The program is designed to provide students with a strong foundation in science, mathematics, and technology, and it is offered in various specializations, including Physics, Chemistry, Mathematics, Biology, Computer Science, and Environmental Science, among others.

The B.Sc. program in ODL follows a self-learning approach that enables students to learn through a combination of online materials, textbooks, video lectures, and interactive learning resources. Students have the flexibility to access these resources at their own pace and convenience, allowing them to manage their time effectively.

The B.Sc. program in ODL is a three-year course of study, and it aims to develop students' analytical, problem-solving, and research skills. The program involves a combination of theoretical coursework, laboratory work, and research projects, which enable students to gain a deeper understanding of the principles and concepts of science.

Overall, the B.Sc. program in ODL is a convenient and accessible way for students to pursue their education in science and develop the knowledge, skills, and competencies required for a successful career in research, development, teaching, or any other science-related profession.

(i) (a) Programme's Mission: The mission of the B.Sc. program is to provide students with a strong foundation in science, mathematics, and technology, and to develop their analytical, problem-solving, and research skills. The program aims to enable students to apply scientific principles and techniques to real-world problems and prepare them for successful careers in research, development, teaching, or any other science-related profession.

The B.Sc. program also aims to promote critical thinking, creativity, and innovation among students, and to encourage them to pursue scientific inquiry and lifelong learning. The program is designed to provide students with a broad-based education in science that includes both theoretical and practical components, enabling them to develop a deep understanding of the principles and concepts of science.

The B.Sc. program's mission also includes equipping students with the skills and competencies required to meet the challenges of the 21st century, including global environmental issues, technological advancements, and the

need for sustainable development. The program aims to foster ethical decision-making, social responsibility, and a commitment to lifelong learning among students.

Overall, the mission of the B.Sc. program is to provide students with a high-quality education in science that prepares them for successful careers and lifelong learning, and enables them to contribute to society by applying scientific principles and techniques to real-world problems.

(b) Objectives:

The objectives of the B.Sc. program are as follows:

- Develop a strong foundation in science: The program aims to provide students with a strong foundation in science, including physics, chemistry, mathematics, biology, and computer science. This will enable students to understand the fundamental principles and concepts of science.
- Enhance analytical and problem-solving skills: The program aims to enhance students' analytical and problem-solving skills by providing them with practical laboratory work, research projects, and theoretical coursework.
- Encourage scientific inquiry: The program aims to encourage students to pursue scientific inquiry and research, fostering critical thinking, creativity, and innovation.
- Develop practical skills: The program aims to develop students' practical skills, including laboratory techniques, data analysis, and scientific communication.
- Foster interdisciplinary learning: The program aims to foster interdisciplinary learning, enabling students to apply scientific principles and techniques to real-world problems in diverse fields.
- Promote ethical and social responsibility: The program aims to promote ethical decision-making, social responsibility, and a commitment to sustainable development among students.
- Prepare for further education and careers: The program aims to prepare students for further education in science and related fields, as well as for successful careers in research, development, teaching, or any other science-related profession.

Overall, the B.Sc. program's objectives are to develop students' knowledge, skills, and competencies in science, preparing them for successful careers and lifelong learning, and enabling them to contribute to society through scientific inquiry and problem-solving.

(ii) Relevance of the Programme with HEI's Mission and Goals:

The B.Sc. program's relevance to an institution's mission and goals can vary depending on the specific institution. However, in general, the B.Sc. program aligns with many higher education institutions' missions and goals in the following ways:

Advancing scientific knowledge: Many higher education institutions aim to advance scientific knowledge and research, and the B.Sc. program plays an important role in achieving this goal. The program provides students

with a strong foundation in science, enabling them to contribute to the advancement of scientific knowledge through research and discovery.

Preparing students for careers in science: Many higher education institutions aim to prepare students for successful careers, and the B.Sc. program prepares students for careers in research, development, teaching, or any other science-related profession.

Fostering critical thinking and problem-solving skills: Many higher education institutions aim to foster critical thinking and problem-solving skills, and the B.Sc. program provides students with the opportunity to develop these skills through theoretical coursework, laboratory work, and research projects.

Promoting interdisciplinary learning: Many higher education institutions aim to promote interdisciplinary learning and collaboration, and the B.Sc. program fosters interdisciplinary learning by enabling students to apply scientific principles and techniques to real-world problems in diverse fields.

Encouraging lifelong learning: Many higher education institutions aim to encourage lifelong learning, and the B.Sc. program promotes lifelong learning by fostering scientific inquiry and providing students with the skills and competencies required to continue learning throughout their careers.

Overall, the B.Sc. program aligns with many higher education institutions' missions and goals, enabling them to contribute to the advancement of scientific knowledge and prepare students for successful careers and lifelong learning.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for the B.Sc. program typically includes students who have completed their high school education and have a strong interest in science and technology. These students may have taken science courses in high school and have a passion for exploring the natural world, understanding scientific concepts, and conducting scientific research.

In general, students who are interested in pursuing the B.Sc. program are likely to be curious, analytical, and have a passion for problem-solving. They may have a strong academic record in science-related subjects and have demonstrated an aptitude for mathematics, physics, chemistry, and biology.

The B.Sc. program may also be appropriate for students who are interested in pursuing careers in research, development, teaching, or any other science-related profession. The program provides students with a strong foundation in science, enabling them to apply scientific principles and techniques to real-world problems and prepare them for successful careers in diverse fields.

Overall, the target group of learners for the B.Sc. program is likely to be motivated, academically strong, and have a passion for science and technology. They may also have a desire to contribute to society by applying their scientific knowledge and skills to solve real-world problems.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The B.Sc. program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence for the following reasons:

- Flexibility: ODL mode allows students to study at their own pace and time, giving them the flexibility to balance their studies with work, family, or other commitments. This flexibility enables students to acquire specific skills and competence at their own pace.
- Accessibility: ODL mode makes education accessible to a wider range of students, including those who are unable to attend on-campus classes due to geographical, financial, or personal reasons. This accessibility enables students to acquire specific skills and competence from the comfort of their own homes.
- Technology-driven: ODL mode is technology-driven, and students can access course materials, lectures, and assignments online. This technology-driven approach enables students to acquire specific skills and competence using the latest technology and resources.
- Interactive Learning: ODL mode employs various interactive learning tools such as online discussion forums, chat rooms, and video conferencing. These tools enable students to collaborate with other learners and interact with their instructors, enhancing their learning experience.
- Practical Learning: ODL mode incorporates practical learning through virtual labs, simulations, and experiments. This practical learning approach enables students to acquire specific skills and competence in scientific research and experimentation.

Overall, the B.Sc. program can be appropriately conducted in the ODL mode to acquire specific skills and competence. The flexibility, accessibility, technology-driven approach, interactive learning, and practical learning components of ODL mode enable students to acquire specific skills and competence in scientific research and experimentation, preparing them for successful careers in research, development, teaching, or any other science-related profession.

(v) Instructional Design: The B.SC. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as

well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 3 year duration with annual examinations. The maximum period allowed is 5 years (double the duration). The Programme structure is as below.

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is three years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the B.Sc. programme is a 120-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the B.Sc. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: passed 12th standard in the Science stream.

Fee Structure: B.SC. Previous & B.SC. Final:

Rs. 2960/-: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments,

and Class Tests for a total mark of 30.

- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass

<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has nodisciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The B.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
B.SC.	7,00000/-	3,00000/-	10,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

The Quality Assurance Mechanism and expected program outcomes for the B.Sc. program are as follows:

Quality Assurance Mechanism:

- Curriculum Design: The B.Sc. program curriculum is designed in consultation with industry experts, academics, and professional bodies to ensure that it is relevant and up-to-date.
- Course Delivery: The course delivery is supported by the latest technologies, experienced faculty, and a range of learning resources such as virtual labs, simulations, and online discussion forums.
- Assessment: The assessment system is rigorous, transparent, and fair, with regular formative and summative assessments, which measure the students' learning outcomes.
- Feedback: The feedback system is designed to ensure that students receive timely and constructive feedback on their performance, enabling them to identify areas of improvement and take corrective action.
- Quality Control: The quality control mechanisms include regular internal and external reviews and evaluations, ensuring that the program's quality is maintained and improved continuously.

Expected Program Outcomes:

- Scientific knowledge: Students will acquire a strong foundation in scientific principles and concepts, enabling them to apply their knowledge in diverse fields.
- Critical thinking: Students will develop critical thinking skills, enabling them to analyze and solve complex problems.
- Communication: Students will develop effective communication skills, enabling them to communicate scientific ideas and findings to a wide range of audiences.
- Research and experimentation: Students will develop research and experimentation skills, enabling them to conduct scientific research and experimentation.
- Professionalism: Students will develop professional and ethical values, enabling them to work effectively in a team and contribute to society.

Overall, the Quality Assurance Mechanism and expected program outcomes for the B.Sc. program ensure that students receive a high-quality education, which prepares them for successful careers in research, development, teaching, or any other science-related profession.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.Sc. Mathematics

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.Sc. Mathematics

Introduction :

MSc Mathematics in Open and Distance Learning (ODL) is a postgraduate program that offers flexible learning options to students who wish to pursue their studies in mathematics, but are unable to attend regular classroom-based programs. ODL programs are designed to provide students with the opportunity to learn at their own pace and in their own time.

The MSc Mathematics program in ODL covers the same topics as a regular classroom-based program, but the delivery of the course material is done through online platforms, study materials, and periodic contact sessions with instructors. This program is ideal for working professionals, individuals residing in remote areas, or those who have other commitments that make it difficult to attend regular classroom-based programs.

The program typically lasts for two years and covers a wide range of mathematical topics such as calculus, algebra, topology, probability, statistics, and mathematical modeling. Students are also exposed to advanced topics such as functional analysis, differential geometry, algebraic geometry, and number theory.

ODL programs provide students with the flexibility to study and learn at their own pace and in their own time. Students can access the course material and interact with instructors and fellow students through online platforms, and they have the option to attend periodic contact sessions for clarification of doubts and guidance.

Overall, an MSc Mathematics program in ODL provides students with the opportunity to develop their mathematical skills, deepen their knowledge of mathematical concepts, and prepare for a wide range of careers in various industries while offering the flexibility to study from any location.

(i) (a) Programme's Mission: To groom the learners in such a way that they help discover themselves and make a positive 'contribution in their lives as well as the lives of those around them.

(b) Objectives:

The objective of an MSc in Mathematics course is to provide advanced knowledge and skills in mathematical theory and its applications. The course typically involves the study of various branches of mathematics such as algebra, analysis, geometry, topology, number theory, probability theory, and statistics.

The specific objectives of an MSc in Mathematics course may include:

- Developing a deep understanding of mathematical concepts, principles, and theories.
- Enhancing problem-solving skills and critical thinking abilities.
- Providing training in mathematical modelling and computation.
- Developing the ability to apply mathematical concepts to real-world problems.
- Enhancing research skills and preparing students for further academic pursuits.
- Preparing students for careers in areas such as research, academia, finance, engineering, and technology.
- Providing a strong foundation for pursuing a Ph.D. in Mathematics.

Overall, the objective of an MSc in Mathematics course is to equip students with the knowledge and skills necessary to become competent mathematicians and problem solvers in various fields.

(ii) Relevance of the Programme with HEI's Mission and Goals: The Programme is developed in line with the philosophy of Open and Distance Learning which is founded on the principle of flexibility. The Department endeavours to uphold this philosophy, well reflected in the University's mission & vision, Effective and sustainable interventions to develop upgrade and recycle human resources for areas critical to national development including the well being of the community Cost effective, extention and promotion of quality of education to reach the unreached Interventions for the well being of the community Omnipresent and omnipotent education using emerging information and communication technologies Success throught Access. The Programmes offered by the Department are at par with the national and international standards. Nonetheless, they are also customised keeping in mind the requirements of those learners of Madhya pradesh who hail from humble and remote backgrounds. There is also a provision for counselling for the benefit of the learners. Thus, the Programme is well designed and is in line with HEI's mission and goals.

(iii) Nature of prospective target group of learners:

- Working professionals who want to enhance their knowledge and skills in mathematics to advance their careers.
- Graduates with a bachelor's degree in mathematics or a related field who want to pursue further studies in mathematics.
- Students who are unable to attend traditional full-time programs due to personal or professional commitments but still want to pursue higher education.

- Individuals who want to change their career path and transition to a career in mathematics or related fields.
- Individuals who are interested in research in mathematics or want to pursue a Ph.D. in Mathematics.

The nature of the target group can vary in terms of age, educational background, work experience, and motivation for pursuing the program. Therefore, the program should be designed to cater to the diverse needs of the learners and provide flexible learning opportunities to accommodate their busy schedules. The program should also include appropriate pedagogical strategies, such as online lectures, interactive sessions, online assignments, and assessments, to ensure effective learning outcomes for the learners.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our students. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self- instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the MSc programme is a 72-credit programme. This comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the MSc programme a learner is expected to put in 2160 study hours to complete the programme in two years' time.

Once a learner develops an interest in the subject, he can upgrade his knowledge by studying other critical material available on the subject. Once a sound foundation is laid, competence would be a natural corollary.

(v) Instructional Design: The MSc programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

(a)Detailed Syllabus of the Programme: Appendix

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department would require a support staff for its the smooth functioning in future.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the MSc programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge,

attending counselling sessions and preparing assignments. Thus, in the MSc programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Contact Programmes :

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: B.Sc. with Mathematics

Fee Structure: MSc Previous & MSc Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The MSc programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.Sc. Mathematics	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms in an M.Sc. Mathematics program in Open and Distance Learning (ODL) are necessary to ensure that the program meets the required standards and provides quality education to the learners. Some of the quality assurance mechanisms that can be used are:

1. Curriculum design and review: The curriculum of the program should be designed and periodically reviewed to ensure that it aligns with the current trends, standards, and requirements of the industry and academia.
2. Evaluation and assessment: Regular evaluation and assessment of the learners' progress should be conducted to ensure that they are meeting the program's learning objectives and outcomes.
3. Faculty and instructor training: Faculty and instructors should be adequately trained and qualified to teach the subject matter effectively and efficiently.
4. Learner support services: Learner support services such as academic counselling, technical support, and mentorship should be provided to ensure that learners receive the necessary guidance and assistance throughout the program.
5. Infrastructure and technology: The program should have adequate infrastructure and technology to support the delivery of the instructional content and assessments.
6. Accreditation: The program should be accredited by a recognized accreditation agency to ensure that it meets the required standards and quality.

The expected program outcomes of an M.Sc. Mathematics program in ODL can include:

- In-depth knowledge and understanding of advanced mathematical concepts and techniques.
- Competence in mathematical problem-solving and critical thinking.
- Ability to apply mathematical principles and methods in real-world situations.
- Effective communication and collaboration skills.
- Capacity to conduct independent research and contribute to the development of new mathematical theories and applications.
- Preparation for further studies in mathematics or related fields.

The program should be designed to achieve these expected outcomes and should be regularly evaluated and reviewed to ensure that the outcomes are being achieved.

M.Sc. Syllabus

Subject Code	Paper Name	Credits	L-T-P
Semester I			
MTH-PG-C101	Analysis-I	4	4-0-0
MTH-PG-C102	Linear Algebra	4	4-0-0
MTH-PG-C103	Combinatorics and Elementary Number Theory	4	4-0-0
MTH-PG-C104	Differential Equations	4	4-0-0
Semester II			
MTH-PG-C201	Analysis-II	4	4-0-0
MTH-PG-C202	Complex Function Theory	4	4-0-0
MTH-PG-C203	Algebra	4	4-0-0
MTH-PG-O204	Numerical Analysis (Open Elective)	4	4-0-0
Semester III			
MTH-PG-C301	Topology	4	4-0-0
MTH-PG-O302	A) Optimization Technique B) Nonlinear Dynamics (Open Elective)	4	4-0-0
MTH-PG-E303	Cryptography	4	4-0-0
MTH-PG-E304	Field Theory	4	4-0-0
MTH-PG-E305	Measure Theory	4	4-0-0
Semester IV			
MTH-PG-E401	Algebraic Topology	4	4-0-0
MTH-PG-E402	Commutative Algebra	4	4-0-0
MTH-PG-E403	Differential Geometry	4	4-0-0
MTH-PG-E404	Functional Analysis	4	4-0-0
MTH-PG-E405	Operator Theory	4	4-0-0
MTH-PG-E406	Algebraic Geometry	4	4-0-0
MTH-PG-E-407	Advanced Complex Analysis	4	4-0-0
MTH-PG-P404	Dissertation/Project Work	4	

MTH-PG-C101: ANALYSIS-I

Credit: 4

Unit I: Real Numbers

Relations and functions, Finite and infinite sets, countable and uncountable sets, least upper bound property, the field of real numbers, Archimedean property, density of rational numbers, existence of nth root of positive real numbers, exponential and logarithm, the extended real number system.

Unit II: Numerical Sequences and Series

Numerical sequences and their convergence, bounded sequences, Cauchy sequences, construction of real numbers using Cauchy sequences; limit supremum and limit infimum, Bolzano-Weierstrass' threorem for sequences of real number, series of nonnegative terms, the number e, tests of convergence of series, power series, absolute convergence, addition and multiplication of series, rearrangements (statement only).

Unit III: Topology of R^n

Euclidean spaces, open and closed sets, limit points, interior points, compact subsets of R^n, nested interval theorem, Heine-Borel theorem, and Bolzano-Weierstrass' threorem.

Limits of functions, continuous functions, continuity and compactness, uniform continuity, connected sets, connected subsets of real numbers, continuity and connectedness, intermediate value theorem; discontinuities and their classifications, monotonic functions, infinite limits and limits at infinity.

Unit IV: Differentiation & Integration

Differentiation of real-valued functions and its elementary properties; mean value theorem; Taylor's theorem; elementary properties of Riemann integral, Fundamental theorem of Calculus, mean value theorem, convergence of improper integrals.

Textbooks:

1. Rudin, W. (2013) *Principles of Mathematical Analysis* (3rd Edition), Tata McGraw Hill Education.

Reference books:

1. Apostol, T. (2000) *Mathematical Analysis* (2nd edition) Narosa Book Distributers Pvt. Ltd.
2. Bartle, R.G. and Sherbert D. R. (2000) *Introduction to Real Analysis* (3rd edition) John Wiley & Sons, Inc., New York.
3. Fraleigh, J. B. (2002) *A First Course in Abstract* Algebra (4th edition) Narosa Publishing House, New Delhi.
4. Gallian, J. A. (1999) *Contemporary Abstract Algebra* (4th edition) –Narosa Publishing House, New Delhi.

MTH-PG-C102: LINEAR ALGEBRA

Credit: 4

Unit I: Vector Space

Vector spaces, linear independence; linear transformations, matrix representation of a linear transformation; isomorphism between the algebra of linear transformations and that of matrices;

Unit II: Eigenvalues and Eigenvectors

Similarity of matrices and linear transformations; trace of matrices and linear transformations, characteristic roots and characteristic vectors, characteristic polynomials, relation between characteristic polynomial and minimal polynomial; Cayley-Hamilton theorem (statement and illustrations only); diagonalizability, necessary and sufficient condition for diagonalizability;

Unit III: Canonical Forms

Projections and their relation with direct sum decomposition of vector spaces; invariant subspaces; primary decomposition theorem, cyclic subspaces; companion matrices; a proof of Cayley-Hamilton theorem; triangulability; canonical forms of nilpotent transformations; Jordan canonical forms; rational canonical forms.

Unit IV: Inner Product Spaces

Inner product spaces, properties of inner products and norms, Cauchy-Schwarz inequality; orthogonality and orthogonal complements, orthonormal basis, Gram-Schmidt process; adjoint of a linear transformation; Hermitian, unitary and normal transformations and their diagonalizations.

Textbooks:

1. Hoffman, K., Kunze, R. (2000) *Linear Algebra* (2nd edition) Prentice Hall of India Pvt. Ltd., New Delhi.

2. Bhattacharya, P. B. Jain, S. K. and Nagpal, S. R. (2000) *First Course in Linear Algebra*, Wiley Eastern Ltd., New Delhi.

Reference books:

1. Herstein, I. N. (2003) *Topics in Algebra* (4th edition), Wiley Eastern Limited, New Delhi.
2. Shilov, G. E. (1998) *Linear Algebra*, Prentice Hall Inc.
3. Halmos, P. R. (1965) *Finite Dimensional Vector Spaces*, D.VanNostrand Company Inc.
4. Finkbeiner, D. T. (2011) *Introduction to Matrices and Linear Transformations* (3rd edition) Dover Publications.
5. Kumaresan,S. (2001) *Linear Algebra: A Geometric Approach*, Prentice-Hall of India Pvt. Ltd., New Delhi.

MTH-PG-C103: COMBINATORICS AND ELEMENTARY NUMBER THEORY

Credit: 4

Unit I: Theory of Numbers

Divisibility; Euclidean algorithm; primes; congruences; Fermat's theorem, Euler's theorem and Wilson's theorem; Fermat's quotients and their elementary consequences; solutions of congruences; Chinese remainder theorem; Euler's phi-function.

Unit II: Congruences

Congruence modulo powers of prime; primitive roots and their existence; quadratic residues; Legendre symbol, Gauss' lemma about Legendre symbol; quadratic reciprocity law; proofs of various formulations; Jacobi symbol.

Unit III: Diophantine Equations

Solutions of ax + by = c, x2 + y2 = z2 , x4 + y4 = z2 ; properties of Pythagorean triples; sums of two, four and five squares; assorted examples of diophantine equations.

Unit IV: Generating Functions and Recurrence Relations

Generating Function Models, Calculating coefficient of generating functions, Partitions, Exponential Generating Functions, A Summation Method. Recurrence Relations: Recurrence Relation Models, Divide and conquer Relations, Solution of Linear, Recurrence Relations, Solution of Inhomogeneous Recurrence Relations, Solutions with Generating Functions.

Textbooks:

1. Niven, I., Zuckerman, H. S. and Montegomery, H. L. (2003) *An Introduction to the Theory of Numbers* (6th edition) John Wiley and sons, Inc., New York.

2. Burton, D. M. (2002) *Elementary Number Theory* (4th edition) Universal Book Stall, New Delhi.

3. Balakrishnan, V. K. (1994) *Schaum's Outline of Theory and Problems of Combinatorics Including Concepts of Graph Theory*, Schaum's Outline.

4. Balakrishnan,V. K. (1996) *Introductory Discrete Mathematics*, Dover Publications.

Reference books:

1. Dickson, L. E. (1971) *History of the Theory of Numbers* (Vol. II, Diophantine Analysis) Chelsea Publishing Company, New York.

2. Hardy, G.H. and Wright, E. M.(1998) *An Introduction to the Theory of Numbers* (6th edition),The English Language Society and Oxford University Press.

3. Niven, I. and. Zuckerman, H. S. (1993) *An Introduction to the Theory of Numbers* (3rd edition), Wiley Eastern Ltd., New Delhi.

MTH-PG-C104: DIFFERENTIAL EQUATIONS

Credit: 4

Unit I: Initial Value Problems

Existence and uniqueness of solutions of IVP: method of successive approximations, system of first order approximations, Picards theorem, Continuous dependence of the solution on initial data, general theory of system of first order equations. Linear systems: Homogenous and nonhomogenous linear systems with constant coefficients.

Unit II: Series Solution

Power series solution, second order equations, ordinary points, regular points and singular points, special functions, Hermite polynomials, Chebychev polynomials, Legendre polynomials, Bessel functions, Gamma functions.

Unit III: Boundary Value Problem

Boundary value problem, Green function, Sturm-Liouville Theory, eigenvalues and eigenfunctions, qualitative properties of solutions, Sturm comparison theorem, Sturm separation theorem

Unit IV: Partial Differential Equations

First order equations, Cauchy Kowlewski theorem, classification of second order PDE, canonical form second order linear equations with constant co-efficients, method of separation of variables. Characteristics and uniqueness theorem for hyperbolic theorems with initial boundary conditions. Elliptic and Parabolic partial differential equations

Text Book:

1. Ross, S. L. (1984) *Differential Equations* (3rd edition), John Wiley & Sons.
2. Coddington, E. A. *An Introduction to Ordinary Differential Equations*, Prentice-Hall.
3. Sneddon, I.N. (1957) *Elements of Partial Differential Equations*, McGraw Hill.

References:

1. G. F. Simmons, *Differential Equations with Applications and Historical Notes*, McGraw HillEducation.
2. Fritz John (1982) *Partial Differential Equations*, Springer-Verlag, New York Inc.
3. Coddington, E. A. and Levinson, N. (1955) *Theory of Ordinary Differential equations*, TMH Education.
4. Cronin, J. (1994) *Differential Equations: Introduction and Qualitative Theory*, Marcel Dekker.
5. Hirsch, M.W. Smale, S. and Devaney, R.L. (2004) *Differential Equations, Dynamical Systems and an Introduction to Chaos*, Elsevier.

MTH-PG-C201: ANALYSIS II

Credit: 4

Unit I: Sequences & Functions

Sequences of functions, pointwise and uniform convergence, uniform convergence and continuity, uniform convergence and integration, uniform convergence and differentiation, Weierstrass' approximation theorem.

Unit II: Differentiability of Functions of Several Variables

Directional derivatives and differentiability of functions of several variables and their interrelationship, chain rule, mean value theorem; higher order partial derivatives, equality of mixed partial derivatives, Taylor's theorem.

Unit III: Inverse & Implicit Function Theorem

Injective mapping theorem, surjective mapping theorem, inverse function theorem and implicit function theorem of functions of two and three (for analogy) variables, extremum problems with and without constraints of functions of two and three (for analogy) variables.

Unit IV: Multiple Integrals

Multiple integrals, repeated integrals, interchange of order of integrations, change of variable theorem, mean-value theorems for multiple integrals, line integral and Green's theorem, Convergence of improper integrals

Textbooks:

1. Rudin, W. (2013) *Principles of Mathematical Analysis* (3rd Edition), Tata McGraw Hill Education.
2. Apostol, T. (2000) *Mathematical Analysis* (2nd edition) Narosa Book Distributers Pvt. Ltd.
3. Bartle, R.G. (1994) *The Elements of Real Analysis* (3rd edition), Wiley International Edition.
4. Joel R. Hass, Christopher E.Heil, Maurice D. Weir, Thomas Calculus (14^{th} Edition) Pearson

Reference books:

1. Buck, R. C. &Buck, E. F. (1999) *Advanced Calculus* (4th Edition), McGraw Hill, New York.
2. Simmons, G. F.(2003) *Introduction to Topology and Modern Analysis* (4th edition), McGraw Hill.
3. Bartle, R. G. and Sherbert, D. R. (2000) *Introduction to Real Analysis* (3rd edition), John Wiley & Sons, Inc., New York.
4. Tom M.Apostol, Calculus Volume –II (2^{nd} Edition), Wiley and Sons

MTH-PG-C202: COMPLEX FUNCTION THEORY

Credit: 4

Unit I: Holomorphic Functions

Holomorphic Functions, Cauchy-Riemman equations and its applications, Formal power series, radius of convergence of power series, exponential, cosine and sine, logarithm functions introduced as power series, their elementary properties.

Unit II: Complex Integration

Integration of complex-valued functions and differential 1-forms along a piecewise differentiable path, primitive, local primitive and primitive along a path of a differential 1-form, Index of a closed path, Cauchy's theorem for convex regions.

Cauchy's integral formula, Taylor's expansion of holomorphic functions, Cauchy's estimate; Liouville's theorem; fundamental theorem of algebra; zeros of an analytic function and related results; maximum modulus theorem; Schwarz' lemma.

Unit III: Singularities and Residues

Laurent expansion of a holomorphic function in an annulus, singularities of a function, removable singularities, poles and essential singularities; extended plane and stereographic projection, residues, calculus of residues; evaluation of definite integrals; argument principle; Rouche's Theorem.

Unit IV: Conformal Mapping

Complex form of equations of straight lines, half planes, circles, etc., analytic (holomorphic) function as mappings; conformal maps; Mobius transformation; cross ratio; symmetry and orientation principle; examples of images of regions under elementary analytic function.

Textbooks:

1. Sarason, D. (2008) *Complex Function Theory, Texts and Readings in Mathematics*, Hindustan Book Agency, New Delhi.

Reference books:

1. Ahlfors, L. V. (1990) *Complex Analysis* (2nd Edition), McGraw-Hill International Student Edition.
2. Conway, J. B. (2000) *Functions of one complex variable*, Springer International Student edition, Narosa Publishing House, New Delhi.
3. Churchill, R. V. (1996) *Complex Variables and applications*, McGraw-Hill.
4. Copson, E. T. (1995) *An Introduction to the Theory of functions of a complex Variable,* Oxford University Press.
5. Shastri, A. R. (2003) *An Introduction To Complex Analysis*, Macmillan India Ltd.

MTH-PG-C203: ALGEBRA

Credit: 4

Unit I: Basic Concepts of Groups

A brief review of groups, their elementary properties and examples, subgroups, cyclic groups, homomorphism of groups and Lagrange's theorem; permutation groups, permutations as products of cycles, even and odd permutations, normal subgroups, quotient groups; isomorphism theorems, correspondence theorem;

Unit II: Sylow's Theorem

Group action; Cayley's theorem, group of symmetries, dihedral groups and their elementary properties; orbit decomposition; counting formula; class equation, consequences for p-groups; Sylow's theorems (proofs using group actions). Applications of Sylow's theorems, conjugacy classes in Sn and An, simplicity of An. Direct product; structure theorem for finite abelian groups; invariants of a finite abelian group (Statements only)

Unit III: Rings

Basic properties and examples of ring, domain, division ring and field; direct products of rings; characteristic of a domain; field of fractions of an integral domain; ring homomorphisms (always unitary); ideals; factor rings; prime and maximal ideals, principal ideal domain; Euclidean domain; unique factorization domain.

Unit IV: Polynomial Rings

A brief review of polynomial rings over a field; reducible and irreducible polynomials, Gauss' theorem for reducibility of $f(x)$ Z x ; Eisenstein's criterion for irreducibility of $f(x)$ Z x over Q, roots of polynomials; finite fields of orders 4, 8, 9 and 27 using irreducible polynomials over Z2 and Z3 .

Textbooks:

1. Bhattacharya,P.B., Jain, S. K. and Nagpal S. R. (2000) *Basic Abstract Algebra* (3rd edition), Cambridge University Press.
2. Jacobson, N. (2002) *Basic Algebra I* (3rd edition), Hindustan Publishing Corporation, New Delhi.
3. Gallian, J. A. (1999) *Contemporary Abstract Algebra* (4th edition), Narosa Publishing House, New Delhi.

Reference books:

1. Herstein, I. N. (2003) *Topics in Algebra* (4th edition), Wiley Eastern Limited, New Delhi.
2. Fraleigh, J. B. (2002) *A First Course in Abstract Algebra* (4th edition), Narosa Publishing House, New Delhi.
3. Dummit, D.S. and Foote, R.M (2003) *Abstract Algebra*, John Wiley & Sons.

MTH-PG-O204: NUMERICAL ANALYSIS

Credit: 4

Unit I: Non- linear system of equations and linear system of algebraic equations

System of non-linear equations: Fixed point iteration method for the system x = g(x), sufficient condition for convergence, Newton's method for nonlinear systems

Solution of Linear equations: Direct methods: Gaussian elimination, LU and Cholesky factorizations. Operational counts for all these direct methods. Iterative methods: General framework for iterative methods, Jacobi and Gauss Seidel methods, Necessary and sufficient conditions for convergence, order of convergence, successive relaxation method.

Unit II: Eigenvalue Problem

Gershgorin theorem, Power and inverse power method, QR method. Jacobi, Givens and Householder's methods for symmetric eigenvalue problem

Unit III: Finite Difference Methods

Finite difference methods for two point boundary value problems, convergence and stability. Finite difference methods for parabolic, hyperbolic and elliptic partial differential equations: Discretization error, Idea of convergence and stability, Explicit and Crank-Nicolson implicit method of solution of one dimensional heat conduction equation: convergence and stability. Standard and diagonal five point formula for solving Laplace and Poisson equations, Explicit and Implicit method of solving Cauchy problem of one-dimensional wave equation, CFL conditions of stability and convergence, Finite difference approximations in polar coordinates.

Unit IV: Practical

1. Gauss-Jordan method
2. LU and Cholesky factorization methods
3. Inverse of a matrix
4. S.O.R. / S.U.R. method
5. Relaxation method
6. Power and inverse power methods
7. Jacobi, Givens and Householder's methods
8. Solution of one dimensional heat conduction equation by i) Explicit and ii) Crank-Nicolson implicit method
9. Solution of Laplace equation
10. Solution of Poisson equation
11. Solution of one-dimensional wave equation

Textbooks:

1. K. E. Atkinson, K. E. (1989) *Introduction to Numerical Analysis*, John Wiley.
2. Smith, G. D. (1986) *Numerical Solution of Partial Differential Equations*, Oxford University Press.

MTH-PG-C301: TOPOLOGY

Credit: 4

Unit I: Topology

Definition and examples of topological spaces; basis and sub basis; order topology; subspace topology.Continuity and related concepts; product topology; quotient topology; countability axioms; Lindelof spaces and separable spaces.

Unit II: Connectedness

Connected spaces, generation of connected sets; component, path component; local connectedness, local path-connectedness.

Unit III: Compactness

Compact spaces; limit point compact and sequentially compact spaces; locally compact spaces; one point compactification; finite product of compact spaces, statement of Tychonoff's theorem (Proof of finite product only).

Unit IV: Separability & Countability

Separation axioms; Urysohn's lemma; Tietze's extension theorem; Urysohn's embedding lemma and Urysohn's metrization theorem for second countable spaces.

Textbooks:

1. Munkres, J. R. (2000) *Topology: a First Course*, Prentice-Hall of India Ltd., New Delhi.

Reference books:

1. J. Dugundji (1990) *General Topology*, Universal Book Stall, New Delhi.
2. Pervin, W. J. (1964) *Foundations of General Topology*, Academic Press, New York.
3. Willard, S. (1970) *General Topology*, Addison-Wesley Publishing Company, Massachusetts.
4. Armstrong, M. A. (2005) *Basic Topology*, Springer International Ed.
5. Kelley, J. L. (1990) *General Topology*, Springer Verlag, New York.
6. Joshi, K. D. (2002) *An Introduction to General Topology* (2nd edition), Wiley Eastern Ltd., New Delhi.

MTH-PG-O302A: OPTIMIZATION TECHNIQUE

Credit: 4

Unit I: Introduction

Nature and Features of Operations Research (O.R, Convex set, Polyhedral Convex Set-Linear Programming (L.P), Mathematical Formulation of the Problem, Graphical Solution Method,Some Exceptional Cases, General Linear Programming Problem (General L.P.P)

Unit II: Linear Programming Problem

Slack and Surplus Variable, Reformulation of the General L.P.P., Simplex Method- Matrix Notation, Duality (Statement only of Property without Proof), Initial Simplex Tableau, Pivot,Calculating the new Simplex Tableau, Terminal Simplex Tableau, Algorithm of the Simplex Method.

Unit III: Games and Strategies

Introduction, Two- person Zero-sum games, Pay-off Matrix , some basic terms, the Maximum Minimal Principle, Theorem on Maximum and Minimal Values of the Game,Saddle Point and Value of the Game, Rule for determining a Saddle Point, Games without Saddle Points, Mixed Strategies, Graphic solution of 2 x n and m x 2 games, Dominance Property- General rule for Dominance, Modified Dominance Property.

Unit IV: Integer Programming

Travelling Salesman Problem, Transport and Assignment Problem, Max flow-Min cut problem, Minimal spanning tree, shortest path problem.

Text Book:

1. Hadley, G. (1966) *Linear Programming*, Addison.
2. Gale, D. (1989) *The Theory of Linear Economic Model*, University of Chicago Press.
3. Swarup, K, Gupta, P. K. and Mohan, M. (2002) *Operations Research*, Sultan Chand & Sons, New Delhi.

Reference Books:

1. Friderick S. H. and Gerald J. L. (1974) *Operations Research*, Holden-Day Inc, San Fransisco.
2. Hamdy A. T. (2002) *Operation Research: An Introduction*, Prentice-Hall of India Pvt. Ltd., New Delhi.

MTH-PG-O302A: NON-LINEAR DYNAMICS

Credit: 4

Unit I: Linear Systems

System of linear ordinary differential equations; Fundamentals of linear systems; Linear Systems in R^2; Stability theory, phase portraits in R^2.

Unit II: Non-Linear Systems

System of nonlinear ordinary differential equations; Fundamental existence-uniqueness theorem, dependence on initial conditions and parameters; flow defined by differential equations; linearization; Hartman-Grobman theorem; Stability and Lyapunov functions.

Unit III: Stable Points

Stable manifold theorem, Center manifold theorem; Elementary bifurcations- Saddle-node, Transcritical, Pitch-fork, Hopf bifurcation.

Unit IV: Attractors

Limit sets and attractors, periodic orbits and limit cycles, stable manifold theorem for periodic orbits, Lienard systems, Bendixon's Criteria, global bifurcation of systems in R^2 .

Text Books:

1. Perko, L. (2001) *Differential Equations and Dynamical Systems*, Springer.
2. Jordan, D. W. and Smith, P. (1999) *Nonlinear Ordinary Differential Equations: An Introduction to Dynamical Systems*, Oxford University Press.

MTH-PG-E301: CRYPTOGRAPHY

Credit: 4

Unit I: Number Theory and Time estimates required for Cryptography

The big Oh notation, time estimates for doing addition, subtraction, multiplication, division. Euclidean Algorithm and the time estimate to find the greatest common divisor of two integers, extended Euclidean algorithm. Properties of congruences: addition, multiplication, subtraction and division; solution of linear congruences, modular exponentiation by repeated squaring method.

Unit II: Fundamental Theorems

Fermat's little theorem, Euler's totient function, Euler's theorem, Primitive roots. Finite fields: Primitive polynomials, Irreducible polynomials, Time estimations for doing arithmetic operations in finite fields, Construction of finite fields.

Unit III: Classical Cryptosystems

Shift cipher, Affine cipher, Substitution cipher, Vigenere cipher, Hill cipher, permutation cipher. Public Key cryptography: One way function, Trap door functions, Concept of public key cryptography, RSA, Digital signature scheme.

Unit IV: Primality Testing and Integer Factorization

Primality testing: pseudo primes, Rabin Miller probabilistic primality test, Carmichael numbers.

Factoring algorithms: Pollard's rho method, Pollard's p-1 method, Fermat's factorization method.Discrete logarithm, Diffie-Hellman Key exchange protocol, El Gamal cryptosystem over prime field and finite fields, El Gamal digital signature scheme.

(Note: A basic introduction to Elliptic curve cryptography should be taught for the benefit of the students but it should not be included for examination purpose).

Text book:

1. Koblitz, N. (1994) *A course in Number Theory and Cryptography*, (Second Ed.), Springer-Verlag.

Reference books:

1. Stinson, D. R. (1995) *Cryptography: Theory and Practice*, CRC Press series on Discrete Mathematics and its applications.
2. Yan, S. Y. (2003) *Primality Testing and Integer Factorization in Public-Key Cryptography*, Springer

MTH-PG-E302: FIELD THEORY

Credit: 4

Unit I: Field Theory

Extension fields, finite extensions; algebraic and transcendental elements, adjunction of algebraic elements, Kronecker theorem, algebraic extensions, splitting fields – existence and uniqueness; extension of base field isomorphism to splitting fields;

Unit II: Polynomials

Simple and multiple roots of polynomials, criterion for simple roots, separable and inseparable polynomials; perfect fields; separable and inseparable extensions, finite fields; prime fields and their relation to splitting fields; Frobeniusendomorphisms; roots of unity and cyclotomic polynomials.

Unit III: Galois group

Algebraically closed fields and algebraic closures, primitive element theorem; normal extensions; automorphism groups and fixed fields; Galois pairing; determination of Galois groups, fundamental theorem of Galois theory, abelian and cyclic extensions.

Unit IV: Solvability

Normal and subnormal series, composition series, Jordan-Holder theorem (statement only); solvable groups, Sovability by radicals; solvability of algebraic equations; symmetric functions; ruler and compass constructions, fundamental theorem of algebra.

Textbooks:

1. T. I. F. R. *Mathematical pamphlets*, No. 3, (1965) Galois Theory.
2. Artin, E. (1997) *Galois Theory*, Edited by Arthur N. Milgram, Dover Publications.

Reference books:

1. Herstein, I. N. (2003) *Topics in Algebra* (4th edition), Wiley Eastern Limited, New Delhi.
2. Bhattacharya, P. B., Jain, S. K. and Nagpal, S. R. (2000) *Basic Abstract Algebra* (3rd edition), Cambridge University Press.
3. Jacobson, N. (2002) *Basic Algebra I* (3rd edition), Hindustan Publishing Corporation, New Delhi.
4. Fraleigh, J. B. (2002) *A First Course in Abstract Algebra* (4th edition), Narosa Publishing House, New Delhi.

MTH-PG-E303: MEASURE THEORY

Credit: 4

Unit I: Measures

Algebras, sigma-algebras, monotone classes; outer measures and Caratheodory's extension theorem; existence of Lebesgue measure and of non-measurble sets.

Unit II: Integration

Measurable functions, monotone approximability by simple functions, integrability and Lebesgue integration; standard limit theorems: Fatou's lemma, monotone convergence and dominated convergence theorems; almost everywhere considerations.

Unit III: Random Variables & Distributions

Probability, random variables and their distributions, joint distributions and independence, Borel-Cantelli lemma and Kolmogorov's zero-one law, Some of the more standard distributions - both discrete (Bernouilli, Binomial, Poisson, etc.) and continuous (Uniform, Normal, etc.); a brief introduction to conditional expectations and probabilities.

Unit IV: Measures on Product Spaces

Product measures, theorems of Tonelli and Fubini, independence and product measures, infinite products and finite state Markov Chains, Kolmogorov consistency theorem. Characteristic funcions, modes of convergence.

Text book:

1. Athreya, S. R. and Sunder, V.S. (2008) *Probability and Measure*, Universities Press, India.

Reference:

1. Rana, I.K. (2002) *An Introduction to Measure and Integration*, American Math. Soc. 2. Chung, k. L. (2001) *A Course in Probability Theory*, Academic Press.

MTH-PG-E401: ALGEBRAIC TOPOLOGY

Credit: 4

Unit I: The fundamental group

Homotopy of paths, fundamental group of a topological space, fundamental group functor, homotopy of maps of topological spaces; homotopy equivalence; contractible and simply connected spaces; Calculation of fundamental groups of n (n > 1) using Van Kampen's theorem (special case); fundamental group of a topological group; Brouwer's fixed point theorem; fundamental theorem of algebra; vector fields, Frobenius theorem on eigenvalues of 3 x 3 matrices.

Unit II: Covering spaces

Covering spaces, unique lifting theorem, path-lifting theorem, covering homotopy theorem, fundamental group of 1, 1 x 1 etc., degree of maps of 1 and
applications; criterion of lifting of maps in terms of fundamental groups; universal coverings and its existence; special cases of manifolds and topological groups.

Unit III: Homology

Category and Functors, Singular homology, relative homology, Eilenberg-Steenrod axioms (without proof), Reduced homology, relation between Π1 and H1;.

Unit IV: Applications

Calculations of homology of n; Brouwer's fixed point theorem and its applications to spheres and vector fields; Meyer-Vietoris sequence and its application.

Textbooks:

1. Munkres, J. R. (2000) *Topology: A First Course*, Prentice-Hall of India Ltd., New Delhi.
2. Greenberg, M. J. and Harper, J. R. (1997) *Algebraic Topology: A First Course* (2nd edition), Addison-Wesley Publishing Co.
3. Hatcher, A. (2002) *Algebraic Topology*, Cambridge University Press.

Reference:

1. Armstrong , M. A. (2000) *Basic Topology*, UTM Spinger
2. Spanier, E. H. (2000) *Algebraic Topology* (2nd edition), Springer-Verlag, New York.
3. Rotman, J. J. (2004) *An Introduction to Algebraic Topology, Text in Mathematics*, No. 119, Springer, New York.

MTH-PG-E402: COMMUTATIVE ALGEBRA

Credit: 4

Unit I: Rings and Ideals

A brief review of rings, ideals and homomorphisms, Operations on ideals, Extension and contraction of ideals, Nil radical and Jacobson radical.

Unit II: Modules

Modules, sub modules, homomorphism, direct sum and products of modules, exact sequences Tensor product of modules and algebras and basic properties

Unit III: Modules of Fractions and Primary Decomposition

Rings and modules of fractions, Primary decomposition,

Unit IV: Integral Dependence and Valuation Rings

Integral dependence, Going up and going down theorems, Valuation rings; Noetherian rings, Artin rings

Text Books:

1. M. F. Atiyah & I. G. Macdonald, *Introduction to Commutative Rings*, Addison Wesley
2. Zarinski and P. Samuel, *Commutative Algebra with a view towards Algebraic Geometry*, Springer

Reference Books:

1. Irving Kapalansky– *Commutative Rings*
2. N. S. Gopalakrishnan – *Commutative Algebra*, Oxonian Press

MTH-PG-E403: DIFFERENTIAL GEOMETRY

Credit: 4

Unit I: Vectors

Vectors in R3; tangent vectors; tangent spaces; tangent vector fields; derivative mappings; translations; affine transformations and rigid motions (isometries); exterior derivatives.

Unit II: Space Curves

Space curves; arc length; tangent vectors and vector fields on a curve; curvature and torsion; Serret-Frenet formulas; osculating plane; osculating circle; osculating sphere; fundamental theorem of local theory of space curves (existence and uniqueness theorems).

Unit III: Surfaces

Surfaces and their (local) parametrization on coordinate systems; change of parameters; parametrized surfaces; curves on surfaces; tangent and normal vectors; tangent and normal vector fields on a surface; first, second and third fundamental forms of a surface at a point; Gauss mapping.

Unit IV: Curvature

Normal sections and normal curvature of a surface at a point; Meusnier's theorem; elliptic, hyperbolic, parabolic and planar points; Dupin indicatrix; principal directions; principal curvatures of a surface at a point; Mean curvature and Gaussian curvature of a surface at a point. Line of curvature; asymptotic curves; conjugate directions; fundamental equations of the local theory of surfaces; statement of Bonnet's fundamental theorem of local theory of surfaces.

Textbook:

1. Hsiung, C. C. (1997) *A first Course in Differential Geometry*, International Press, University of Michigan.

Reference:

1. Eissenhart, P. (1960) *A Treatise on the Differential Geometry of Curves and Surfaces*, Dover Publications, Inc., New York.

2.Weatherburn, C. R. (1964) *Differential Geometry of Three Dimensions*, The English Language Book Society and Cambridge University Press.

3. Willmore, T. S. (1979) *An Introduction to Differential Geometry*, Clarendon Press, Oxford.

4.Klingenberg, V. (1978) *A Course in Differential Geometry*, Graduate Texts in Mathematics 51, Springer-Verlag.

5. Pressley, A. (2005) *Elementary Differential Geometry*, Springer International Edition.

MTH-PG-E404: FUNCTIONAL ANALYSIS

Credit: 4

Unit I: Normed Linear Spaces and Banach Spaces

Bounded Linear Operators, Duals, Hahn-Banach theorem, Uniform boundedness principle.

Unit II: Open mappings and closed graph theorems

Some applications, dual spaces, computing duals of and C 0, 1 , reflexive spaces;

Unit III: Weak and weak* topologies

BanachAlaoglu theorem, Hilbert Spaces-orthogonal sets, projection theorem, Riesz representation theorem

Unit IV: Adjoint operator

Self-adjoint, normal and unitary operators; Projections, spectrum and spectral radius, spectral theorem for compact operators

Text Book:

1. G.F. Simmons- *Topology and Modern Analysis* (Ch. 9, 10, 11,12), TMH
2. J.B. Conway- *A first course in Functional Analysis*, Springer

Reference Books:

1. W. Rudin- *Real and Complex Analysis*, TMH
2. Erwin Kreyszig – Introductory Functional Analysis with Applications.

MTH-PG-E405: OPERATOR THEORY

Credit: 4

Unit I: Compact operators on Hilbert spaces

Fredholm theory, index

Unit II: C^* algebra

Non-commutative states and representations, Gelfand-Neumark representation theorem.

Unit III: Von-Neumann Algebras

Projections, Double communtant theorem

Unit IV: L^∞ Functional Calculus

Toeplitz operators

Text Books:

1. W. Arveson- *An Invitation to C* algebras*, GTM(39), Springer-Verlag
2. V.S. Sunder- *An invitation to von Neuman algebras*, Springer-Verlag

References:

1. N.Dunford and J.T. Schwarz- *Linear Operators*, Part-II: spectral theory.

MTH-PG-E406: ALGEBRAIC GEOMETRY

Credit: 4

Unit I: Affine algebraic sets

Affine spaces and algebraic sets, Noetherian rings, Hilbert basis theorem, affine algebraic sets as finite intersection of hypersurfaces; Ideal of a set of points, coordinate ring, morphism between algebraic sets, isomorphism. Integral extensions, Noether's normalization lemma

Unit II: Hilbert's Nullstellensatz and applications

Correspondence between radical ideals and algebraic sets, prime ideals and irreducible algebraic sets, maximal ideals and points, contrapositive equivalence between affine

algebras with algebra homomorphisms and algebraic sets with morphisms, between affine domains and irreducible algebraic sets, decomposition of an algebraic set into irreducible components. Zariski topology on affine spaces, algebraic subsets of the plane.

Unit III: Projective spaces

Homogeneous coordinates, hyperplane at infinity, projective algebraic sets, homogeneous ideals and projective Nullstellensatz; Zariski topology on projective spaces. Twisted cubic in P_3(k). Local properties of plane curves: multiple points and tangent lines, multiplicity and local rings, intersection numbers; projective plane curves: Linear systems of curves, intersections of projective curves: Bezout's theorem and applications; group structure on a cubic

Unit IV: Introduction to sheaves of affine varieties

Examples of presheaves and sheaves, stalks, sheafification of a presheaf, sections, structure sheaf, generic stalk and function fields, rational functions and local rings, Affine tangent spaces; Projective varieties and morphisms; Hausdorff axiom. Prime spectrum of a ring: Zariski topology, structiureaheaf, affine schemes, morphism of affine schemes. Elementary Dimension Theory, Fibres of a morphism, complete varieties, nonsingularity and regular local rings, Jacobian criterion, nonsingular curves and DVR's.

Text Books:

1. W.Fulton *Algebraic Curves: An introduction to algebraic geometry*
2. C. G. Gibson – *Elementary Geometry of Algebraic Curves*, CUP,
3. D. S. Dummitt and R. M. Foote – *Abstract Algebra*, Wiley, Ch. 15

Reference Books:

1. J. Harris *Algebraic Geometry, A first course*, Springer
2. M. Reid *Undergraduate algebraic geometry*, LMS 12, CUP
3. K. Kendig – *Elementary Algebraic Geometry*, Springer
4. D. Mumford – *The Red Book of Varieties and Schemes*, Springer
5. I. R. Shafarevich – *Basic Algebraic Geometry*, Springer

MTH-PG-E407: ADVANCED COMPLEX ANALYSIS

Credit: 4

Unit I: Harmonic functions and their properties:

Harmonic functions, Relation with analytic functions, Characterisation of Harmonic functions by mean-value property, Properties of Harmonic functions, Poisson's integral formula, Dirichlet problem for a disc.

Unit II: Weierstrass Elliptic function:

Doubly periodic functions, Weierstrass Elliptic function.

Unit III: Preliminaries of Nevanlinna Theory:

Entire functions, $M(r,f)$ and its properties (statements only), Meromorphic functions and their expansions, Definition of the functions $m(r,a)$, $N(r,a)$ and $T(r,f)$.
Nevanlinna's first fundamental theorem, Cartan's identity and convexity theorems, Orders of growth, Order of a meromorphic function, Comparative growth of $\log M(r)$ and $T(r)$, Nevanlinna's second fundamental theorem, Estimation of $S(r)$ (Statement only), Nevanlinna's theorem on deficient functions. Nevanlinna's five-point uniqueness theorem, Milloux theorem.

Unit IV: Introduction to several complex variables:

Functions of several complex variables, Power series in several complex variables, Region of convergence of power series, Associated radii of convergence, Analytic functions, Cauchy-Riemann equations, Cauchy's integral formula, Taylor's expansion, Cauchy's inequalities, Zeros and Singularities of analytic functions, Weierstrass preparation theorem (statement only).

Text Books:

1. A. I. Markushevich - Theory of Functions of a Complex Variable, (Vol. I, II, III).
2. E. T. Copson - An Introduction to the Theory of Functions of a Complex Variable.
3. E. C. Titchmarsh The Theory of Functions.
4. W. K. Hayman - Meromorphic Functions.
5. L. Yang - Value Distribution Theory.
6. R. C. Gunning and H. Rossi - Analytic Functions of Several Complex Variables.
7. Bochner and Martin - Several Complex Variables.
8. B. A. Fuks - An Introduction to the Theory of Analytic Functions of Several Complex Variables.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

Bachelor of Commerce (B.Com.)

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: B.COM.

Introduction :

B.Com. stands for Bachelor of Commerce, which is an undergraduate degree program in the field of commerce and business administration. It is a three-year degree program that focuses on various aspects of commerce such as accounting, economics, finance, taxation, and business management.

The B.Com. program is designed to provide students with a comprehensive understanding of the business world and to equip them with the skills and knowledge necessary to succeed in a wide range of careers. The curriculum covers a broad range of subjects, including financial accounting, cost accounting, business law, marketing, and human resource management.

After completing a B.Com. degree, students can pursue further studies in commerce, accounting, or business management at the postgraduate level. They can also opt for various job opportunities in the areas of accounting, finance, marketing, human resources, and many more.

(i) (a) Programme's Mission: The mission of the B.Com. program is to provide students with a solid foundation in the field of commerce and business administration. The program aims to prepare students to become skilled professionals who can contribute to the success of businesses and organizations in various industries.

The B.Com. program's mission is to impart knowledge and skills to students that enable them to:

- Develop a strong foundation in accounting, finance, economics, and other key areas of commerce.
- Understand the legal and ethical aspects of business operations.
- Develop critical thinking and problem-solving skills necessary to succeed in various business environments.
- Communicate effectively and work collaboratively with others.
- Demonstrate leadership qualities and entrepreneurship skills to start and run successful businesses.
- Develop a global perspective on business and commerce.

Overall, the B.Com. program's mission is to equip students with the skills, knowledge, and mindset necessary to thrive in the dynamic and competitive business world.

(b) Objectives:

The objectives of the B.Com. program are as follows:

- To provide students with a strong foundation in the principles and practices of commerce, including accounting, finance, economics, and business management.
- To enable students to develop critical thinking, analytical, and problem-solving skills necessary to succeed in the business world.
- To prepare students to understand and apply legal and ethical principles in their professional practice.
- To equip students with effective communication and teamwork skills to work collaboratively with others in a diverse and multicultural environment.
- To develop leadership and entrepreneurship skills to enable students to start and run successful businesses.
- To provide students with a global perspective on business and commerce, including an understanding of cultural differences, global markets, and international trade.
- To encourage students to engage in research, innovation, and creativity in the field of commerce and business management.
- To prepare students for further studies in commerce, accounting, or business management at the postgraduate level.

Overall, the objectives of the B.Com. program are designed to provide students with a well-rounded education in the field of commerce and business management, equipping them with the necessary knowledge, skills, and mindset to succeed in their future careers.

(ii) Relevance of the Programme with HEI's Mission and Goals:

The B.Com. program is relevant to the mission and goals of Higher Education Institutions (HEIs) as it aligns with their objective of providing quality education and preparing students for successful careers. Here are some ways in which the B.Com. program is aligned with the mission and goals of HEIs:

- Providing a comprehensive education: The B.Com. program covers a wide range of subjects, including accounting, finance, economics, and business management, providing students with a comprehensive education that prepares them for a range of careers in the business world. This aligns with the goal of HEIs to provide students with a well-rounded education that prepares them for success in their chosen fields.
- Developing critical thinking and problem-solving skills: The B.Com. program aims to develop students' critical thinking and problem-solving skills necessary to succeed in the business world. This aligns with the mission of HEIs to prepare students for the challenges of the real world by developing skills that are in demand in the job market.

- Encouraging research and innovation: The B.Com. program encourages students to engage in research and innovation in the field of commerce and business management. This aligns with the mission of HEIs to promote research and innovation and contribute to the advancement of knowledge in various fields.
- Developing global perspectives: The B.Com. program aims to provide students with a global perspective on business and commerce, including an understanding of cultural differences, global markets, and international trade. This aligns with the goal of HEIs to prepare students for success in a globalized world by providing them with a multicultural and diverse learning environment.
- Promoting leadership and entrepreneurship: The B.Com. program aims to develop leadership and entrepreneurship skills in students, enabling them to start and run successful businesses. This aligns with the goal of HEIs to produce graduates who are not only capable employees but also capable leaders and entrepreneurs who can contribute to the growth of the economy.

Overall, the B.Com. program is aligned with the mission and goals of HEIs, providing students with a quality education that prepares them for successful careers and contributes to the growth of society and the economy.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for the B.Com. program are students who have completed their 10+2 education and are interested in pursuing a career in the field of commerce and business management. The program is designed for students who have a keen interest in learning about accounting, finance, economics, and business management.

The B.Com. program is suitable for students who have a strong foundation in mathematics, as the program involves calculations and data analysis. The program is also suitable for students who have good communication skills, as the program involves collaboration, presentation, and report writing.

Prospective learners for the B.Com. program may also have an interest in pursuing further studies in commerce, accounting, or business management at the postgraduate level. They may also have a passion for entrepreneurship and aspire to start and run their own businesses.

Overall, the prospective target group of learners for the B.Com. program are students who are interested in pursuing a career in the field of commerce and business management, have a strong foundation in mathematics, and possess good communication skills. They may also have an interest in pursuing further studies in commerce or aspire to become entrepreneurs.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The B.Com. program is highly appropriate to be conducted in the Open and Distance Learning (ODL) mode, as it enables learners to acquire specific skills and competencies at their own pace and convenience. Here are some reasons why the B.Com. program is appropriate for the ODL mode:

- Flexibility: The ODL mode offers learners the flexibility to learn at their own pace and convenience. This is especially important for learners who are working or have other commitments, as they can study at a time and place that suits them.
- Access to learning resources: The ODL mode provides learners with access to a range of learning resources, including online materials, textbooks, and video lectures. This enables learners to acquire specific skills and competencies through self-directed learning.
- Personalized learning: The ODL mode allows learners to customize their learning experience according to their individual needs and interests. Learners can choose the subjects they want to study, and focus on specific areas where they need to improve their skills and competence.
- Collaborative learning: The ODL mode also offers opportunities for collaborative learning, where learners can interact with their peers and faculty members through online discussion forums, chat rooms, and video conferencing. This enables learners to share their knowledge and learn from each other.
- Cost-effective: The ODL mode is a cost-effective way of acquiring specific skills and competence, as it eliminates the need for learners to travel to a physical classroom and incur other expenses such as accommodation and transportation.

Overall, the B.Com. program is highly appropriate to be conducted in the ODL mode, as it offers learners flexibility, access to learning resources, personalized learning, collaborative learning, and is a cost-effective way of acquiring specific skills and competence.

(v) Instructional Design: The B.COM. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 3 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is three years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the B.Com. programme is a 120-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the B.Com. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: passed 12th standard in the commerce stream.

Fee Structure: B.COM. Previous & B.COM. Final:

Rs. 2730: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n C_i P_i}{\sum_1^n C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has nodisciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate

reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The B.Com. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
B.COM.	7,00000/-	3,00000/-	10,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms ensure that the B.Com. program meets the highest standards of academic excellence and provides students with the knowledge, skills, and competencies required for a successful career in the field of commerce and business management. Here are some quality assurance mechanisms and expected program outcomes of the B.Com. program:

- Accreditation: The B.Com. program should be accredited by a recognized accreditation body that ensures that the program meets the highest academic standards and adheres to the guidelines set by regulatory bodies.
- Curriculum design: The B.Com. program's curriculum should be designed to meet the needs of the

industry and reflect the latest trends and developments in the field of commerce and business management.

- Qualified faculty: The B.Com. program should have qualified faculty members with relevant industry experience and academic qualifications to teach and guide students.
- Pedagogy: The B.Com. program's pedagogy should be learner-centric, interactive, and should encourage critical thinking and problem-solving skills.
- Learning outcomes: The B.Com. program's learning outcomes should be clearly defined and measurable, and should focus on developing students' knowledge, skills, and competencies in the field of commerce and business management.

Expected program outcomes of the B.Com. program may include:

- Knowledge of accounting principles, financial management, and economics.
- Understanding of business management concepts and their application in real-world scenarios.
- Development of analytical and problem-solving skills.
- Communication and collaboration skills.
- Understanding of global business trends and practices.
- Ethical decision-making and social responsibility.

In conclusion, the B.Com. program's quality assurance mechanisms ensure that it meets the highest standards of academic excellence, and the expected program outcomes focus on developing students' knowledge, skills, and competencies required for a successful career in the field of commerce and business management.

B. Com. : Three-Year

B.Com.: Semester I

Paper BC 1.2: FINANCIAL ACCOUNTING

Duration: 3 hrs. **Marks: 100** **Lectures: 52, Practical: 26**

Objectives: The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions.

CONTENTS

Unit 1: (a) Theoretical Framework **3 Lectures**

i. Accounting as an information system, the users of financial accounting information and their needs. Qualitative characteristics of accounting, information. Functions, advantages and limitations of accounting. Branches of accounting. Bases of accounting; cash basis and accrual basis.
ii. The nature of financial accounting principles – Basic concepts and conventions: entity, money measurement, going concern, cost, realization, accruals, periodicity, consistency, prudence (conservatism), materiality and full disclosures.
iii. Financial accounting standards: Concept, benefits, procedure for issuing accounting standards in India. Salient features of First-Time Adoption of Indian Accounting Standard (Ind-AS) 101. International Financial Reporting Standards (IFRS): - Need and procedures.

(b) Accounting Process **2 Lectures**

From recording of a business transaction to preparation of trial balance including adjustments

(c) Computerised Accounting Systems **26 Practical Lab**

Computerised Accounting Systems: Computerized Accounts by using any popular accounting software: Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Funds Flow Statement, Cash Flow Statement

Selecting and shutting a Company; Backup and Restore data of a Company

Unit 2: (a) Business Income **8 Lectures**

i. Measurement of business income-Net income: the accounting period, the continuity doctrine and matching concept. Objectives of measurement.
ii. Revenue recognition: Recognition of expenses.
iii. The nature of depreciation. The accounting concept of depreciation. Factors in the measurement of depreciation. Methods of computing depreciation: straight line method and diminishing balance method; Disposal of depreciable assets-change of method.
iv. Inventories: Meaning. Significance of inventory valuation. Inventory Record Systems: periodic and perpetual. Methods: FIFO, LIFO and Weighted Average. Salient features of Indian Accounting Standard (IND-AS): 2

(b) Final Accounts **7 Lectures**

Capital and revenue expenditures and receipts: general introduction only. Preparation of financial statements of non-corporate business entities

Unit 3: Accounting for Hire-Purchase and Installment Systems, Consignment, and Joint Venture

i) **Accounting for Hire-Purchase** Transactions, Journal entries and ledger accounts in the books of Hire Vendors and Hire purchaser for large value items including Default and repossession.
ii) C***onsignment:*** Features, Accounting treatment in the books of the consignor and consignee.
iii) ***Joint Venture:*** Accounting procedures: Joint Bank Account, Records Maintained by Co-venturer of (a) all transactions (b) only his own transactions. (Memorandum joint venture account).

15 Lectures

Unit 4: Accounting for Inland Branches **9 Lectures**

Concept of dependent branches; accounting aspects; debtors system, stock and debtors system, branch final accounts system and whole sale basis system. Independent branches: concept-accounting treatment: important adjustment entries and preparation of consolidated profit and loss account and balance sheet.

Unit 5: Accounting for Dissolution of Partnership Firm

Accounting of Dissolution of the Partnership Firm Including Insolvency of partners, sale to a limited company and piecemeal distribution **8 Lectures**

Note:

1. **The relevant Indian Accounting Standards in line with the IFRS for all the above topics should be covered.**
2. **Any revision of relevant Indian Accounting Standard would become applicable immediately.**
3. **Examination Scheme for Computerised Accounts – Practical for 20 marks. The practical examination will be for 1 hour.**
4. **Theory Exam shall carry 80 marks**

Suggested Readings:

1. Robert N Anthony, David Hawkins, Kenneth A. Merchant, *Accounting: Text and Cases*. McGraw-Hill Education, 13th Ed. 2013.
2. Charles T. Horngren and Donna Philbrick, *Introduction to Financial Accounting,* Pearson Education.
3. J.R. Monga, *Financial Accounting: Concepts and Applications*. Mayur Paper Backs, New Delhi.
4. M.C.Shukla, T.S. Grewal and S.C.Gupta. *Advanced Accounts. Vol.-I. S.* Chand & Co., New Delhi.
5. S.N. Maheshwari, and. S. K. Maheshwari. *Financial Accounting*. Vikas Publishing House, New Delhi.
6. Deepak Sehgal. *Financial Accounting.* Vikas Publishing H House, New Delhi.
7. Bhushan Kumar Goyal and HN Tiwari, *Financial Accounting,* International Book House
8. Goldwin, Alderman and Sanyal, *Financial Accounting,* Cengage Learning.
9. Tulsian, P.C. *Financial Accounting,* Pearson Education.
10. *Compendium of Statements and Standards of Accounting*. The Institute of Chartered Accountants of India, New Delhi

Note: Latest edition of the text books should be used.

B.Com.: Semester I I

Paper BC 1.3: BUSINESS ORGANISATION AND MANAGEMENT

Duration: 3 hrs. Marks: 100 Lectures: 65

Objective: The course aims to provide basic knowledge to the students about the organisation and management of a business enterprise.

Contents

Unit 1: Foundation of Indian Business Lectures: 13

Manufacturing and service sectors; Small and medium enterprises; Problems and government policy. India's experience of liberalisation and globalisation. Technological innovations and skill development. 'Make in India' Movement. Social responsibility and ethics
Emerging opportunities in business; Franchising, Outsourcing, and E-commerce.

Unit 2:Business Enterprises Lectures: 13

Forms of Business Organisation: Sole Proprietorship, Joint Hindu Family Firm, Partnership firm, Joint Stock Company, Cooperative society; Limited Liability Partnership; Choice of Form of Organisation. Government - Business Interface; Rationale and Forms of Public Enterprises. International Business. Multinational Corporations.

Unit 3:Management and Organisation Lectures: 13

The Process of Management: Planning; Decision-making; Strategy Formulation.
Organizing: Basic Considerations; Departmentation – Functional, Project, Matrix and Network; Delegation and Decentalisation of Authority; Groups and Teams.

Unit 4:Leadership, Motivation and Control Lectures: 13

Leadership: Concept and Styles; Trait and Situational Theory of Leadership.
Motivation: Concept and Importance; Maslow Need Hierarchy Theory; Herzberg Two Factors Theory.
Communication: Process and Barriers; Control: Concept and Process.

Unit V: Functional Areas of Management Lectures: 13

Marketing Management: Marketing Concept; Marketing Mix; Product Life Cycle; Pricing Policies and Practices

Financial Management: Concept and Objectives; Sources of Funds – Equity Shares, Debentures, Venture Capital and Lease Finance. Securities Market, Role of SEBI.
Human Resource Management: Concept and Functions; Basic Dynamics of Employer - Employee Relations.

Suggested Readings:

1. Kaul, V.K., *Business Organisation and Management*, Pearson Education, New Delhi
2. Chhabra, T.N., *Business Organisation and Management*, Sun India Publications, New Delhi,
3. Gupta CB, *Modern Business Organisation*, Mayur Paperbacks, New Delhi
4. Koontz and Weihrich, *Essentials of Management*, McGraw Hill Education.
5. Basu, C. R., *Business Organization and Management*, McGraw Hill Education.
6. Jim, Barry, John Chandler, Heather Clark; *Organisation and Management*, Cengage Learning.
7. B.P. Singh and A.K.Singh, *Essentials of Management*, Excel Books
8. Buskirk, R.H., et al; *Concepts of Business: An Introduction to Business System*, Dryden Press,

9. Burton Gene and Manab Thakur; Management Today: Principles and Practice; Tata McGraw Hill, New Delhi.
10. Griffin, *Management Principles and Application*, Cengage Learning

(**Note:** Latest Editions of the above books may be used.)

Language-1
Paper BC 1.4: English
Common Syllabus to be provided by the respective Department

Paper- BC 2.2: BUSINESS LAW

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: The objective of the course is to impart basic knowledge of the important business legislation along with relevant case law.

Contents:

Unit 1: The Indian Contract Act, 1872: General Principles of Contract

a) Contract – meaning, characteristics and kinds

13 Lectures

b) Essentials of a valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects.
c) Void agreements
d) Discharge of a contract – modes of discharge, breach and remedies against breach of contract.
e) Contingent contracts
f) Quasi - contracts

Unit 2: The Indian Contract Act, 1872: Specific Contracts **13 Lectures**

a) Contract of Indemnity and Guarantee
b) Contract of Bailment
c) Contract of Agency

Unit 3: The Sale of Goods Act, 1930 **13 Lectures**

a) Contract of sale, meaning and difference between sale and agreement to sell.
b) Conditions and warranties
c) Transfer of ownership in goods including sale by a non-owner
d) Performance of contract of sale
e) Unpaid seller – meaning, rights of an unpaid seller against the goods and the buyer.

Unit 4: Partnership Laws **13 Lectures**

A) The Partnership Act, 1932

a. Nature and Characteristics of Partnership
b. Registration of a Partnership Firms

c. Types of Partners
d. Rights and Duties of Partners
e. Implied Authority of a Partner
f. Incoming and outgoing Partners
g. Mode of Dissolution of Partnership

B) The Limited Liability Partnership Act, 2008

a) Salient Features of LLP
b) Differences between LLP and Partnership, LLP and Company
c) LLP Agreement,
d) Partners and Designated Partners
e) Incorporation Document
f) Incorporation by Registration
g) Partners and their Relationship

Unit 5: The Negotiable Instruments Act 1881 13 Lectures

a) Meaning, Characteristics, and Types of Negotiable Instruments : Promissory Note, Bill of Exchange, Cheque
b) Holder and Holder in Due Course, Privileges of Holder in Due Course.
c) Negotiation: Types of Endorsements
d) Crossing of Cheque
e) Bouncing of Cheque

Suggested Readings:

1. M.C. Kuchhal, and Vivek Kuchhal, *Business Law*, Vikas Publishing House, New Delhi.
2. Avtar Singh, *Business Law*, Eastern Book Company, Lucknow.
3. Ravinder Kumar, *Legal Aspects of Business*, Cengage Learning
4. SN Maheshwari and SK Maheshwari, *Business Law*, National Publishing House, New Delhi.
5. Aggarwal S K, *Business Law*, Galgotia Publishers Company, New Delhi.
6. Bhushan Kumar Goyal and Jain Kinneri, *Business Laws*, International Book House
7. Sushma Arora, *Business Laws*, Taxmann Pulications.
8. Akhileshwar Pathak, *Legal Aspects of Business*, McGraw Hill Education, 6th ed.
9. P C Tulsian and Bharat Tulsian, *Business Law*, McGraw Hill Education
10. Sharma, J.P. and Sunaina Kanojia, *Business Laws*, Ane Books Pvt. Ltd., New Delhi.

B.Com.: Semester II

Paper BC 2.3. BUSINESS MATHEMATICS AND STATISTICS

Objective: The objective of this course is to familiarize students with the applications of mathematics and statistical techniques in business decision-making.

Notes :

1. Use of simple calculator is allowed.
2. Proofs of theorems / formulae are not required.
3. Trigonometric functions are not to be covered.

Part – A: Business Mathematics **Lectures: 26**

Unit 1: Matrices

Definition of a matrix. Types of matrices; Algebra of matrices. Calculation of values of determinants up to third order; Adjoint of a matrix; Finding inverse of a matrix through ad joint; Applications of matrices to solution of simple business and economic problems

Unit 2: Differential Calculus

Mathematical functions and their types – linear, quadratic, polynomial; Concepts of limit and continuity of a function; Concept of differentiation; Rules of differentiation – simple standard forms. Applications of differentiation – elasticity of demand and supply; Maxima and Minima of functions (involving second or third order derivatives) relating to cost, revenue and profit.

Unit 3: Basic Mathematics of Finance

Simple and compound interest Rates of interest – nominal, effective and continuous – their inter-relationships; Compounding and discounting of a sum using different types of rates

Part – B: Business Statistics **Lectures: 39**

Unit 1: Uni-variate Analysis

Measures of Central Tendency including arithmetic mean, geometric mean and harmonic mean: properties and applications; mode and median. Partition values - quartiles, deciles, and percentiles. Measures of Variation: absolute and relative. Range, quartile deviation and mean deviation; Variance and Standard deviation: calculation and properties.

Unit 2: Bi-variate Analysis

Simple Linear Correlation Analysis: Meaning, and measurement. Karl Pearson's co-efficient and Spearman's rank correlation

Simple Linear Regression Analysis: Regression equations and estimation. Relationship between correlation and regression coefficients

Unit 3: Time-based Data: Index Numbers and Time-Series Analysis

Meaning and uses of index numbers; Construction of index numbers: Aggregative and average of relatives – simple and weighted, Tests of adequacy of index numbers, Construction of consumer price indices.

Components of time series; additive and multiplicative models; Trend analysis: Finding trend by moving average method and Fitting of linear trend line using principle of least squares.

Suggested Readings:

1. Mizrahi and John Sullivan. *Mathematics for Business and Social Sciences*. Wiley and Sons.
2. Budnick, P. *Applied Mathematics.* McGraw Hill Publishing Co.
3. N. D. Vohra, *Business Mathematics and Statistics*, McGraw Hill Education (India) Pvt Ltd
4. J.K. Thukral, *Mathematics for Business Studies,* Mayur Publications
5. J. K. Singh, *Business Mathematics,* Himalaya Publishing House.
6. J. K. Sharma, *Business Statistics,* Pearson Education.
7. S.C. Gupta, *Fundamentals of Statistics,* Himalaya Publishing House.
8. S.P. Gupta and Archana Gupta, *Elementary Statistics,* Sultan Chand and Sons, New Delhi.
9. Richard Levin and David S. Rubin, *Statistics for Management,* Prentice Hall of India, New

Delhi.
10. M.R. Spiegel, *Theory and Problems of Statistics,* Schaum's Outlines Series, McGraw Hill Publishing Co.

Note: Latest edition of text books may be used.

B.Com. Semester II
Language-2

Paper BC 2.4: Hindi/Modern Indian Language

B.Com.: Semester III Paper BC 3.1: Company Law

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: The objective of the course is to impart basic knowledge of the provisions of the Companies Act 2013. Case studies involving issues in company law are required to be discussed.

UNIT 1: **15 Lectures**

Introduction – Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Characteristics of a company; lifting of corporate veil; types of companies including one-person company, small company and dormant company; association not for profit; illegal association; formation of company, on-line filing of documents, promoters, their legal position, pre-incorporation contract; on-line registration of a company.

UNIT 2: **15 Lectures**

Documents – Memorandum of association, Articles of association, Doctrine of constructive notice and indoor management prospectus-shelf and red herring prospectus, Misstatement in prospectus, GDR; Book building; Issue, allotment and forfeiture of share, Transmission of shares, Buyback and provisions regarding buyback; Issue of bonus shares.

UNIT 3: **15 Lectures**

Management: Classification of directors, women directors, independent director, small shareholder's director; Disqualifications, director identity number (DIN); Appointment; Legal positions, powers and duties; removal of directors; Key managerial personnel, managing director, manager;
Meetings of shareholders and board; Types of meeting, convening and conduct of meetings, postal ballot, meeting through video conferencing, e-voting; Committees of Board of Directors
- Audit Committee, Nomination and Remuneration Committee, Stakeholders Relationship Committee, Corporate Social Responsibility Committee.

UNIT 4: **10 Lectures**

Dividends, Accounts, Audit– Provisions relating to payment of Dividend, Provisions relating to Books of Account, Provisions relating to Audit, Auditors' Appointment, Rotation of Auditors, Auditors' Report, Secretarial Audit.

UNIT V: **10 Lectures**

Winding Up - Concept and modes of Winding Up.

Insider-Trading, Whistle-Blowing – Insider-Trading; meaning and legal provisions; Whistle- blowing: Concept and Mechanism.

Suggested Readings:

1. MC Kuchhal, *Modern Indian Company Law*, Shri Mahaveer Book Depot (Publishers),Delhi.
2. GK Kapoor and Sanjay Dhamija, *Company Law*, Bharat Law House, Delhi.
3. Anil Kumar, *Corporate Laws,* Indian Book House, Delhi
4. Reena Chadha and Sumant Chadha, *Corporate Laws*, Scholar Tech Press, Delhi.
5. Avtar Singh*, Introduction to Company Law,* Eastern Book Company
6. Ramaiya, *A Guide to Companies Act*, LexisNexis, Wadhwa and Buttersworth.
7. *Manual of Companies Act, Corporate Laws and SEBI Guideline,* Bharat Law House, NewDelhi,.
8. *A Compendium of Companies Act 2013, along with Rules*, by Taxmann Publications.
9. Gower and Davies, *Principles of Modern Company Law*, Sweet & Maxwell
10. Sharma, J.P., *An Easy Approach to Corporate Laws*, Ane Books Pvt. Ltd., New Delhi

B.Com.: Semester III

Paper BC 3.2: INCOME TAX LAW AND PRACTICE

Duration: 3 hrs. **Marks: 100** **Lectures: 52, Practical lab 26**

Objective: To provide basic knowledge and equip students with application of principles andprovisions of Income-tax Act, 1961 and the relevant Rules.

Unit 1: Introduction **10 Lectures**

Basic concepts: Income, agricultural income, person, assessee, assessment year, previous year, grosstotal income, total income, maximum marginal rate of tax; Permanent Account Number (PAN) ***Residential status***; Scope of total income on the basis of residential status Exempted income under section 10

Unit 2: Computation of Income under different heads-1 **18 Lectures**

Income from Salaries; Income from house property

Unit 3: Computation of Income under different heads-2 **10 Lectures**

Profits and gains of business or profession; Capital gains; Income from other sources

Unit 4: Computation of Total Income and Tax Liability **14 Lectures**

Income of other persons included in assessee's total income; Aggregation of income and set-off andcarry forward of losses; Deductions from gross total income; Rebates and reliefs Computation of total income of individuals and firms; Tax liability of an individual and a firm; Fiveleading cases decided by the Supreme Court

Unit 5: Preparation of Return of Income **Practical Lab 26**

Filing of returns: Manually, On-line filing of Returns of Income & TDS; Provision & Procedures ofCompulsory On-Line filing of returns for specified assesses.

Note:

1. **There shall be a practical examination of 20 Marks on E-filling of Income Tax Returns using a software utility tool. The student is required to fill appropriate Form and generate the XML file.**
2. **There shall be 4 Credit Hrs. for Lectures + one Credit hr. (Two Practical Periods per week perbatch) for Practical Lab + one credit Hr for Tutorials (per group)**
3. **Latest edition of text books and Software may be used.**

Suggested readings:

1. Singhania, Vinod K. and Monica Singhania. *Students' Guide to Income Tax, University Edition.*
Taxmann Publications Pvt. Ltd., New Delhi.

2. Ahuja, Girish and Ravi Gupta. *Systematic Approach to Income Tax.* Bharat Law House, Delhi.

Journals

1. *Income Tax Reports*. Company Law Institute of India Pvt. Ltd., Chennai.
2. *Taxman*. Taxman Allied Services Pvt. Ltd., New Delhi.
3. *Current Tax Reporter*. Current Tax Reporter, Jodhpur.

Software

1. Vinod Kumar Singhania, *e-filing of Income Tax Returns and Computation of Tax*, TaxmannPublication Pvt. Ltd, New Delhi. Latest version
2. 'Excel Utility' available at *incometaxindiaefiling.gov.in*

B.Com.: Semester III Language-3

Paper BC 3.3: Hindi/Modern Indian Language

B.Com.: Semester III
Paper BC 3.4: COMPUTER APPLICATIONS IN BUSINESS

Duration: 3 hrs. **Marks: 100** **Lectures: 26, Practical Lab 52**

Objectives: To provide computer skills and knowledge for commerce students and to enhance thestudent understands of usefulness of information technology tools for business operations.

Unit 1: Word Processing **3 Lectures, Practical Lab 6** Introduction to word Processing, Word processing concepts, Use of Templates, Working with worddocument: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Autotext; Bulletsand numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, Tables:Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge: including linkingwith Database; Printing documents

Creating Business Documents using the above facilities

Unit 2: Preparing Presentations **3 Lectures, Practical Lab 6**

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols,Media; Design; Transition; Animation; and Slideshow.
Creating Business Presentations using above facilities

Unit 3: Spreadsheet and its Business Applications 10 Lectures, Practical Lab 20 Spreadsheet concepts, Managing worksheets; Formatting, Entering data, Editing, and Printing a worksheet; Handling operators in formula, Project involving multiple spreadsheets, Organizing Chartsand graphs

Generally used Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time,Lookup and reference, Database, and Text functions

Unit 4: Creating Business Spreadsheet 10 Lectures, Practical Lab 20 Creating spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll statements;Capital Budgeting; Depreciation Accounting; Graphical representation of data; Frequency distributionand its statistical parameters; Correlation and Regression

Note:
1. The General Purpose Software referred in this course will be notified by the University Departments every three years. If the specific features, referred in the detailed course above, is notavailable in that software, to that extent it will be deemed to have been modified.
2. There shall be a practical examination of 100 Marks (Practical-80 Marks, Viva-10 Marks andWork Book- 10 Marks) and duration of Examination shall be 3 Hrs.
3. Teaching arrangement need to be made in the computer Lab
4. There shall be four lectures per class and 4 Practical Lab periods per batch to be taught in computer Lab.

B.Com.: Semester IV

Paper BC 4.1: BUSINESS COMMUNICATION

(English/Hindi) Duration: 3 hrs.

Marks: 100

Lectures: 65

Objective: To equip students of the B.Com course effectively to acquire skills in reading, writing,comprehension and communication, as also to use electronic media for business communication.

Content:

Unit 1: 13 lectures

Nature of Communication: Process of Communication, Types of Communication (verbal & NonVerbal), Importance of Communication, Different forms of

Communication
Barriers to Communication Causes, Linguistic Barriers, Psychological Barriers, Interpersonal Barriers,Cultural Barriers, Physical Barriers, Organizational Barriers

Unit 2 **13 lectures**

Business Correspondence: Letter Writing, presentation, Inviting quotations, Sending quotations, Placing orders, Inviting tenders, Sales letters, claim & adjustment letters and social correspondence,Memorandum, Inter -office Memo, Notices, Agenda, Minutes, Job application letter, preparing the Resume.

Unit 3 **13 lectures**

Report Writing: Business reports, Types, Characteristics, Importance, Elements of structure, Process ofwriting, Order of writing, the final draft, check lists for reports.

Unit 4 **13 lectures**

Vocabulary: Words often confused, Words often misspelt, Common errors in English.

Unit 5 **13 lectures**

Oral Presentation: Importance, Characteristics, Presentation Plan, Power point presentation, Visualaids.

Suggested Readings:

1. Bovee, and Thill, *Business Communication Today, Pearson Education*
2. Lesikar, R.V. & Flatley, M.E. Kathryn Rentz; *Business Communication Making Connections inDigital World*, 11th ed., McGraw Hill Education.
3. Shirley Taylor, *Communication for Business, Pearson Education*
4. Locker and Kaczmarek, *Business Communication: Building Critical Skills, TMH*
5. Leena Sen, *Communication Skills*, PHI Learning

B.Com.: Semester IV

Paper 4.2: CORPORATE ACCOUNTING

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objectives: To enable the students to acquire the basic knowledge of the corporate accounting and tolearn the techniques of preparing the financial statements.

Contents

Unit 1. Accounting for Share Capital & Debentures **12 Lectures**

Issue, forfeiture and reissue of forfeited shares: concept & process of book building; Issue of rights and bonus shares; Buy back of shares; Redemption of preference shares; Issue and Redemption of Debentures

Unit 2. Final Accounts **9 Lectures**

Preparation of profit and loss account and balance sheet of corporate entities,

excluding calculation of managerial remuneration, Disposal of company profits

Unit 3. Valuation of Goodwill and Valuation of Shares
Concepts and calculation: simple problem only **6 Lectures**

Unit 4. Amalgamation of Companies **12 Lectures**

Concepts and accounting treatment as per Accounting Standard: 14 (ICAI) (excluding inter- company holdings). Internal reconstruction: concepts and accounting treatment excluding scheme of reconstruction.

Unit 5. Accounts of Holding Companies/Parent Companies
Preparation of consolidated balance sheet with one subsidiary company; Relevant provisions of Accounting Standard: 21 (ICAI). **12Lectures**

Unit 6. Accounts of Banking Companies **7**
Lectures Difference between balance sheet of banking and non-banking companies; Prudential norms;Asset structure of a commercial bank; Non-performing assets (NPA)

Unit 7. Cash Flow Statement **7 Lectures**

Concept of funds, Preparation of cash flow statement as per Indian Accounting Standard (Ind- AS): 7.

Suggested Readings:

1. J.R. Monga, *Fudamentals of Corporate Accounting*. Mayur Paper Backs, New Delhi.
2. M.C. Shukla, T.S. Grewal, and S.C. Gupta. *Advanced Accounts*. Vol.-II. S. Chand & Co., NewDelhi.
3. S.N. Maheshwari, and S. K. Maheshwari. *Corporate Accounting*. Vikas Publishing House, NewDelhi.
4. Ashok Sehgal, Fundamentals of *Corporate Accounting*. Taxman Publication, New Delhi.
5. V.K. Goyal and Ruchi Goyal,. *Corporate Accounting*. PHI Learning.
6. Jain, S.P. and K.L. Narang. *Corporate Accounting*. Kalyani Publishers, New Delhi.
7. Bhushan Kumar Goyal, *Fundamentals of Corporate Accounting,* International Book House
8. P. C. Tulsian and Bharat Tulsian, Corporate Accounting, S.Chand
9. Amitabha Mukherjee, Mohammed Hanif, Corporate Accounting, McGraw Hill Education
10. Compendium of Statements and Standards of Accounting. The Institute of Chartered Accountants ofIndia, New Delhi.

B.Com.: Semester IV

Paper BC 4.3: COST ACCOUNTING

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: To acquaint the students with basic concepts used in cost accounting, various methods involved in cost ascertainment and cost accounting book keeping systems.

CONTENTS:

Unit 1: Introduction (6 Lectures)

Meaning, objectives and advantages of cost accounting; Difference between cost accounting and financial accounting; Cost concepts and classifications; Elements of cost; Installation of a costing system; Role of a cost accountant in an organisation

Unit 2: Elements of Cost: Material and Labour (14 Lectures)

a. *Materials*: Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost. Treatment of Material Losses
b. *Labour*: Accounting and Control of labour cost. Time keeping and time booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and the Incentive schemes- Halsey, Rowan, Taylor's Differential piece wage.

Unit 3: Elements of Cost: Overheads (8 Lectures)

Classification, allocation, apportionment and absorption of overheads; Under- and over-absorption; Capacity Levels and Costs; Treatments of certain items in costing like interest on capital, packing expenses, bad debts, research and development expenses; Activity based cost allocation.

Unit 4: Methods of Costing (28 Lectures)

Unit costing, Job costing, Contract costing, Process costing (process losses, valuation of work in progress, joint and by-products), Service costing (only transport).

Unit 5: Book Keeping in Cost Accounting (9 Lectures)

Integral and non-integral systems; Reconciliation of cost and financial accounts S**uggested Reading:**

1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan **,** ***Cost Accounting: A ManagerialEmphasis*****, Pearson Education.**
2. Jawahar Lal, *Cost Accounting*. McGraw Hill Education
3. Nigam, B.M. Lall and I.C. Jain. *Cost Accounting: Principles and Practice*. PHI Learning
4. Rajiv Goel, *Cost Accounting*. International Book House
5. Singh, Surender. *Cost Accounting,* Scholar Tech Press*,* New Delhi.
6. Jain, S.P. and K.L. Narang. *Cost Accounting: Principles and Methods*. Kalyani

Publishers
7. Arora, M.N. *Cost Accounting – Principles and Practice.* Vikas Publishing House, New Delhi.
8. Maheshwari, S.N. and S.N. Mittal. *Cost Accounting: Theory and Problems*. Shri Mahavir BookDepot, New Delhi.
9. Iyengar, S.P. Cost Accounting. Sultan Chand & Sons
10. H.V. Jhamb, *Fundamentals of Cost Accounting,* Ane Books Pvt. Ltd.

B.Com.:
Semester IV
Paper BC 4.4: E-Commerce

Duration: 3 hrs. **Marks: 100** **Lectures: 40,**
Practical Lab 26Objectives: To enable the student to become familiar with the mechanism for conducting business transactions through electronic means

Contents

Unit 1: Introduction: **(8 Lectures)**

Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, types of E-Commerce, e-commerce business models (introduction , key elements of a business model and categorizing major E-commerce business models), forces behind e-commerce.

Technology used in E-commerce: The dynamics of world wide web and internet(meaning, evolution and features) ; Designing, building and launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing vs. in-house development ofa website)

Unit 2: Security and Encryption: **(8 Lectures)**

Need and concepts, the e-commerce security environment: (dimension, definition and scope of e- security), security threats in the E-commerce environment (security intrusions and breaches, attacking methods like hacking, sniffing, cyber-vandalism etc.), technology solutions (Encryption, security channels of communication, protecting networks and protecting servers and clients),

Unit 3: IT Act 2000 and Cyber Crimes **(8 Lectures)**

IT Act 2000: Definitions, Digital signature, Electronic governance, Attribution, acknowledgement and dispatc of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers Penalties and adjudication, Appellate Tribunal, Offences and Cyber-crimes

Unit 4: E-payment System: **(8 Lectures, 4 Practical Lab)** Models and methods of e–payments (Debit Card, Credit Card, Smart Cards, e-money), digital signatures(procedure, working and legal position), payment gateways, online banking (meaning, concepts,importance, electronic fund transfer, automated clearing house, automated ledger posting), risksinvolved in e-payments.

Unit 5: On-line Business Transactions: **(8 Lectures, 4 Practical Lab)**

Meaning, purpose, advantages and disadvantages of transacting online, E-commerce applications in various industries like {banking, insurance, payment of utility bills, online

marketing, e-tailing (popularity, benefits, problems and features), online services (financial, travel and career), auctions, online portal, online learning, publishing and entertainment} Online shopping (amazon, snapdeal,alibaba, flipkart, etc.)

Unit 6: Website designing (18 Practical Lab) Introduction to HTML; tags and attributes: Text Formatting, Fonts, Hypertext Links, Tables, Images,Lists, Forms, Frames, Cascading Style Sheets.

Suggested Readings

1. Kenneth C. Laudon and Carlo Guercio Traver, *E-Commerce*, Pearson Education.
2. David Whiteley, *E-commerce: Strategy, Technology and Applications*, McGraw Hill Education
3. Bharat Bhaskar, *Electronic Commerce: Framework, Technology and Application, 4th Ed.,* McGraw Hill Education
4. PT Joseph, *E-Commerce: An Indian Perspective*, PHI Learning
5. KK Bajaj and Debjani Nag, *E-commerce,* McGraw Hill Education
6. TN Chhabra, *E-Commerce,* Dhanpat Rai & Co.
7. Sushila Madan, *E-Commerce,* Taxmann
8. TN Chhabra, Hem Chand Jain, and Aruna Jain, *An Introduction to HTML*, Dhanpat Rai & Co.

B. Com.: Semester V
Paper BC 5.1 (a): HUMAN RESOURCE MANAGEMENT

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: The objective of the course is to acquaint students with the techniques and principles to manage human resource of an organisation.

Unit 1: Introduction **13 Lectures**

Human Resource Management: Concept and Functions, Role, Status and competencies of HR Manager, HR Policies, Evolution of HRM, HRM vs HRD. Emerging Challenges of Human Resource Management; Workforce diversity; Empowerment; Downsizing; VRS; Human Resource Information System

Unit 2: Acquisition of Human Resource **13 Lectures**

Human Resource Planning- Quantitative and Qualitative dimensions; job analysis – job description and job specification; Recruitment – Concept and sources; Selection – Concept and process; test andinterview; placement and induction

Unit 3: Training and Development 13 Lectures

Concept and Importance; Identifying Training and Development Needs; Designing Training Programmes; Role-Specific and Competency-Based Training; Evaluating Training Effectiveness; Training Process Outsourcing; Management Development; Career

Development.

Unit 4: Performance Appraisal **13 Lectures**

Nature, objectives and importance; Modern techniques of performance appraisal; potential appraisal and employee counseling; job changes - transfers and promotions; Compensation: concept and policies; job evaluation; methods of wage payments and incentive plans; fringe benefits; performance linked compensation.

Unit 5: Maintenance **13 Lectures**

Employee health and safety; employee welfare; social security; Employer-Employee relations- an overview; grievance-handling and redressal; Industrial Disputes: causes and settlement machinery

Suggested Readings:

1. Gary Dessler. *A Framework* for *Human Resource Management*. Pearson Education.
2. DeCenzo, D.A. and S.P. Robbins, *Personnel/Human Resource Management*, Pearson Education.
3. Bohlendar and Snell, *Principles of Human Resource Management,* Cengage Learning
4. Ivancevich, John M. *Human Resource Management*. McGraw Hill.
5. Wreather and Davis. *Human Resource Management*. Pearson Education.
6. Robert L. Mathis and John H. Jackson. *Human Resource Management*. Cengage Learning.
7. TN Chhabra, *Human Resource Management,* Dhanpat Rai & Co., Delhi
8. Biswajeet Patttanayak, *Human Resource Management, PHI Learning*
9. Neeru Kapoor*, Human Resource Management,* Taxmann Publication

B. Com.: Semester V

Paper BC 5.1 (b): PRINCIPLES OF MARKETING

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing.

Contents:

Unit 1: Introduction: **13 Lectures**

Nature, scope and importance of marketing; Evolution of marketing; Selling vs Marketing; Marketing mix, Marketing environment: concept, importance, and components (Economic, Demographic, Technological, Natural, Socio-Cultural and Legal).

Unit 2: **13 Lectures**

a. Consumer Behaviour: Nature and Importance**,** Consumer buying decision process; Factors influencing consumer buying behaviour.

b. Market segmentation: concept, importance and bases; Target market selection; Positioning concept, importance and bases; Product differentiation vs. market segmentation.

Unit 3: Product: **13 Lectures**

Concept and importance, Product classifications; Concept of product mix; Branding, packaging and labeling; Product-Support Services; Product life-cycle; New Product Development Process; Consumer adoption process.

Unit 4: **13 Lectures**

a. **Pricing:** Significance. Factors affecting price of a product. Pricing policies and strategies.

b. **Distribution Channels and Physical Distribution:** Channels of distribution - meaning and importance; Types of distribution channels; Functions of middle man; Factors affecting choice of distribution channel; Wholesaling and retailing; Types of Retailers; e-tailing, Physical Distribution.

Unit 5: 13 Lectures

a. **Promotion:** Nature and importance of promotion; Communication process; Types of promotion: advertising, personal selling, public relations & sales promotion, and their distinctive characteristics;Promotion mix and factors affecting promotion mix decisions;

b. **Recent developments in marketing:** Social Marketing, online marketing, direct marketing, services marketing, green marketing, Rural marketing; Consumerism

Suggested Readings:

1. Kotler, Philip, Gary Armstrong, Prafulla Agnihotri and Ehsanul Haque. *Principles of Marketing*.13th edition. Pearson Education.
2. Michael, J. Etzel, Bruce J. Walker, William J Stanton and Ajay Pandit. *Marketing: Concepts andCases.* (Special Indian Edition)., McGraw Hill Education
3. William D. Perreault, and McCarthy, E. Jerome., *Basic Marketing*. Pearson Education.
4. Majaro, Simon. *The Essence of Marketing*. Pearson Education, New Delhi.
5. The Consumer Protection Act 1986.
6. Iacobucci and Kapoor, *Marketing Management: A South Asian Perspective*. Cengage Learning.
7. Dhruv Grewal, Michael Levy, *Marketing,* McGraw Hill Education.
8. Chhabra, T.N., and S. K. Grover. *Marketing Management.* Fourth Edition. Dhanpat Rai &Company.
9. Neeru Kapoor, *Principles of Marketing*, PHI Learning
10. Rajendra Maheshwari, *Principles of Marketing*, International Book House

B. Com.: Semester V

Paper BC 5.1 (c): AUDITING AND CORPORATE GOVERNANCE

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: To provide knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and to give an overview of the principles of Corporate Governance and Corporate Social Responsibility

Contents:

Unit 1: Introduction (11 Lectures)

Auditing: Introduction, Meaning, Objectives, Basic Principles and Techniques; Classification of Audit, Audit Planning, Internal Control – Internal Check and Internal Audit; Audit Procedure – Vouching and verification of Assets & Liabilities**.**

Unit 2: Audit of Companies (11 Lectures)

Audit of Limited Companies: Company Auditor- Qualifications and disqualifications, Appointment, Rotation, Removal, Remuneration, Rights and Duties Auditor's Report-Contents and Types. Liabilities of Statutory Auditors under the Companies Act 2013

Unit 3: Special Areas of Audit **(11 Lectures)**

Special Areas of Audit: Special features of Cost audit, Tax audit, and Management audit;Recent Trends in Auditing: Basic considerations of audit in EDP Environment;
Auditing Standards; Relevant Case Studies/Problems;

Unit 4: Corporate Governance **(11 Lectures)**

Conceptual framework of Corporate Governance: Theories & Models, Broad Committees; Corporate Governance Reforms. Major Corporate Scandals in India and Abroad: Common Governance Problems Noticed in various Corporate Failures. Codes & Standards on Corporate Governance

Unit 5: Business Ethics **(10 Lectures)**

Morality and ethics, business values and ethics, approaches and practices of business ethics, corporate ethics, ethics program, codes of ethics, ethics committee; Ethical Behaviour: Concepts and advantages; Rating Agencies; Green Governance; Clause 49 and Listing Agreement

Unit 6: Corporate Social Responsibility (CSR): (11 Lectures) Concept of CSR, Corporate Philanthropy, Strategic Planning and Corporate Social Responsibility;Relationship of CSR with Corporate Sustainability; CSR and Business Ethics, CSR and CorporateGovernance; CSR provisions under the Companies Act 2013; CSR Committee; CSR Models, Codes,and Standards on CSR

Suggested Readings:

1. Ravinder Kumar and Virender Sharma, *Auditing Principles and Practice*, PHI Learning
2. Aruna Jha, *Auditing*. Taxmann Publication.
3. A. K. Singh, and Gupta Lovleen. *Auditing Theory and Practice*. Galgotia Publishing Company.
4. Anil Kumar, *Corporate Governance: Theory and Practice*, Indian Book House, New Delhi
5. MC Kuchhal, *Modern Indian Company Law*, Shri Mahavir Book Depot. (Publishers). (RelevantChapters)
6. KV Bhanumurthy and Usha Krishna, *Politics, Ethics and Social Responsibility of Business,*
   Pearson Education
7. N Balasubramanian, A Casebook on Corporate Governance and Stewardship, McGraw HillEducation
8. B.N. Ghosh, Business Ethics and Corporate Governance, McGraw Hill Education
9. S K Mandal*, Ethics in Business and Corporate Governance*, McGraw Hill Education
10. Bob Tricker, *Corporate Governance-Principles, Policies, and Practice* (Indian Edition), OxfordUniversity Press
11. Christine Mallin, *Corporate Governance (Indian Edition*), Oxford University Press
12. Relevant Publications of ICAI on *Auditing* (CARO).
13. Sharma, J.P., *Corporate Governance, Business Ethics, and CSR*, Ane Books Pvt Ltd, New Delhi

Paper BC 5.2: (a): FUNDAMENTALS OF FINANCIAL MANAGEMENT

Duration: 3 hrs. **Marks: 100**

Lectures: 65 Objective: To familiarize the students with the principles and practices of financial management.

CONTENTS

Unit 1: Introduction **(8 Lectures)**

Nature, scope and objective of Financial Management, Time value of money, Risk and return (including Capital Asset Pricing Model), Valuation of securities – Bonds and Equities.

Unit 2: Investment Decision

The Capital Budgeting Process, Cash flow Estimation, Payback Period Method, Accounting Rate of Return, Net Present Value (NPV), Net Terminal Value, Internal Rate of Return (IRR), Profitability Index, Capital budgeting under Risk – Certainty Equivalent Approach and Risk- Adjusted Discount Rate. **(20 Lectures)**

Unit 3: Financing Decision

Cost of Capital and Financing Decision: Sources of long-term financing Estimation of components of cost of capital. Methods for Calculating cost of equity capital, Cost of Retained Earnings, Cost of Debt and Cost of Preference Capital, Weighted Average cost of capital (WACC) and Marginal cost of capital. Capital structure – Theories of Capital Structure (Net Income, Net Operating Income, MM Hypothesis, Traditional Approach). Operating and financial leverage. Determinants of capital structure. **(20 Lectures)**

Unit 4: Dividend Decisions **(12 Lectures)**

Theories for Relevance and irrelevance of dividend decision for corporate valuation; Cash and stock dividends; Dividend policies in practice

Unit 5: Working Capital Decisions

Concepts of working capital, the risk-return trade off, sources of short-term finance, working capital estimation, cash management, receivables management, inventory management and payables management. **(15 Lectures)**

Suggested Readings

1. James C. Van Horne and Sanjay Dhamija, *Financial Management and Policy*, PearsonEducation
2. Levy H. and M. Sarnat . *Principles of Financial Management*. Pearson Education
3. Joy, O.M. *Introduction to Financial Management*. Mc Graw Hill Education.
4. Brigham and Houston, *Fundamentals of Financial Management,* Cengage Learning
5. Khan and Jain. Basic *Financial Management*, McGraw Hill Education
6. Chandra, P. *Fundamentals of Financial Management*. McGraw Hill Education
7. Singh, J.K. *Financial Management- text and Problems*. 2nd Ed. Dhanpat Rai and Company,Delhi.
8. Rustagi, R.P. *Fundamentals of Financial Management*. Taxmann Publication Pvt. Ltd.
9. Singh, Surender and Kaur, Rajeev. *Fundamentals of Financial Management*. Mayur

Paperback,New Delhi.
10. Pandey, I.M. *Financial Management*. Vikas Publications.
11. Bhabatosh Banerjee, *Fundamentals of Financial Management,* PHI Learning

B. Com.: Semester V

Paper BC 5.2 (b): INDIRECT TAX LAW

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: To provide basic knowledge and equip students with application of principles andprovisions of Service Tax, VAT, Central Excise, and Customs Laws.

Contents:

Unit 1: Service Tax-I **(18 Lectures)**

Service tax – concepts and general principles, Charge of service tax and taxable services,

Unit 2: Service Tax-II **(18 Lectures)**

Valuation of taxable services, Payment of service tax and filing of returns, Penalties, CENVAT Credit

Unit 3: VAT **(9 Lectures)**

VAT – concepts and general principles, Calculation of VAT Liability including input Tax Credits, SmallDealers and Composition Scheme, VAT Procedures

Unit 4: Central Excise **(10 Lectures)**

Central Excise Law in brief – Goods, Excisable goods, Manufacture and Manufacturer, Valuation,CENVAT, Basic procedures, Export, SSI, Job Work

Unit 5: Customs laws **(10 Lectures)**

Basic concepts of customs law, Territorial waters, high seas, Types of custom duties – Basic, Countervailing & Anti- Dumping Duty, Safeguard Duty, Valuation, Customs Procedures, Import and Export Procedures, Baggage, Exemptions

Suggested Readings:

1. Singhania Vinod K. and Monica Singhania, *Students' Guide to Indirect Taxes,* Taxmann PublicationsPvt. Ltd., Delhi.
2. V.S. Datey. *Indirect Tax Law and practice,* Taxmann Publications Pvt. Ltd., Delhi, Latest edition.
2. Sanjeev Kumar. *Systematic Approach to Indirect Tax*es, Latest edition.
3. S. S. Gupta. *Service Tax* -How to *meet your obligation* Taxmann Publications Pvt. Ltd., Delhi,Latest edition.
4. Grish Ahuja and Ravi Gupta, *Indirect Taxes*, Flair Publication Pvt. Ltd.

B. Com.:
Semester V Paper BC
5.3:
Entrepreneurship

Duration: 3 hrs. **Marks: 100** **Lectures: 50**

Objective: The purpose of the paper is to orient the learner toward entrepreneurship as a career optionand creative thinking and behavior.

Contents:

Unit 1: Introduction

Meaning, elements, determinants and importance of entrepreneurship and creative behavior; Entrepreneurship and creative response to the society' problems and at work; Dimensions of entrepreneurship: intrapreneurship, technopreneurship, cultural entrepreneurship, international entrepreneurship, netpreneurship, ecopreneurship, and social entrepreneurship **(10 Lectures)**

Unit 2: Entrepreneurship and Micro, Small and Medium Enterprises

Concept of business groups and role of business houses and family business in India; The contemporary role models in Indian business: their values, business philosophy and behavioural orientations; Conflict in family business and its resolution **(10 Lectures)**

Unit 3: Public and private system of stimulation, support and sustainability of entrepreneurship. Requirement, availability and access to finance, marketing assistance, technology, and industrial accommodation, Role of industries/entrepreneur's associations and self-help groups, The concept, role and functions of business incubators, angel investors, venture capital and private equity fund.

(10 Lectures)

Unit 4: Sources of business ideas and tests of feasibility.

Significance of writing the business plan/ project proposal; Contents of business plan/ project proposal; Designing business processes, location, layout, operation, planning & control; preparation of project report (various aspects of the project report such as size of investment, nature of product, market potential may be covered); Project submission/ presentation and appraisal thereof by external agencies, such as financial/non-financial institutions **(10 Lectures)**

Unit 5: Mobilising Resources **(10 Lectures)**

Mobilising resources for start-up. Accommodation and utilities; Preliminary contracts with the vendors, suppliers, bankers, principal customers; Contract management: Basic start-up problems

Suggested Readings:

1. Kuratko and Rao, *Entrepreneurship: A South Asian Perspective,* Cengage Learning.
2. Robert Hisrich, Michael Peters, Dean Shepherd, *Entrepreneurship,* McGraw-Hill Education
3. Desai, Vasant. *Dynamics of Entrepreneurial Development and Management*. Mumbai, HimalayaPublishing House.
4. Dollinger, Mare J. *Entrepreneurship: Strategies and Resources*. Illinois, Irwin.
5. Holt, David H. *Entrepreneurship: New Venture Creation*. Prentice-Hall of India, New Delhi.
6. Plsek, Paul E. *Creativity, Innovation and Quality*. (Eastern Economic Edition), New Delhi:Prentice-Hall of India. ISBN-81-203-1690-8.
7. Singh, Nagendra P. *Emerging Trends in Entrepreneurship Development*. New Delhi: ASEED.
8. SS Khanka, *Entrepreneurial Development,* S. Chand & Co, Delhi.
9. K Ramachandran, *Entrepreneurship Development,* McGraw-Hill Education
10. SIDBI Reports on Small Scale Industries Sector.

B. Com.: Semester V

Paper BC 5.4: PRINCIPLES OF MICRO ECONOMICS

Duration: 3 hrs. Max. Marks: 100 Lectures: 65

Unit 1: Introduction Lectures 12

(a). ***Demand and Supply:*** Determinants of demand, movements vs. shift in demand curve,Determinants of Supply, Movement along a supply curve vs. shift in supply curve; - Market equilibrium and price determination.

(b). Elasticity of demand and supply. (c). Application of demand and supply.

Unit 2: Consumer Theory Lectures 18

Ordinal Utility theory: (Indifference curve approach): Consumer's preferences; Interference curves; Budget line; Consumer's equilibrium; Income and substitution effect; Price consumption curve and the derivation of demand curve for a commodity; Criticisms of the lawof demand.

Unit 3: Production and Cost Lectures 12

(a). Production: Firm as an agent of production. Concepts of Production function. Law of variable proportions; Isoquants; Return to scale. Economics and Diseconomies of scale.

(b). Costs: Costs in the short run. Costs in the long run, Profit maximization and cost minimization.Equilibrium of the firm, Technological Change: the very long run.

Unit 4: Market Structure Lectures 10

(a). ***Perfect Competition:*** Assumption; Theory of a firm under perfect competition; Demand and Revenue; Equilibrium of the firm in the short run and long run, The long run industry supply curve: increasing, decreasing and constant cost industry. Allocation efficiencyunder perfect competition

(b). ***Monopoly:*** Short-run and long-run equilibrium of monopoly firm; Concept of supply curve under monopoly; Allocation inefficiency and dead-weight loss monopoly; Price discrimination.

(c). ***Imperfect Competition:*** Difference between perfect competitions, monopoly and imperfect competition;

(i) Monopolistic Competition: Assumption; Short – run Equilibrium; Long run Equilibrium; Concepts of excess capacity; Empirical relevance.

(ii) Oligopoly: Causes for the existence of oligopolistic firms in the market rather than perfect Competition; Cooperative vs. Non cooperative Behaviour and dilemma of oligopolistic firms.

Unit 5: Income Distribution and Factor Pricing Lectures 13

Demand for factors. Supply of factor, backward bending supply curve for labor concepts of economic rent; Functional Distribution of Income.

1. Pindyck, R.S., D. L. Rubinfeld and P. L. Mehta; *Microeconomics*, Pearson Education.
2. N. Gregory mankiw, *Principles of Micro Economics*, Cengage Learning
3. Maddala G.S. and E. Miller; *Microeconomics: Theory and Applications,* McGraw-Hill Education.
4. Salvatore, D. *Schaum's Outline: Microeconomic Theory,* McGraw-Hill, Education.
5. Case and Fair, *Principles of Micro Economics,* Pearson Education
6. Koutsiyannis, *Modern Micro Economic Theory.*
7. C Snyder*, Microeconomic Theory: Basic Principles and Extensions,* Cengage Learning
8. Bilas, Richard A., *Microeconomics Theory: A Graphical Analysis,* McGraw-Hill Education.
9. Paul A Samuelson, William D Nordhaus, *Microeconomics*, McGraw-Hill Education.
10. Amit Sachdeva, *Micro Economics*, Kusum Lata Publishers

B. Com.: Semester VI

Paper BC 6.1 (a): CORPORATE TAX PLANNING

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: To provide Basic knowledge of corporate tax planning and its impact on decision-making.

Unit 1: Introduction **9 Lectures**

Tax planning, tax management, tax evasion, tax avoidance; Corporate tax in India; Types of companies; Residential status of companies and tax incidence; Tax liability and minimum alternate tax; Tax on distributed profits

Unit 2: Tax planning-1 **12 Lectures**

Tax planning with reference to setting up of a new business: Locational aspect, nature of business, form of organization;
Tax planning with reference to financial management decision - Capital structure, dividend including deemed dividend and bonus shares;
Tax planning with reference to sale of scientific research assets

Unit 3: Tax planning-2 **15 Lectures**

Tax planning with reference to specific management decisions - Make or buy; own or lease; repair orreplace
Tax planning with reference to employees' remuneration
Tax planning with reference to receipt of insurance compensation
Tax planning with reference to distribution of assets at the time of liquidation

Unit 4: Special provisions relating to non-residents **12 Lectures**

Double taxation relief; Provisions regulating transfer pricing; Advance rulings; Advance pricingagreement

Unit 5:Tax planning with reference to business restructuring **17 Lectures**

Amalgamation, Demerger, Slump sale, Conversion of sole proprietary concern/partnership firm intocompany, Conversion of company into LLP, Transfer of assets between holding and subsidiarycompanies

Suggested Readings:

1. Vinod K. Singhania and Monica Singhania, *Corporate Tax Planning.* Taxmann Publications Pvt.Ltd., New Delhi.
2. Girish Ahuja and Ravi Gupta. *Corporate Tax Planning and Management*. Bharat Law House,Delhi.
3. Shuklendra Acharya and M.G. Gurha. *Tax Planning under Direct Taxes*. Modern LawPublication, Allahabad.
4. D.P. Mittal, *Law of Transfer Pricing*. Taxmann Publications Pvt. Ltd., New Delhi.
5. IAS – 12 and AS – 22.
6. T.P. Ghosh, *IFRS,* Taxmann Publications Pvt. Ltd. New Delhi.

Journals

1. *Income Tax Reports*, Company Law Institute of India Pvt. Ltd., Chennai.
2. *Taxman,* Taxmann Allied Services Pvt. Ltd., New Delhi.
3. *Current Tax Reporter***,** Current Tax Reporter, Jodhpur

B. Com.: Semester VI

Paper BC 6.1 (b): Banking and Insurance

Duration: 3 hrs. **Marks: 100**

Lectures: 65Objective: To impart knowledge about the basic principles of the banking and insurance **Contents**

Unit 1: Introduction: **13 Lectures**

Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks,changing role of commercial banks, types of banks

Unit 2:Cheques and Paying Banker **13 Lectures**

Crossing and endorsement - meaning, definitions, types and rules of crossing.
Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder indue course, Concept of negligence.

Unit 3:Banking Lending **13 Lectures**

Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advances againstvarious securities.

Unit 4:Internet Banking **13 Lectures**

Meaning, Benefits, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/ Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronicpurse, Digital cash.

Unit V: Insurance **13 Lectures**

Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of utmost good faith, Indemnity, Economic function, Proximate cause, Subrogation and contribution, Types of insurance: Life and Non-life, Re-insurance, Risk and return

relationship, Need for coordination. Power, functions and Role of IRDA, Online Insurance

Suggested readings:

1. Agarwal, O.P., *Banking and Insurance*, Himalaya Publishing House
2. Satyadevi, C., *Financial Services Banking and Insurance*, S.Chand
3. Suneja, H.R., *Practical and Law of Banking*, Himalya Publishing House
4. Chabra, T.N., *Elements of Banking Law*, Dhanpat Rai and Sons
5. Arthur, C. and C. William Jr., *Risk Management and Insurance*, McGraw Hill
6. Saxena, G.S; *Legal Aspects of Banking Operations*, Sultan Chand and Sons
7. Varshney, P.N., *Banking Law and Practice*, Sultan Chand and Sons
8. Jyotsna Sethi and Nishwan Bhatia, *Elements of Banking and Insurance,* PHI Learning

B. Com.: Semester VI

Paper BC 6.1 (c): MANAGEMENT ACCOUNTING

Duration: 3 hours **Marks: 100** **Lectures: 65**

Objective: To impart the students, knowledge about the use of financial, cost and other data for the purpose of managerial planning, control and decision making.

COURSE CONTENTS:

Unit 1: Introduction **(6 Lectures)**

Meaning, Objectives, Nature and Scope of management accounting, Difference between cost accounting and management accounting, Cost control and Cost reduction, Cost management

Unit 2: Budgetary Control **(10 Lectures)**

Budgeting and Budgetary Control: Concept of budget, budgeting and budgetary control, objectives, merits, and limitations. Budget administration. Functional budgets. Fixed and flexible budgets. Zero base budgeting. Programme and performance budgeting.

Unit 3: Standard Costing **(12 Lectures)**

Standard Costing and Variance Analysis: Meaning of standard cost and standard costing, advantages, limitations and applications. Variance Analysis – material, labour, overheads and sales variances. Disposition of Variances, Control Ratios.

Unit 4: Marginal Costing **(12 Lectures)**

Absorption versus Variable Costing: Distinctive features and income determination. Cost-Volume- Profit Analysis, Profit / Volume ratio. Break-even analysis-algebraic and graphic methods. Angle of incidence, margin of safety, Key factor, determination of cost indifference point.

Unit 5: Decision Making **(20 Lectures)**

Steps in Decision Making Process, Concept of Relevant Costs and Benefits, Various short term decision making situations – profitable product mix, Acceptance or Rejection of special/ export offers, Make or buy, Addition or Elimination of a product line, sell or process further, operate or shut down. Pricing Decisions: Major factors influencing pricing decisions, various methods of pricing

Unit 5: Contemporary Issues **(5 Lectures)**

Responsibility Accounting: Concept, Significance, Different Responsibility Centres, Divisional Performance Measurement: Financial and Non-Financial measures. Transfer Pricing

Suggested Reading:

1. Charles T. Horngren, Gary L. Sundem, Dave Burgstahler, Jeff O. Schatzberg**.** ***Introduction toManagement Accounting*** , Pearson Education.
2. Anthony A. Atkinson, Robert S. Kaplan, Ella Mae Matsumura, S. Mark Young. *ManagementAccounting*. Dorling Kindersley(India) Pvt. Ltd.
3. Singh, Surender. *Management Accounting,* Scholar Tech Press, New Delhi.
4. Garrison H., Ray and Eric W. Noreen. *Managerial Accounting*. McGraw Hill.
5. Goel, Rajiv, *Management Accounting*. International Book House,
6. Arora, M.N. *Management Accounting*. Vikas Publishing House, New Delhi.
7. Maheshwari, S.N. and S.N. Mittal. *Management Accounting*. Shree Mahavir BookDepot, New Delhi.
8. Singh, S. K. and Gupta Lovleen. *Management Accounting – Theory and Practice*. PinnaclePublishing House.
9. Khan, M.Y. and Jain, P.K. *Management Accounting*. McGraw Hill Education
10. H.V. Jhamb, *Fundamentals of Management Accounting,* Ane Books Pvt. Ltd.

B. Com.: Semester VI

Paper BC 6.1 (d): Computerised Accounting System

Duration: 3 hrs. **Marks: 100** **Lectures: 52, Practical Lab: 52**

Objectives: This course seeks to enhance the skills needed for computerized accounting system andto enable the students to develop simple accounting applications.

Unit-1: Computerized Accounting: Using Generic Software **(12 Lectures, 12 Practical Lab)**

Taxation: TDS, VAT and Service Tax

Auditing in Computerized Accounting system: Statutory Audit, Voucher verification, Verification ofrelated party transaction, CAAT: Various Tools

Unit-2: Designing Computerised Accounting System **(24 Lectures, 24 Practical Lab)**

Designing Computerised Accounting System using a DBMS PackageCreating a voucher entry Form, Preparing ledgers with SQL, Form, and ReportPreparing Trial Balance with SQL and Report

Unit-3: Designing Accounting Support System (16 Lectures, 16 Practical Lab) Designing Supplier and customers System for Accounting using Form, Query, Module, and Report;Designing Payroll System for Accounting using Form, Query, Module, and Report

B. Com.: Semester VI
Paper BC 6.2 (a): INTERNATIONAL BUSINESS

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: The objective of the course is to familiarise the students with the concepts, importance and dynamics of international business and India's involvement with global business. The course also seeks to provide theoretical foundations of international business to the extent these are relevant to the global business operations and developments.

Unit 1: **13 Lectures**

a. *Introduction to International Business*: Globalisation and its importance in world economy; Impact of globalization; International business vs. domestic business: Complexities ofinternational business; Modes of entry into international business.
b. *International Business Environment*: National and foreign environments and their components - economic, cultural and political-legal environments

Unit –II **13 Lectures**

a. *Theories of International Trade* – an overview (Classical Theories, Product Life Cycle theory, Theory of National Competitive Advantage); Commercial Policy Instruments - tariff and non- tariff measures – difference in Impact on trade, types of tariff and non tariff barriers (Subsidy, Quota and Embargo in detail) ; Balance of payment account and its components.
b. *International Organizations and Arrangements*: WTO – Its objectives, principles, organizational structure and functioning; An overview of other organizations – UNCTAD,; Commodity and other trading agreements (OPEC).

Unit –III **13 Lectures**

a. *Regional Economic Co-operation*: Forms of regional groupings; Integration efforts among countries in Europe, North America and Asia (NAFTA, EU , ASEAN and SAARC) .
b. *International Financial Environment*: International financial system and institutions (IMF and World Bank – Objectives and Functions) ; Foreign exchange markets and risk management; Foreign investments - types and flows; Foreign investment in Indian perspective

Unit –IV **13 Lectures**

a. Organisational structure for international business operations; International business negotiations.
b. *Developments and Issues in International Business*: Outsourcing and its potentials

for India; Role of IT in international business; International business and ecological considerations.

Unit –V **13 Lectures**

a. Foreign Trade Promotion Measures and Organizations in India; Special economic zones (SEZs) and export oriented units (EOUs), ; Measures for promoting foreign investments into and from India; Indian joint ventures and acquisitions abroad.
b. Financing of foreign trade and payment terms – sources of trade finance (Banks, factoring, forfaiting, Banker's Acceptance and Corporate Guarantee) and forms of payment (Cash in advance, Letter of Credit, Documentary Collection, Open Account)

Suggested Readings:

1. Charles W.L. Hill and Arun Kumar Jain, *International Business*. New Delhi: McGraw HillEducation
2. Daniels John, D. Lee H. Radenbaugh and David P. Sullivan. *International Business*. PearsonEducation
3. Johnson, Derbe., and Colin Turner. *International Business - Themes & Issues in the ModernGlobal Economy*. London: Roultedge.
4. Sumati Varma, *International Business*, Pearson Education.
5. Cherunilam, Francis. *International Business: Text and Cases*. PHI Learning
6. Michael R. Czinkota. et al. International Business. Fortforth: The Dryden Press.
7. Bennett, Roger. *International Business*. Pearson Education.
8. Peng and Srivastav, *Global Business*, Cengage Learning

B. Com.: Semester VI

Paper BC 6.2 (b): Office Management and Secretarial Practice

Duration: 3 hrs. **Marks: 100**

Lectures: 65

Office and Office Management: Meaning of office. Functions of office – primary and administrative

management functions, importance of office, duties of the office manager, his qualities and essential qualifications. **(7 Lectures)**

Filing and Indexing: Filing and Indexing – Its meaning and importance, essentials of good filing, centralized vs. decentralized filing, system of classification, methods of filing and filing equipment, Weeding of old records, meaning and need for indexing, various types of indexing. **(7 Lectures)**

Unit 2:

Mail and Mailing Procedures: Mailing Procedures – meaning and importance of mail, centralization ofmail handling work, its advantages, room equipment and accessories, sorting tables and rack, letteropener, time and date stamps, postal franking machine, addressing machine, mailing scales, mailingthrough post, courier, email, appending files with email. Inward and outward mail – receiving, sorting,opening, recording, making, distributing, folding of letters sent, maintenance of peon book, dispatching,courier services, central receipt and dispatch. **(8**

Lectures) Forms and Stationery: Office Forms – introduction, meaning, importance of forms, advantages ofusing forms, disadvantages of using forms, type of forms, factors affecting forms design, principles ofform design, form control. Stationery – introduction, types of stationery used in offices, importance ofmanaging stationery, selection of stationery, essential requirements for a good system of dealing withstationery, purchasing principles, purchase procedure, standardization of stationery. **(5 Lectures)**

Unit 3:

Modern Office Equipments: Modern Office Equipment – Introduction, meaning and Importance of office automation, objectives of office mechanization, advantages, disadvantages, factors determining office mechanization. Kind of office machines: personal computers, photocopier, fax, telephone, telephone answering machine, dictating machines, Audio Visual Aids. **(5 Lectures)**

Budget: Budget - Annual, revised and estimated. Recurring and non-recurring heads of expenditure **(5**

Lectures) Audit: Audit process- Vouching, verification and valuation (in brief). Consumables/ Stock register andAsset register. Procedure for disposal of records and assets. **(5 Lectures)**

Unit 4:

Banking facilities: Types of accounts. Passbook and cheque book. Other forms used in banks. ATMand money transfer. **(5 Lectures)**

Abbreviations/Terms used in Offices: Explanation of abbreviations/terms used in offices in day-to-daywork,

Modes of Payment: Types of payments handled such as postal orders, Cheque (crossed/uncrossed),post-dated and pre-dated Cheques, stale Cheque, dishonored Cheque. **(5 Lectures)**

UNIT V:

Role of Secretary: Definition; Appointment; Duties and Responsibilities of a Personal Secretary; Qualifications for appointment as Personal Secretary. Modern technology and office communication, email, voice mail, internet, multimedia, scanner, video-conferencing, web-casting. Agenda and Minutes of Meeting. Drafting, fax-messages, email. Maintenance of appointment diary. **(13 Lectures)**

Suggested Reading:

1. Bhatia, R.C. *Principles of Office Management*, Lotus Press, New Delhi..
2. Leffingwell and Robbinson: *Text book of Office Management*, Tata McGraw-Hill.
3. Terry, George R: *Office Management and Control*.
4. Ghosh, Evam Aggarwal: *Karyalaya Prabandh*, Sultan Chand & Sons.
5. Duggal, B: *Office Management and Commercial Correspondence*, Kitab Mahal.

B. Com.: Semester VI

Paper BC 6.2 (c): FUNDAMENTALS OF INVESTMENT

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: To familiarize the students with different investment alternatives, introduce them to the framework of their analysis and valuation and highlight the role of investor protection.

Contents

Unit 1: The Investment Environment **(10 Lectures)**

The investment decision process, Types of Investments – Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, sources of financial information, Concept of return and risk, Impact of Taxes and Inflation on return.

Unit 2: Fixed Income Securities **(15 Lectures)**

Bond features, types of bonds, estimating bond yields, Bond Valuation types of bond risks, default risk and credit rating.

Unit 3: Approaches to Equity Analysis **(15 Lectures)** Introductions to Fundamental Analysis, Technical Analysis and Efficient Market Hypothesis, dividendcapitalisation models, and price-earnings multiple approach to equity valuation.

Unit 4:Portfolio Analysis and Financial Derivatives **(15 Lectures)** Portfolio and Diversification, Portfolio Risk and Return; Mutual Funds; Introduction to FinancialDerivatives; Financial Derivatives Markets in India

Unit 5: Investor Protection **(10 Lectures)**

Role of SEBI and stock exchanges in investor protection; Investor grievances and their redressal system,insider trading, investors' awareness and activism

Suggested Readings

1. C.P. Jones, *Investments Analysis and Management*, Wiley, 8th ed.
2. Prasanna Chandra, *Investment Analysis and Portfolio Management*, McGraw Hill Education
3. R.P. Rustogi, *Fundamentals of Investment,* Sultan Chand & Sons, New Delhi.
4. N.D. Vohra and B.R. Bagri, *Futures and Options*, McGraw Hill Education
5. Mayo, *An Introduction to Investment,* Cengage Learning.

B. Com.: Semester VI
Paper BC 6.2 (d): Consumer Protection

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objective: This paper seeks to familarise the students with of their rights as a consumer, the social framework of consumer rights and legal framework of protecting consumer rights. It also provides an understanding of the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards. The student

should be able to comprehend the business firms' interface with consumers and the consumer related regulatory and business environment.

Unit 1: Conceptual Framework 13Lectures

Consumer and Markets: Concept of Consumer, Nature of markets, Concept of Price in Retail andWholesale, Maximum Retail Price (MRP) and Local Taxes, Fair Price, labeling and packaging **Experiencing and Voicing Dissatisfaction**: Consumer Satisfaction/dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Internal and External Complaint handling: Corporate Redress Systems and Public Redress Systems

Unit 2: The Consumer Protection Act, 1986 (CPA) 13 Lecture

Objectives and Basic Concepts: Consumer, goods, service, defect in goods, deficiency in service,spurious goods and services, unfair trade practice, restrictive trade practice.

Organizational set-up under the Consumer Protection Act: Advisory Bodies: Consumer ProtectionCouncils at the Central, State and District Levels, Basic Consumer Rights; Adjudicatory Bodies:District Forums, State Commissions, National Commission: Their Composition, Powers, and Jurisdiction (Pecuniary and Territorial), Role of Supreme Court under the CPA.

Unit 3: Grievance Redress Mechanism under the Consumer Protection Act, 1986:13 lectures

Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy to be be provided; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties.

Seven Leading Cases decided under Consumer Protection Act: Medical Negligence; Banking; Insurance; Housing & Real Estate; Electricity, Water, and Telecom Services; Education; Defective Product; Unfair Trade Practice.

Unit 4: Industry Regulators and Consumer Complaint Redress Mechanism 13 lectures

i. Banking: RBI and Banking Ombudsman
ii. Insurance: IRDA and Insurance Ombudsman
iii. Telecommunication: TRAI
iv. Food Products: FSSAI (an overview)
v. Electricity Supply: Electricity Regulatory Commission
vi. Advertising: ASCI

Unit 5: Consumerism in India 13 Lectures

Consumer Movement in India:; Evolution of Consumer Movement in India. Formation of consumer organizations and their role in consumer protection, Recent developments in Consumer Protection in India, National Consumer Helpline, Citizens Charter, Product testing.

Quality and Standardization: Voluntary and Mandatory standards; Role of BIS, Indian StandardsMark (ISI), Ag-mark, Hallmarking, Licensing and Surveillance; ISO: An overview

Suggested Readings:

1. Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. *Consumer Affairs"* (2007)Delhi University Publication.
2. Aggarwal, V. K. (2003). *Consumer Protection: Law and Practice*. 5th ed. Bharat Law House,Delhi, or latest edition.
3. Girimaji, Pushpa (2002). *Consumer Right for Everyone* Penguin Books.
4. Nader, Ralph (1973). *The Consumer and Corporate Accountability*. USA, Harcourt Brace Jovanovich, Inc.
5. Sharma, Deepa (2011).*Consumer Protection and Grievance-Redress in India: A Study of Insurance Industry* (LAP LAMBERT Academic Publishing GmbH & Co.KG, Saarbrucken,Germany.
6. Rajyalaxmi Rao, *Consumer is King,* Universal Law Publishing Company
7. Empowering Consumers e-book, www.consumeraffairs.nic.in
8. ebook, www.bis.org
9. *The Consumer Protection Act, 1986*

Articles

1. Verma, D. P. S. (2007). Developments in Consumer Protection in India: Challenges and Tasks Ahead in JS Panwar, et al. (Eds) *Consumerism in India,* RBS Publishers Jaipur
2. Verma, D.P.S. (2002). Regulating Misleading Advertisements, Legal Provisions and InstitutionalFramework. Vikalpa. Vol. 26. No. 2. pp. 51-57.
3. Ralph L. Day and Laird E. Landon, Jr. (1997). Towards a Theory of Consumer Complaining Behaviour. Ag Woodside, et al. (eds.). Consumer and Industrial Buying Behaviour. New York; North Holland pp. 425-37.
4. George, S. Day and A. Aaker (1970). A Guide to consumerism. Journal of Marketing. Vol. 34.pp 12-19.
5. Sharma, Deepa (2003).New measures for Consumer Protection in India. *The Indian Journal* of *Commerce.* Vol.56. No.4. pp. 96-106
6. Sharma, Deepa (2011).Consumer Grievance Redress by Insurance Ombudsman. *BIMAQUEST*.Vol.11. pp.29-47.

Periodicals

1. Consumer Protection Judgments (CPJ) (Relevant cases reported in various issues)
2. Recent issues of magazines: *Insight*, published by CERC, Ahmedabad '*Consumer Voice*',Published by VOICE Society , New Delhi.
3. *Upbhokta Jagran*, Ministry of Consumer Affairs, Govt, of India.

B. Com.: Semester VI

Paper BC 6.3: Personal Selling and Salesmanship

Duration: 3 hrs. **Marks: 100** **Lectures: 50**

Objective: The purpose of this course is to familiarize the students with the fundamentals of personal sellingand the selling process. They will be able to understand selling as a career and what it takes to be a successful salesman.

Unit 1:

Introduction to Personal Selling: Nature and importance of personal selling, myths of selling, Difference between Personal Selling, Salesmanship and Sales Management, Characteristics of a good salesman, types of selling situations, types of salespersons, Career opportunities in selling, Measures for making selling an attractive career. **(12 Lectures)**

Unit- II

Buying Motives: Concept of motivation, Maslow's theory of need hierarchy; Dynamic nature of motivation; Buying motives and their uses in personal selling **(1**

3 lectures)

Unit- III

Selling Process: Prospecting and qualifying; Pre-approach; Approach; Presentation and demonstration; handling of objections; Closing the sale; Post sales activities. **(12**

lectures)

Unit- IV

Sales Reports: reports and documents; sales manual, Order Book, Cash Memo; Tour Diary, Daily and Periodical Reports; Ethical aspects of Selling **(**

13 lectures)

Suggested Readings:

1. *Spiro,* Stanton, *and Rich, Management of the Sales force,* McGraw Hill.
2. Rusell, F. A. Beach and Richard H. Buskirk, *Selling: Principles and Practices,* McGraw Hill
3. Futrell, Charles, *Sales Management: Behaviour, Practices and Cases,* The Dryden Press.
4. Still, Richard R., Edward W. Cundiff and Norman A. P. Govoni, *Sales Management: DecisionStrategies and Cases,* Prentice Hall of India Ltd., New Delhi,

5. Johnson, Kurtz and Schueing, *Sales Management,* McGraw Hill
6. Pedesson, Charles A. Wright, Milburn d. And Weitz, Barton A., *Selling: Principles andMethods,* Richard, Irvin
7. Kapoor Neeru, *Advertising and personal Selling,* Pinnacle, New Delhi.

B. Com.:
Semester VI Paper BC
6.4: INDIAN ECONOMY

Duration: 3 hrs. **Marks: 100** **Lectures: 65**

Objectives: This course seeks to enable the student to grasp the major economic problems in India and their solutions. It also seeks to provide an understanding of modern tools of macro-economic analysis and policy framework.

Contents

Unit 1: Basic Issues and features of Indian Economy (13 Lectures)

Concept and Measures of Development and Underdevelopment; Human Development**;** Composition ofnational income and occupational structure

Unit 2: Policy Regimes (13 Lectures)

a) The evolution of planning and import substituting industrialization.
b) Economic Reforms since 1991.
c) Monetary and Fiscal policies with their implications on economy

Unit 3: Growth, Development and Structural Change (13 Lectures)

a) The experience of Growth, Development and Structural Change in different phases of growthand policy regimes across sectors and regions.
b) The Institutional Framework: Patterns of assets ownership in agriculture and industry; Policiesfor restructuring agrarian relations and for regulating concentration of economic power;
c) Changes in policy perspectives on the role of institutional framework after 1991.
d) Growth and Distribution; Unemployment and Poverty; Human Development; Environmentalconcerns.
e) Demographic Constraints: Interaction between population change and economic development.

Unit 4: Sectoral Trends and Issues (13 Lectures)

a) *Agriculture Sector:* Agrarian growth and performance in different phases of policy regimes i.e. pre green revolution and the two phases of green revolution; Factors influencing productivity and growth; the role of technology and institutions; price policy, the public distribution system and food security.
b) *Industry and Services Sector:* Phases of Industrialisation – the rate and pattern of industrial growth across alternative policy regimes; Public sector – its role, performance and reforms; The small scale sector; Role of Foreign capital.
c) *Financial Sector*: Structure, Performance and Reforms. Foreign Trade and balance of Payments: Structural Changes and Performance of India's Foreign Trade and

Balance of Payments; Trade Policy Debate; Export policies and performance; Macro Economic Stabilisation and Structural Adjustment; India and the WTO, Role of FDI, Capital account convertibility,

Unit 5:Inflation, Unemployment and Labour market 23 Lectures

Inflation: Causes of rising and falling inflation, inflation and interest rates, social costs ofinflation; Unemployment – natural rate of unemployment, frictional and wait unemployment. Labour market and its interaction with production system; Phillips curve, the trade-off between inflation and unemployment, sacrifice ratio, role of expectations adaptive and rational

Suggested Readings:

1. Mishra and Puri, *Indian Economy*, Himalaya Paublishing House
2. IC Dhingra, *Indian Economy*, Sultan Chand & Sons
3. Gaurav Dutt and KPM Sundarum, *Indian Economy*, S. Chand & Company.
4. Uma Kapila (ed), "*Indian Economy since Independence",* Relevant articles.
5. Bhagwati, J. and Desai, P. *India: Planning for industrialization*, OUP, Ch 2.
6. Patnaik, Prabhat. *Some Indian Debates on Planning*. T. J. Byres (ed.). The Indian Economy: Major Debates since Independence, OUP.
7. Ahluwalia, Montek *S. State-level Performance under Economic Reforms in India* in A. O. Krueger. (ed.). *Economic Policy Reforms and the Indian Economy*, The University of Chicago Press.
8. Mankiw, N. Gregory. *Principles* of *Macroeconomics.* Cengage Learning
9. Rudiger Dornbusch, Stanley Fischer, and Richard Startz, *Macroeconomics.* McGraw-HillEducation
10. Oliver J. Blanchard, *Macroeconomics,* Pearson Education
11. G. S. Gupta, *Macroeconomics: Theory and Applications*, McGraw-Hill Education
12. Paul A Samuelson, William D Nordhaus, Sudip Chaudhuri, *Macroeconomic,* McGraw-HillEducation

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.A. GEOGRAPHY

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

PROGRAMME PROJECT REPORT

1. INTRODUCTION

A Master of Arts (MA) in Geography program offered through Open and Distance Learning (ODL) is designed to provide learners with advanced knowledge and skills in the field of geography. Geography is a field that encompasses the study of the earth's physical features, the human and natural processes that shape them, and the interactions between people and the environment. The MA in Geography program aims to equip learners with a deeper understanding of these concepts and their application to various fields such as environmental management, urban planning, and social policy.

ODL programs provide an opportunity for learners to pursue advanced education at their own pace and convenience, through online coursework, independent study, and interactive learning platforms. This approach to learning enables learners to balance their academic pursuits with work, family, and other responsibilities.

The MA in Geography program offered through ODL is designed to provide learners with a high-quality education that is flexible, accessible, and affordable. Learners will have the opportunity to engage with leading scholars and practitioners in the field of geography, collaborate with peers from diverse backgrounds, and develop skills that are relevant to a wide range of professional contexts.

Through this program, learners will develop critical thinking skills, problem-solving abilities, and research expertise that are essential for pursuing a career in geography or related fields. They will also have the opportunity to deepen their understanding of key topics in the field, such as environmental sustainability, social justice, and global development.

Overall, the MA in Geography program offered through ODL provides learners with an opportunity to pursue advanced studies in geography, expand their knowledge and skills, and contribute to addressing critical challenges facing our planet.

2. PROGRAMME MISSION AND OBJECTIVES

2.1 OUR VISION

MA in Geography program is to foster a learning environment that inspires creativity, innovation, and critical thinking. We strive to provide learners with an education that is grounded in rigorous scholarship and research, and that equips them with the practical skills and knowledge necessary to address real-world challenges.

Through the program, we aim to produce graduates who are not only experts in their

field but who are also engaged citizens, committed to promoting social justice, environmental sustainability, and community development. We believe that the MA in Geography program has the potential to make a significant impact on the world, and our vision is to empower learners to be at the forefront of that change

2.2 OUR MISSION

To provide learners with a high-quality education that is accessible, flexible, and responsive to their needs. We aim to create a dynamic learning environment that inspires intellectual curiosity, creativity, and innovation while also promoting social responsibility and global citizenship. By achieving these objectives, we believe that the MA in Geography program can make a positive impact on our world and the communities we serve..

2.3 OUR OBJECTIVES

- To provide learners with a comprehensive understanding of the core concepts and theories of geography, including physical geography, human geography, and geographic information systems.
- To develop learners' critical thinking, analytical, and research skills through coursework, research projects, and fieldwork.
- To equip learners with the practical skills and knowledge necessary to address real-world challenges related to environmental sustainability, social justice, and community development.
- To provide learners with opportunities to engage in interdisciplinary research and collaboration with scholars and practitioners from a variety of fields, including environmental science, public policy, urban planning, and international development.
- To prepare learners for careers in the field of geography, or for advanced study in geography or related fields.
- To foster learners' development as engaged citizens, committed to promoting social responsibility and global citizenship.
- To promote diversity, equity, and inclusion in all aspects of the program, including curriculum development, teaching, and learning.

Overall, the objectives of the MA in Geography program are designed to provide learners with a well-rounded education that prepares them for success in their careers and in their lives as engaged citizens. The program aims to equip learners with a strong

foundation in the principles of geography, while also providing them with the practical skills and knowledge necessary to address real-world challenges. By achieving these objectives, we believe that the program can make a positive impact on the world and the communities we serve.

3. RELEVANCE WITH HEI'S MISSION AND GOALS

The MA in Geography program is highly relevant to the mission and goals of higher education institutions (HEI) as it aligns with their mission to provide high-quality education that prepares students for success in their careers and as engaged citizens. Specifically, the program aligns with the following mission and goals of HEIs:

- Advancing knowledge through research: The MA in Geography program provides learners with opportunities to engage in interdisciplinary research and collaboration with scholars and practitioners from a variety of fields. This aligns with HEI's mission to advance knowledge through research and contribute to the development of new ideas and solutions to real-world problems.
- Providing quality education: The program is designed to provide learners with a comprehensive education that prepares them for success in their careers and in their lives as engaged citizens. This aligns with HEI's goal of providing high-quality education that meets the needs of learners and prepares them for success in their chosen fields.
- Promoting social responsibility and global citizenship: The program aims to equip learners with the practical skills and knowledge necessary to address real-world challenges related to environmental sustainability, social justice, and community development. This aligns with HEI's mission to promote social responsibility and global citizenship among learners.
- Fostering diversity, equity, and inclusion: The program promotes diversity, equity, and inclusion in all aspects of the program, including curriculum development, teaching, and learning. This aligns with HEI's mission to foster a diverse, inclusive, and equitable learning environment.

Overall, the MA in Geography program is highly relevant to HEI's mission and goals, as it aligns with their mission to provide high-quality education that prepares learners for success in their careers and in their lives as engaged citizens. The program promotes research, social responsibility, global citizenship, and diversity, equity, and inclusion, all of which are core values of higher education.

4. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The prospective target group of learners for MA Geography in ODL includes individuals who have completed their undergraduate degree in geography or a related field and wish to pursue further education and training in geography. These individuals may be working professionals, students seeking to further their education, or individuals seeking to switch careers.

The program is designed to meet the needs of learners who require flexible learning options, allowing them to balance their work, personal, and academic commitments. The program is also suitable for individuals who may not have access to traditional on-campus education due to geographical or other constraints.

The target group of learners for MA Geography in ODL is diverse, and may include individuals from different backgrounds, cultures, and regions. The program is designed to accommodate learners with diverse learning styles and needs, offering a range of resources and support services to ensure that learners can successfully complete the program.

The program may attract learners who are interested in pursuing careers in a wide range of fields, including environmental management, urban planning, international development, education, research, and more. The program aims to provide learners with a well-rounded education that prepares them for success in their chosen fields, while also fostering their development as engaged citizens committed to promoting social responsibility and global citizenship.

Overall, the target group of learners for MA Geography in ODL is diverse, and the program is designed to meet the needs of learners with varying backgrounds, learning styles, and career aspirations. The program aims to provide learners with the skills and knowledge necessary to succeed in their careers and make a positive impact on the world around them.

5. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN ODL MODETO ACQUIRE SPECIFICSKILLS AND COMPETENCE

For an inclusive progress of our society, it is imperative that the democratization of the dissemination of knowledge becomes more rigorous. One way to achieve it is through Online education which is reaching the unreached due to technology. It is proving highly beneficial for learners seeking to upgrade their educational qualification. MA English Programme provides ample opportunities in diverse businesses which require

reaching out the customers with communication skills.

An MA Geography ODL (Open and Distance Learning) program can be appropriate for acquiring specific skills and competencies, depending on the design and implementation of the program. Here are some of the ways in which an ODL program can be suitable for acquiring skills and competencies in geography:

- Flexibility: One of the advantages of an ODL program is its flexibility, which allows students to study at their own pace and in their own time. This flexibility can be particularly useful for acquiring skills and competencies in geography, as it enables students to explore and engage with various geographical concepts and theories at their own pace.
- Multimedia Learning Materials: An effective ODL program in geography should provide multimedia learning materials, such as videos, interactive maps, and online simulations, that enable students to explore and learn about various geographic concepts and theories in an engaging and interactive manner. This can help students acquire specific skills and competencies in geography, such as map reading, spatial analysis, and critical thinking.
- Online Collaborative Learning: An ODL program can also provide opportunities for online collaborative learning, where students can engage in discussions and exchange ideas with their peers and instructors. This can be particularly useful for acquiring specific skills and competencies in geography, such as teamwork, communication, and leadership.
- Self-Assessment and Feedback: An effective ODL program in geography should provide students with self-assessment tools and feedback mechanisms, such as quizzes, assignments, and exams, that enable them to assess their understanding of the subject matter and receive feedback from their instructors. This can help students acquire specific skills and competencies in geography, such as self-reflection, self-regulation, and problem-solving.
- Applied Learning: An effective ODL program in geography should also provide opportunities for applied learning, such as fieldwork, internships, and research projects, that enable students to apply their knowledge and skills in real-world settings. This can help students acquire specific skills and competencies in geography, such as data collection, analysis, and interpretation.

Overall, an ODL program in geography can be appropriate for acquiring specific skills and competencies, as long as it is designed and implemented effectively, with a focus on flexibility, multimedia learning materials, online collaborative learning, self-

assessment and feedback, and applied learning.

6. INSTRUCTIONAL DESIGN

6.1 CURRICULUM DESIGN

The Syllabus contains Core Courses (CR) and Department Electives (DE). A student is required to take compulsorily 15 credits of Core courses and 10 credits from a pool of Department Electives from parent Programme in each semester.

6.2 CURRICULUM FOR M.A. Geography

First Year

Papers		Maximum Marks
I.	Geomorphology	100
II.	Man and Biosphere	100
III.	Geography of Resources	100
IV.	Geographical Thought – Concepts & Issues	100
V.	Practical	100
	(a) Cartography	50
	(b) Field Work	50

FInal Year

COMPULSORY PAPERS

Paper I	Climatology & Oceanography	100 Marks
Paper II	Advance Geography of India	100 Marks

OPTIONAL PAPER

Paper III (Group A)	**Paper IV (Group B)**
(a) Agricultural Geography	(a) Political Geography
(b) Population Geography	(b) Transport Geography
(c) Industrial Geography	(c) Urban Geography
(d) Marketing Geography	(d) Regional Planning
(e) Remote Sensing & Photogrammetry	(e) Geographical Information System
(f) Rural Settlement	(f) Geography of Health

7. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTIONS& EVALUATION:

7.1 PROCEDURE FOR ADMISSIONS

1. The admission for the different programmes offered by the University is done by the Institution in consultation with the University.
2. Application forms are invited from the aspirants through online form floated onthe University website.
3. Aspirants have liberty to pay the application fee/Admission fee either through online banking and they are required to submit the hard copies of the form to the institute.
4. Once the deadline for submitting the application form is over, the online submitted application forms are scrutinized and list of all the candidates who has applied will be floated on the website.

7.2 ELIGIBILITY FOR ADMISSION CRITERIA

- Candidates for admission to the M.A. Geography PG Degree Programme shall have passed any Under Graduate Degree or equivalent examination of any authority, recognized by this university.

6.3. ELIGIBILITY AND DURATION OF THE COURSE

Programme	Eligibility	Duration	Credits
MA Geography	Any UG Degree	2 Years	80

6.4 EVALUATION SYSTEM:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment “CIA”: This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination “ESE”: This assessment will be carried out at the end of the Semester as per the Academic Schedule.

6.4.1 CONTINUOUS INTERNAL ASSESSMENT “CIA”:

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

6.4.2 THEORY COURSE ASSESSMENT WEIGHTAGES:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Seminar/Assignments/Project/ Lab	5%	--
4.	Surprise Test / Quiz / Lab	5%	--
5.	End Semester Exam	70%	2 to 3 hours

8. 4.3 GRADING SYSTEM

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent

70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

6.4.4 GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

6.4.5 GRADE SHEET

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits for each course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)

- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken from the first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

6.4.6 CLASS/DIVISION

Classification is based on as follows:

CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

6.5 ELIGIBILITY FOR THE AWARD OF M.A. GEOGRAPHY

A student will be declared to be eligible for the award of the M.A. Geography degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulated time:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Council and approved by the Board of Management of the university.

6.6 RE-VIEW OF ANSWER SCRIPTS / SINGLE VALUATION

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

9. INSTRUCTIONAL DELIVERY MECHANISM

9.1 PERSONAL CONTACT PROGRAMMES

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

9.2 OPTIONAL CONTACT PROGRAMMES

On demand of a sufficient number of students, the Directorate may organize optional contact programmes.

9.3 EXTENSION LECTURES

MPBOU organizes extension lectures to be delivered by eminent scholars ofnational repute from time to time. Students are informed in advance about such extension lectures.

9.4 INDIVIDUAL COUNSELLING AND GUIDANCE

The students can visit the Directorate and seek individual guidance and counselling from the concerned coordinators. Besides, students can seek guidance from the counsellors engaged bythe Centre for Open and Digital Education of MPBOU.

10. MEDIA

10.1 SELF-LEARNING PRINTED MATERIAL

The students will be provided learning material following the four quadrant approach by the UGC.

10.2 E STUDY MATERIAL & E TUTORIALS

The students are also provided the study material in the e-form which is availableon the official website of the institution. Besides, e-Tutorials are also prepared from time to time in accordance with the general and specific theme related contents of the course syllabus. These are also made available on the same website and are offered as a supplement to the Study Material.

11. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARYRESOURCES

Internet Leased Line

BSNL - 1 Gbps – Lease Line Link are available at the university.

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: Institute is fully networked with a campus wide network

interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-the-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

12. COST ESTIMATE OF THE PROGRAMME

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MA Geography	6,00000/-	3,00000/-	9,00000/-

13. QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMMEOUTCOMES

Centre for Quality Assurance Cell (CIQA) MPBOU created under the NAAC guidelines, is an august body at MPBOU comprising Senior Academicians, Thought Leaders, Eminent Alumni, Industry representative, Retired and Serving Senior Academicians from institutions of repute, Management Representative and a Local Body Member. The CIQA acts as a guiding force to ensure the quality of services and undertake reforms in terms of Infrastructure and Personnel addition. CIQA meets once in three months with a set agenda, for which the inputs are sought from various stake holders such as students, teachers, parents, alumni, administration and management. The CIQA in MPBOU ensures the adoption of qualitative distance education right through all the processes of each programme offered by the university. The salient features of OL programme in MPBOU are

- Very Strong Industry - Academic Collaboration
- Live class room sessions
- Online virtual class room sessions with one to one interactions
- Highly productive learning environment and digital library access

- Hands on training on latest cutting edge technologies and laboratoryfacilities
- Experiential learning with case studies and mini project
- MOOC courses enabled Curriculum
- Industry focused electives offered by well experienced faculty

M.A. (Previous) GeographySyllabus

Note :

1. These shall be four compulsory theory papers carrying 100 marks each and one practical paper with two sections
(a) Cartography and (b) Field work, having 50 marks each.
2. The paper of cartography, carrying 50 marks shall be set and examination shall be conducted with theoryexamination in the Department of Geography of the University and Colleges.

Papers		Maximum Marks
I.	Geomorphology	100
II.	Man and Biosphere	100
III.	Geography of Resources	100
IV.	Geographical Thought – Concepts & Issues	100
V.	Practical	100
	(a) Cartography	50
	(b) Field Work	50

Paper – I : Geomorphology : Study of Landscape **100 Marks**

Meaning, Scope and Fundamental Concepts of Geomorphology; Development of Geomorphology – American School, European School; Progress of Geomorphology in India; Recent Trend of Geomorphology; Earth Movements – Epeirogenesis and Orogenetic, Isostasy, Plate Tectonics.

Basis of Geomorphic Processes : Geomorphic Cycle and Land Forms in Humid, Arid, Glacial and Periglacial Environments, Polycyclic Land Forms, Erosion Surface and Climatic Geomorphology, Models of Land Scape Development – G.K. Gilbert, W.M. Davis, W. Penk, King, J.T. Hack, Morisawa, Regional Geomorphology of Kashmir Himalaya, Chhatonagpur, Thar Deseart and Deccan Trap.

Morphometric Analysis of Relief – Hypsographic Curve, Altimetry Frequency Curve, Histogram and Climographic Curve, Strahller Method of Drainage Ordering, Frequency and Density of the Drainage.

Applied Geomorphology – Relevance of Geomorphologic Knowledge to Regional Planning, Road and Dam construction, Mining, Urbanization and Natural Hazards.

Books Recommended :

1. Tharnbury, W.D. : Principles of Geomorphology.
2. Warcester : A Text Book of Geomorphology
3. Chorly, R.J. : Spatial Analysis in Geomorphology.
4. Sparks, B.W. : Geomorphology
5. King, L.C. : The Morphology of the Earth.
6. Singh, Savindra – Bhooakrity Vigyan.

Paper - II : Man and Biosphere **100 Marks**

Biosphere as a Global Eco-system; Unity and Diversity in the Biosphere; Structure and Function of the Major Ecosystem; Major Biome of the World; Productivity, Stability and Libility of the Ecosystem, Nature of Environmental Crisis.

Man in the Biosphere; The Pleistocene Environment; Emergence of Homo Sapiens and Spread over the Globe; Impact of Technology and Culture on Biosphere; Resource Extraction Technology; Use of Fire; Domestication of Plants and Animals; Use of Fossils Fuels and Resource Conservation Technology; The Impact of Industrial Revolution, Transport, Communication; Space Intensifying Technology (Urbanization); Impact of Green Revolution on the Biosphere.

Man and Environment System –Environment, Development and Culture; Concept of Sustainable Development; Alternative Source of Energy; Technological Alternatives with Special Reference to Bio-technology.

Books Recommended :

1. Agrawal, D.P. : Man and Environment in India Through the Ages.
2. Hoy, J.B. : Man and Earth.
3. Odum, E.P. : Fundamentals of Ecology.
4. Harvey, B. & Hallet, J.D. : Environment and Society.
5. Paul, R. : Man abd Environment : Crisis and Strategy of Coise.
6. Southwick, Carles : Global Ecology.
7. CSE : The State of Indian Environment : A Citizen Report.
8. Joy, T. : Bio-geography
9. Singh, Savindra : Environmental Geography (Hindi & English).

Paper – III : Geography of Resource **100 Marks**

Geography of Resource – Definition, Nature and Scope; Concept and Classification of Resources; Resources and Development – Culture, Economic and Technological; Concept of Resource Adequacy and Scarcity.

Distribution and Characteristics of Major Natural Resources of the World; Soils, Forest, Water, Power and Minerals – Iron ore, Bauxite, Copper, Tin; Delimitation and Characteristics of Major Resource Regions of the World; Distribution and Characteristics of World Human Resource.

Problem of Resource Utilization; Population Pressure on Resources; Concept of Limits to Growth; Agricultural and Industrial Regions of the World; Models in Resource Utilization – Von Thunen, Jonathan, Israd and M.Smith.

Conservation and Management of Resource; Concept, Method and Approaches; Use and Conservation and Management of Resources at Global, National and Regional Level – Forest, Soils and Water; National Policy of India on Natural Resources – Forest and Water; Population Policy and Programmes in India.

Books Recommended :

1. Zimmerman, E.W. : Introduction to World Resources.
2. Stringer, E. & Davis, J.S. : Geography of Resources.
3. Ali, S.A. : Resources or Future Economic Growth.
4. Janaki. V.A. : Economic Geography.
5. Singh, J. : Resource Geography (Hindi).

Paper - IV : Geographical Thought : Concepts and Issues **100 Marks**

Main Stages in the Evolution of Geographical Though; Development of Dualism in Geography – Physical vs Human, Systematic vs Regional; The Fallacy of Dualism; Positivism in Geography; Quantitative Revolution and its Impact; Systems and Models in Geography; Radical Geography; Revival of the Ecological School; The Concept of Earth Surface; Concept of landscape; Concept of Region; Typology of regions; ; Concept of Spatial Organization; Geography as a Science of Relationships; Geography as a Science of Human

Welfare; Phenomenology and Geography; Methods Explanation in Geography; Nature of Geographical Theories and Laws; Geography as a General Spatial System Theory; Development of Geographical Research in India; Research Methodology in Geography.

Books Recommended :

1. Ackerman, E.A. : Geography as a Fundamental Research Discipline.
2. Chorey, R.J. (ed.) : Direction in Geography.
3. Harvey, D. : Explanation in Geography.
4. Peet, R. : Radical Geography.
5. Johnston : Geography and Geographers.
6. James, P.E. & Jones C.F. : American Geography : Inventory and Prospect.
7. Minsul, R. : The Changing Nature of Geography.
8. Hartshorne, R. : The Nature of Geography & Perspective on Nature of Geography.
9. Dixit, R.D. : Geographical Thought (Hindi & English).
10. Singh, J. : Bhaugolik Chintan Ke Muladhar.

Paper – V : Practical **100 Marks**

Part – 1 : Cartography

(a) **Statistical Methods :** Collection, Processing and Management of Data; Concept and Methods of Sampling; Correlation – Pearson's Product Movement(r), Spearman's rank (rho) Coefficient of Determination; Regression Analysis Scattered Diagram, Regression Line and Confidences Limit; Residuals and Residuals Mapping; Test of Significance; Chi square and Student T test. **20 Marks**

(b) **Geological Maps :** Drawing of Cross Section : Inclined, Folded, Faulted Strata, Unconformable Series and Intrusion and Interpretation of Geological History; Nature Relief and Rock Structure. **15 Marks**

(c) **Aerial Photo Interpretation and Remote Sensing :** Elements and Development of Aerial Photography and Remote Sensing; Determination of Scale of Photographs; Flight Planning; Calculation of Number of Runs & Photo for a given area; Preparation of Stereograms and Identification of Terrain from Stereo pairs; Land Use Analysis and Mapping; Interpretation of Imageries. **15 Marks**

Part - 2 : Field Work – **50 Marks**

(A) Surveying …… **25 Marks**

(1) Surveying and Plotting of a given area by Telescopic Alidade **8 Marks**

(2) Profile Leveling and Contouring by Dumpy Level **10 Marks**

(3) Measurement of Horizontal and Vertical Angle by Theodolite **7 Marks**

(B) Survey Camp : Survey camp in a given area for atleast three days and Surveying and Plotting of Leveling and Contouring. **15 Marks**

(C) Records and Viva **10 Marks**

Books Recommended:

1. Aslam, Mahmood : Statistical Techniques in Geography.
2. Hammod, R. & Mc Cullagh : Quantitative Techniques in Geography.
3. Singh, R.L. & Singh, R.P.B. : Element of Practical Geography.
4. Yadav, H.L. : Fundamentals of Practical Geography (Hindi).
5. Rampal, R. : Aerial Photography and Photogrammetry.
6. Davis : Surveying.
7. Dickinson, G.C. Maps and Air Photos.
8. Monkhouse & Willikinson : Maps and Diagrams.
9. Chauhan, P.R. & Ram Surat : Practical Geography (Hindi).

M.A. II Geography

There shall be two compulsory theory paper carrying 100 marks each and two optional papers to be sleeved one from each group of optional papers. The optional papers have two parts theory of 75 marks and practical of 25 marks. There shall be one compulsory practical carrying total 100 which shall be divided into two sections – cartography of 50 marks and field work of 50 marks. A paper of cartography (paper V-A) will be set and examination shall be conducted with the theory examination in the lab of the Geography department of University and Colleges.

The candidate has to pass the theory and practical separately obtaining at least 36% marks in each.

COMPULSORY PAPERS

Paper I	Climatology & Oceanography	100 Marks
Paper II	Advance Geography of India	100 Marks

OPTIONAL PAPER

Paper III (Group A)	**Paper IV (Group B)**
(g) Agricultural Geography	(a) Political Geography
(h) Population Geography	(b) Transport Geography
(i) Industrial Geography	(c) Urban Geography
(j) Marketing Geography	(d) Regional Planning
(k) Remote Sensing & Photogrammetry	(e) Geographical Information System
(l) Rural Settlement	(f) Geography of Health

Practical

(a) Cartography ..... 50 Marks
(b) Field Study ..... 50 Marks

Paper I : Climatology and Oceanography

(A) Climatology:

Definition, Nature and Scope of Climatology; Heat Balance of the Earth; Air Masses and Fronts; Origin of Monsoon – Recent Concept; Climatic Classifications Given by Koppen, Thornthwate and Triwartha with their Critical Appraisal; Applied Climatology; Climate and (i) Landforms, (ii) Vegetation, (iii) House Types and (iv) Agriculture; Human Impact on Climate – Green House Effect and Ozone Depletion; Regional and Micro Climatology; Urban Climatology and Heat Islands; Weather Forecasting.

(B) Oceanography:

Definition, Scope and Evolution of Oceanography; Submarine Morphology with special reference to Indian Ocean; Temperature and Salinity in the Oceans; Ocean and Climate Circulation of Oceanic Water – Currents; Marine Deposit; Life in the Ocean – Vegetation and Animals; Ocean and its Resources – (a) Biotic Resources, (b) Food Resources, (c) Minerals Resources, (d) Energy; (e) Transportation and Trade; Geopolitics and Oceans with Special Reference to Indian Ocean; Human Impact on Marine Environment.

Books Recommended:

1. Lal, D.S. - Climatology (Hindi & English), Sharda Pustak Bhawan, Allahabad.
2. Critchfield, H.J. - General Climatology, Prentice Hall of India, New Delhi.
3. Chorely, R.J. & Berry, R.G. - Atmosphere, Weather & Climate (London)
4. Lydolph, P.E. – The Climate of the Earth.
5. Gerald, S. – General Oceanography : An Introduction (New York)
6. King, C.A. (1986) - Oceanography, C.E. Arnold, London.
7. Thurman, H.B. (1983) - Introductory Oceanography, Longman, London.
8. Davis Richard J.A. – Oceanography : In Introduction to Marine Environment.

Paper – II : Advance Geography of India

Geological Evolution & Relief Features – Plains, Plateau & Mountains; Origin of Himalaya; Origin of River Systems Delimitation and Characteristic of Physiographic; Climatic & Agro-Climatic Regions; Geographical Factors behind Federalism and National Integration.

Spatial aspects of Growth and Distribution Population Resource Regions; Population Problems; Agricultural Development : Irrigation, Fertilizer; Green Revolution; Agricultural Regions & New Trends in Indian Agriculture; Mineral Resource Region; Industrial Policies & Trends of Industrialization; Industrial Regions & Industrial Complexes; Problems & Prospects of Industrially Backward Regions.

The Role of Transport Network, Marketing and Banking in Indian Economy; Regional Development Policies in Five Year Planes; Impact of Globalization and Multination on Indian Economy; Regional Pattern of Development and Disparities; Geographical Regionalization of India with special reference to Stamp, Spate & R.L. Singh; Problem and Prospects of Resource base and Economic Development Pattern in Hill Region, Desert, Drought Prone Area, Flood Prone Area, Tribal Region.

Book Recommended :

1. R.L. Singh and Others – India : A Regioanl Geography
2. R.C. Tiwari, - Geography of India
3. J. Singh – A Comprehensive Geography of India
4. P.R. Chauhan & Mahatam Prasad - Geography of India
5. Spate – India and Pakistan
6. R.P. Mishra – Regional Development Planning in India
7. B.L. Sukhawal – Political Geography in India
8. R. Tirth and Gopal Krishan – Geography of India

Optional Paper – III (Group A)
(a) Agricultural Geography

Theory ..... 75 marks

Definition and Scope of Agricultural Geography; Approaches to the study of Agricultural Geography; Origin' Dispersal, Development of Agriculture; Principles of Agricultural Location; Land Capability & Land Use Classification with Special Reference to

India; Agricultural Efficient and Productivity Measurement; Crop-Combination Regions – Method of Delimitation by Weber and Doi; Crop-Combination Regions of India; Agricultural Intensity and Diversification; Agricultural Typology; Determination and Distribution; Measurement of Level of Agricultural Development; Impact of Modern Agriculture on Environment; Green Revolution in India; Concept of Sustainable Agriculture; Planning of the Agricultural Land Use; Food Security in India.

Practical.....25 marks

1. Techniques of Land Use Survey.
2. Agricultural Efficiency Measurement.
3. Carrying Capacity.
4. Measurement of Agricultural Intensity.
5. Land Use Planning of a given area.

Books Recommended :

1. Singh, B.B. - Krishi Bhoogol, Gorakhpur.
2. Singh, Jasbir – Agricultural Geography, Tata Mc Graw, New Delhi
3. Pandey, J.N. & Kamlesh, S.R. - Krishi Bhoogol, Gorakhpur.
4. Symons, Lt. - Agricultural Geography.
5. Kumar, P. & Sharma, S.K. - Krishi Bhoogol, Gorakhpur. Bhopal
6. Singh, B.N. - Krishi Bhoogol.

(b) Population Geography

Theory ..... 75 marks

Population Geography - Definition, Scope and Approaches; Development of Population Geography; Population Geography vs. Demography; Sources of Population Data – Their Reliability and Comparability; Population Dynamics; Factors Influencing Distribution and Density of Population; World Patterns of Population; Growth of Population – Theories and World Pattern; Population Explosion; Growth and Distribution of India's Population; Measurements of Birth and Death Rates; Demographic Transition Theory; Population Composition – Age and Sex Composition, Occupational Structure, Literacy, Urbanization etc.; Migration – Types, Laws, Cassese and Consequences; Concept of Optimum, Over and Under Population; Population Resource Region of the World; Population and Food Supply; Population Policies in Developed and Developing Countries; Trends of Family Planning; Food Production and Green Revolution in India; India's Population Policy; Population Planning with Special Reference to India.

Practical.....25 marks

1. Preparation of Population Distribution Maps – Simple Dot, Multiple Dot, Sphere method.
2. Density Maps by Choropleths and Isopleths.
3. Exercise on Growth Pattern and Growth Model of World/India.
4. Analysis of Fertility Index.

5. Construction of Compound and Superimposed Pyramids.
6. Population Projection by Graphical, Mathematical and Logarithm Methods.
7. Interpretation of Population Maps of National Atlas of India (NATMO)
8. Analysis Population in Relation of Resource Use.

Book Recommended :

1. Chandna, R.C. - A Geography of Population (Hindi & English) Kalyani, New Delhi.
2. Clarke, J.L. - Population Geography.
3. Demko,G.J. (et.) - Population Geography : A Reader
4. Garnier, B.J. - Geography of Population.
5. Yadav, Hira Lal - Jansankhya Bhoogol, New Delhi.
6. Trewartha, G.T. – A Geography of Population.
7. Zelinsky, W. (ed.) – Geography and a Growing World.
8. Dubey, K.K. & Singh, M.B. – Population Geography (Hindi) Jaipur
9. R. D. Tripathi- Jansankhya Adhyayan

(c) Industrial Geography

Theory.....75 marks

Definition and Scope of Industrial Geography; Recent Trends in Industrial Geography; Industrial Location Factors; Linkage in Industries; Industrial Location Theories – A. Weber, I.M. Hoover, Loschand Isard; Bases of Identification of Industrial Regions; Industrial Regions of U.S.A., Japan, U.K. and West Europe.

Industrialization in India – Industrial Development and Policies, Industrial Regions and Complexes; Impact of Globalization and Problems of Industrialization; Environmental Impact of Industrialization; Tourism as an Industry; Elements of Touris; Tourism in Uttaranchal and Eastern U.P.

Practical.....25 marks

1. Analysis of Industrial Intensity – Location Quotient, Location Co-officient, Location Curve.
2. Measurement of Industrial Development in a given region.
3. Study of an Industrial Complex/Estate regarding linkages and environmental problems.
4. Industrial Planning in a given region based on local resources.

Books Recommended :

1. Alezender, G. – Geography of Manufacturing (1967)
2. Miller, E. – Geography of Manufacturing, Prentice Hall.
3. Fridrich, J. Alfred Webger's Theory of Location of Industries.
4. Riley, R.C. _ Industrial Geography, London.
5. Smith, D.M. – Industrial Geography.

6. Hooever, E.M. – Location in Space Economy.
7. Kumar, Pramila & Sharma, S.K. – Audhogik Bhoogol, Bhopal.
8. Lora, R.M. – Audhogi Bhoogol
9. Sharma, V.N. – Industrial Development and Planning in India.

(d) Marketing Geography

Theory ..... 75 marks

Definition and Scope Marketing Geography ; Central Place Theory and its Modifications; Elements of a Market Place – Sellers and Consumers, Goods and Services, Business Establishments, Channels of Distribution – Wholesale, Retail and Services; Skinners Classification of Markets; Market Periodicity and Market Cycle their Spatio- temporal Synchronization; Rural and Urban Markets; Marketing Structure in Different Regional Settings; Marketing and Social Structure; Rural Marketing and Development; Market Studies in India.

Practical..... 25 marks

1. Techniques of Study – Cartographic and Statistical Methods, Questionnaire Method.
2. Analyses of data-consumer and trader frequency graphs, correlation betweennumber and type of shops, shop openings and shop opening days.
3. Structure of Shops.
4. Measurement of Spatio-temporal Synchronization.
5. Delimitation of market area region.
6. Identification of Market cycle from a given map of market days.
7. Determination of hierarchy of markets using 'SODA' method.
8. Study of a market place through field work under the following heads; origin and development, temporal and spatial location, Determinates of market size, Elements of layout, spatial characteristics and functions, Market area region, Globalization of Relating, WTO Free Market Economy-Human Dimensions.

Books Recommended :

1. Berry, B.J.L. – Geography of Market Centres and Retailing, Prentice Hall.
2. Saxena, H.M. – Marketing Geography, Jaipur.
3. Skinner, G.W. – Marketing and Social Structure in Rural China, Journal of Asian Studies, Vol. 24.
4. Yadav, H.R. – (ed. Yadav, H.L.) Retailing in Saryupar Plain (Hindi), Radha Publications, New Delhi.
5. Davies, R.L. - Marketing Geography.
6. Shrivastava, V.K. – (ed) Commercial Activities in South Asia, ConceptPublications, New Delhi.
7. Shrivastava, V.K. & Dixit, R.S., Biparan Bhoogol.

(e) Remote Sensing and Photogrammetry

Theory ..... 75 marks

(a) Remote Sensing : Definition, Scope and Development of Remote Sensing; Techniques in India and abroad; Advantages, Use of Remote Sensing in Geographical Studies; Fundamentals of Remote Sensing and Aerial Photography – Nature of Electromagnetic Radiation, Range of Electromagnetic Spectrum for Remote Sensing; Types of Platforms and Sensors; Main Characteristics of Satellites and their Images – LANDSAT, ERTS, SPOT, IRS, Remote Sensing; Data Acquisition and Processing; Use of Remote Sensing for Resource Survey.

(b) Aerial Photography : History of Aerial and Space Photography; Aerial Camera; Typology of Aerial Photographs; Photographic Mossaic; Basic Information for Aerial Photography; Planning, Operational Procedures, Output of Photography; Procedure of Procurement of Aerial Photographs in India.

(c) Photogrammetry and Image Interpretation : Geometry of Photographs, Tilt, Swing, Image Displacement, Stereoscopic View, Mosaicing, Ratification, Fundamentals of Image Interpretation, Elements; Image Interpretation Keys, Stages and Procedures of Image Interpretation.

Practical..... 25 marks

Photogrammetry – Stereovision, Orientation of Photo under pocket and Mirror Stereoscope, Point Transfer, Flight line and Matches Line, Construction of Stereogram, Stereo triplet and mosaic Measurements of Aerial Photographs – Scale, distance, Height and are making of base Map with the help of Aerial Photographs, Delimitation of Physical and Cultural Homogeneous region on the Photographs and their Mapping.

Books Recommended :

1. Avery, T. Bugene - Interpretation of Aerial Photograph and Cartography.
2. Yadav, Hiral Lal – Fundamentals of Practical Geography.
3. Monkhouse & Willikinson – Mapa and Diagrams.
4. Raise – World Cartography.
5. Dickinson, G.C. – Maps and Airphotos.
6. Makel, Savage & Zorn – Slope Measurements & Estimates from Aerial Photographs.
7. I.T.C. Exercise Book of Photogrammetry and Photo Interpretation.
8. Gautam (ed.) Technical Development & Geography.
9. Ram Pal - Photogrametry.
10. Sharma – Remote Sensing for Resources Survey.

(f) Rural Settlement Geography

Theory ..... 75 marks

Nature, Scope, Significance and Development of Rural Settlement; Approaches to Settlement Geography; Types and Pattern of Rural Settlement; Histrogenesis, Spatio- temporal Dimensions and Morphogensis of Rural Settlement; Site, Shape, Size and Spacing of Rural Settlement; Morphology and Functions; Cause of Rural Urban Nexus; Spatial Relation of an

Indian Rural Settlement; Rural House Type; Rural Service Centres and Planning of Rural Settlement.

Practical..... 25 marks

1. Interpretation, Survey and Mapping of Rural Settlement.
2. Types and Patterns of Rural Settlement.
3. Village Morphology.
4. Planning of Rural Settlement.

Books Recommended :

1. Chisolum M-Rural Settlement and Law Use.
2. Clout - Rural Geography : An Introductory Survey.
3. Hudson, F.S. – Geography of Settlement.
4. Lal, H. – City and Urban Fringe, Concept, New Delhi.
5. Mandal, R.B. – Introduction to Rural Settlement.
6. Singh, R.L., Singh, K.N. – Readings in Rural Settlements Geography.
7. Tiwari, R.C. – Adhewas Bhoogol, Allahabad.

Optional Paper – IV (Group B)

(a) Political Geography

Theory ..... 75 marks

Nature and Scope, Development of Political Geography; Approaches to the Study of Political Geography with special reference to German, British and American Schools; The State and Nation; Anatomy of States : Care Areas and Capitals Frontiers and Boundaries; Functions and Classifications; Approaches to the study of Political Geography with special reference to Functional and unified field theory approaches; Global Strategic views with particular emphasis on ideas of Mahan, Mackinder, Spykman & Deseveresky; Impress of Politics upon Landscape; Elements of Electoral Geography; Contemporary International Problems and Problematic Areas; political organization and the 'Non Align Movement'.

Geopolitical setting of India, Origin and Success of Federalism in India in view of its Politico Administrative Structure; Geographical Problems of India in Relation to its Neighbours, SAARC. The pattern of Languages and Religions of India and their Political significance.

Practical..... 25 marks

1. Cartographic Representation of India's Global and Strategic Position under Land, Sea and Air Power Setting.
2. Analysis of size and shape of Administrative units and National and Local Levelin View of Administrative Efficiency and Planning.
3. Application of Cartographic & Statistical Technique in Electoral Geography of given area.

Book Recommended :

1. Glassner, M.I. & Blij H.J.De : Systemic Political Geography, New York.
2. Kasperson, R.E. & Minghi, J.V. : Structure of Political Geography, London.
3. Busteed, N.A. : Developments in Political Geography.
4. Dergman, E.F. - Modern Political Geography, London.
5. Dixit, R.D. : Political Geography : A Contempory Perspective, New Delhi.
6. Shrivastava, R.M. – Rajnitik Bhoogol, Allahabad.
7. Chauhan, P.R. : Rajnitik Bhoogol, Gorakhpur.
8. Dixit, S.K. : Rajnitik Bhoogol, Gorakhpur.
9. Dixit, S.K. – Electoral Geography, Varanasi.
10. Dwivedi, R.L. : Political Geography, Allahabad.

(b) Transport Geography

Theory ..... 75 marks

Definition and Scope of Transport Geography; Evolution of Transportation – Pre Industrial Era, Ninetieth Century, Twentieth Century; Characteristic and Relate Significance of Different Means of Transport; Evolution of Transport Network Model with special Reference to Taaffee, Morrill and Gould; Structure of Transport Network; Concept of Accessibility and Locational Utility; Bases of Spatial Interaction – Complementority, Intervening Opportunity; Transferability; Concept of Gravity Potential Model and Spatial Interaction. Theories Related to Freight Determination. Transport System in India (i) Rail (ii) Road (iii) Waterway (iv) Air Transport; Major Transport Routes of the World; Concept of Accessibility; Transport and Regional Development' Transport Planning.

Practical..... 25 marks

1. Analysis of the structure and spatial variation of Transport Network of Traditional and Graph theoretic method. (Cyclomatic, Alpha, Beta and Gamma), Accessibility matrix.
2. Application of Gravity Potential Model Showing Transport Interaction.
3. Traffic Flow Analysis on the Bases of given flow data.
4. Connecting and detour incides.
5. Degree of circuits.
6. Transpiration Planning for a given region under specific assumption.

Books Recommended :

1. Hurst, Elliot - Transport Geography : Comments and Readings.
2. Kansky, J. – The Structure of Transport Network.
3. Roluinson, R. – The Geography of Transport.
4. Singh, Jagdish - The Transport Geography of South Bihar.
5. Singh, K.N. - Transport Network Analysis in Geography.

(c) Urban Geography

Theory ..... 75 marks

Meaning, Scope and Development of Urban Geography; Factors of Urban Growth – Ancient, Medieval and Modern Period; City as Centre of Change; Origin and Location of Modern Urban Settlement; the Models of Urban Growth – Concentric Zone, Sectoral and Multinucle; Conurbations and Megalopolis; Urban Umland and Urban Fringe; Functional Classification of Urban Centres; Urban Hierarchy and Rank Size Relationship; Morphologyof Urban Settlement; Indian Urban Scenario – Demographic Structure and Characteristics of Urban Population, Trend of Urbanization, Occupational Pattern, Urban Amenities, Urban Land Use Problems, City Problems and Urban Planning; the Role of Geographer in Town Planning; Special Study of KAVAL Towns of U.P. – Residential Problems, Morphological Characteristics and Functional Characteristics.

Practical..... 25 marks

1. Population Projection and Population Growth Forecasting.
2. Delimitation of Umland and Urban Fringe.
3. Study of Typical Master Plans.
4. Study of Typical Morphology
5. Functional Classification of Towns.
6. Town Planning.
7. Selection of Sites for Town and their Planning.

Books Recommended :

1. Smailes – The Geography of Town.
2. Dichinson – West European Cities.
3. Murphy – The American Cities.
4. Mayers and Kohn – Reading in Urban Geography.
5. Tayler, G. - Urban Geography.
6. Loomfield – Cities and Towns.
7. Singh, H.H. – Kanpur : A Study in Urban Geography.
8. Lal, H. – City and Urban Fringe : A Case of Bareilly.
9. Bansal, S.C. – Nagreey Bhoogol, Varanasi.
10. Singh, O.P. - Nagreey Bhoogol, Lucknow.
11. Singh, U. - Nagreey Bhoogol, Allahabad.
12. Tiwari, R.C. - Adhivas Bhoogol, Allahabad.
13. Rai, S. – Urbanizations in Haryana (Hindi), Delhi.

(d) Regional Planning

Theory ..... 75 marks

Philosophy, Concept, Scope and Purpose of Regional Planning; Theories of Regional Development – Economic Base Theory, Inter Regional Trade, Central Place Theory; Planning Processes – Sectoral & Temporal Approaches to Regional Planning at Micro, Meso and Macro Levels; The Concept of Growth Centres, Growth Centre Strategy for Regional Planning; Concept of Rural Economy and Core–Periphery Relationship; Delimitation of Planning

Regions; Planning Regions of India; Regional Planning for Rural Development with Special Reference to Eastern U.P.; Role of Innovation Diffusion; Significance and Role of Infrastructural Elements viz. – Irrigation, Power, Transport Communication and Marketing in Regional Planning; Spatial Organization for Regional Development; Metropolitan Regions and Approaches to their Planning in India; Regional Planning as a Development Strategy since Independence in India.

Practical.....25 marks

1. Study of river valley project areas and integrated planning exercise.
2. Identification of Growth Centres.
3. Planning of Infrastructural Elements.
4. Preparation of Development Plans to Local Levels.
5. Metropolitan of Regional Planning.
6. Delimitation of Planning Regions.

Books Recommended :

1. Freeman, W. – Geography and Planning.
2. Alonso and Friedman - Regional Development and Planning.
3. Mishra, R.P. - Regional Development Planning.
4. Issard, W. – Methods of Regional Analysis.
5. Singh, J. – Central Places and Spatial Organization in a Backward Economy.
6. Abercremble, P. – Town and Country Planning.
7. Enayat Ahman - Regional Planning with Special Reference to India.
8. Srivastava, V.K., Sharma N. & Chauhan, P.R. (2002) : Pradeshik Niyojan awan Vikas.
9. Ojha, R.: Pradeshik Niyojan, Kanpur.
10. Dubey, K.K. & Singh. M.B. : Pradeshik Niyojan, Varanasi.
11. Pandey, J.N. Sansadhari Sanrachan Awan Upyog – Purvi U.P.

(e) Geographical Information System

Theory ..... 75 marks

Definitions, Development and Objectives of GIS; Component of GIS; Functional Clements of GIS-data Equisition; Pre-Processing, Data Management, Product Generation; Current Issues and Recent Trends in GIS; Computer Fundamentals for GIS - Hardware & Software; Spatial & Non-Spatial Data; Data Structure – Raster & Vector; Concept of Data Base; Databace Structures – Hierarchial, Network, Relational, DBMS, RDBMS, Data Handling in GIS – Data Source, Georeferencing, Data Input-Verification and Editing; Topology Creations, Normalization & Output; Errors in GIS; Spatial Data Analysis – Raster – Vector Based; Network Analysis, DEM & its Application; Concept and Application of Remote Sensing and GPS in GIS, GIS Application in Planning & Disaster Management.

Practical.....25 marks

1. Computer Assisted Cartography Using a GIS Software.
2. GIS Project Design.
3. Database Creation.

4. DEM Generation.

Books Recommended :

1. Burrough, P.A. - Principles of GIS for Land Resource Assessment.
2. Burrough, P.A. & Mc Donnel – Principles of Geographical System.
3. Haywood, I. Correlium, S. Caxer, S. – An Interoduction to Geographical Information System.
4. Lauxim, R. & Thomson, D. – Fundamentals of Spatial Information System.
5. Longley, P.A. Goodchild, M.F. etc. – Geographical Information System and Science.
6. Brice E. D. - GIS : A Visual Approach.
7. Jonson, J.N.R. – Introduction to Digital Image Processing : A Remote Sensing Perspective.

(e) Geography of Health

Theory ..... 75 marks

Meaning, Scope, Significance, Development, Methods and Techniques of Geography of Health; Geographical Factors Affecting Human Health & Diseases – Physical, Social, Economic and Environmental; Vital & Health India Ces; Classification of Diseases Genetic, Communicable & Non-communicable Occupational and Deficiency Diseases; Geography of Huger and Malnutrition; Pattern of Distribution of Major Diseases in the World; Ecology, Etiology and Transmission of Major Diseases – Cholera, malaria, Tuberculosis, Hepatitis, Cancer, AIDS and STDS and their regional study with special reference to India; Disease Diffusion Models and Health Care; Accessibility Models; Health Care – International Level – WHO, UNICEF & REDCROSS; National Level – Government and NGO's, Health Planning and Policy in India Family Welfare, Immunization, National Disease Eradication & Health for all.

Practical..... 25 marks

1. Models in the Geography of Health.
2. Mapping of Diseases in U.P. – Malaria, Cholera, Tuberculosis, Encephalitis & Nation Disorder.
3. Comparative Study of Rural & Urban Health.
4. Disease and their Relation with Environment.
5. Mapping of Health Care Facilities.

Books Recommended :

1. Cliff, A. & Hagget, P. – Atlas of Disease Distribution.
2. May, J.M. – Study in Disease Ecology.
3. May, J.M. – Ecology of Human Disease.
4. Forste, D.H. – Health, Disease and Environment.
5. Pyle, G.P. – Applied Medical Geography.
6. Mishra, R.P.L. – Medical Geography of India.
7. Rais, Akhter – Environment and Health.

8. Learmonth, A.T.A. – Disease Ecology.
9. Hunter, J.M. – Geography of Health and Disease.
10. Raise, A. and Learmonth, A.T.A. – Geographical Aspect of Health and Disease.

Paper – V

Practical Geography

A. Cartography ..... 50 Marks

(a) **Cartograms -** Climatic Diagrams Rainfall Dispersion Diagram; Water Budget; Ergo-graph – Climatic and Circular; Thematic Cartograms – Choropleth, Isopleth, Chorochromatic Diagram; Multiple Dot, Spherical Diagram, Traffic Flow, Land Utilization Maps. 20 Marks

(b) **Map Projections :** Meaning, Classification and Choice of Projections; Construction and Characterization of Projection – Lambert's Conical, Polyconic, Galls, Mercator's Gnomonic Equatorial Zenithal, Stereographic Equatorial Zenithal, Orthographic Equatorial Zenithal, Sinusoidal, Mollweide and their interrupted cases, International U.T.M. 15 Marks

(c) **System Analysis :** Measurement of Spatial Pattern and Inequality – Z score, Lorenz Curve and Gini Coefficient, Location Quotient, Coefficient Localization & Localization Curve Nearest Neighbor Analysis, Network Analysis,Graph Techniques and Degree of Connectivity, Shape Analysis, Gravity Models, Retail Gravitation. 15 Marks

B. Field Work ***50 Marks***

(a) Field Study tour (Outside of the Ganga Plain) and detailed field observation using sample survey, sketch, diagrams and photographs and preparation of report of visited area. 25 Marks

(b) Project Report – Based upon the field survey of a area give by Head/Chairman of the department. 15 Marks

C. R ecord and Viva 10 Marks

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.A. HISTORY

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

PROGRAMME PROJECT REPORT

1. INTRODUCTION

MA History is a postgraduate academic program that focuses on the study of past events, people, societies, and cultures. The program aims to deepen students' knowledge and understanding of historical events and their significance, while also equipping them with the research and analytical skills necessary to critically examine and interpret historical sources and materials.

The MA History program offers students the opportunity to engage with a wide range of historical topics, themes, and periods, including ancient, medieval, modern, and contemporary history. Students may also specialize in areas such as social history, cultural history, political history, economic history, or intellectual history.

The program is typically designed to provide students with a flexible and interdisciplinary education, drawing on diverse theoretical and methodological approaches from across the humanities and social sciences. It may also include opportunities for students to conduct independent research and to develop their skills in areas such as archival research, historical writing, and oral history.

Graduates of MA History programs may pursue a variety of career paths, including teaching, research, publishing, museum work, public history, government service, and more. The program also provides students with transferable skills that can be applied in a range of other fields, such as critical thinking, research and analysis, communication, and problem-solving.

Overall, MA History programs offer students a rich and rewarding academic experience, allowing them to explore the complexities of the human experience and to deepen their understanding of the world around them.

PROGRAMME MISSION AND OBJECTIVES

1.1 OUR VISION

MA History program typically focuses on deepening students' understanding of historical events and their significance, while also equipping them with the skills and knowledge necessary to critically examine and interpret historical sources and materials. It may also involve a commitment to fostering interdisciplinary perspectives and engaging with a range of historical topics and themes, while promoting a strong sense of social responsibility and ethical awareness. Ultimately, the vision for an MA History

program is to produce knowledgeable and skilled historians who can make valuable contributions to society, whether through research, education, or other fields of practice.

1.2 OUR MISSION

MA History program is to provide students with a comprehensive and interdisciplinary education in the study of past events, people, societies, and cultures. We aim to deepen students' knowledge and understanding of historical events and their significance, while also equipping them with the research and analytical skills necessary to critically examine and interpret historical sources and materials. Our program is committed to fostering a diverse and inclusive learning environment, where students can engage with a wide range of historical topics and themes, and explore their own areas of interest and expertise. We strive to promote ethical awareness, social responsibility, and engagement with pressing contemporary issues, and to produce graduates who are prepared to make meaningful contributions to society.

1.3 OUR OBJECTIVES

- To provide students with a deep and comprehensive understanding of historical events, people, societies, and cultures, and to equip them with the analytical and critical thinking skills necessary to engage with historical sources and materials.
- To foster interdisciplinary perspectives and encourage engagement with a range of historical topics and themes, drawing on diverse theoretical and methodological approaches from across the humanities and social sciences.
- To promote independent research and scholarship, and to encourage students to develop their own areas of expertise and specialization within the field of history.
- To provide opportunities for professional development and career advancement, whether in academia, public history, or other fields of practice.
- To foster a sense of social responsibility and ethical awareness, and to encourage engagement with pressing contemporary issues and debates.

2. RELEVANCE WITH HEI'S MISSION AND GOALS

The MA in History program is highly relevant to the mission and goals of higher education institutions (HEI) as it aligns with their mission to provide high-quality education that prepares students for success in their careers and as engaged citizens.

Specifically, the program aligns with the following mission and goals of HEIs:

- Advancing knowledge and understanding: An MA History program can contribute to the institution's mission of advancing knowledge and understanding by providing students with a comprehensive and interdisciplinary education in the study of past events, people, societies, and cultures.
- Fostering critical thinking and analytical skills: An MA History program can help fulfill the institution's goal of fostering critical thinking and analytical skills by equipping students with the research and analytical skills necessary to engage with historical sources and materials.
- Promoting diversity and inclusion: An MA History program can help promote diversity and inclusion by fostering a diverse and inclusive learning environment, where students can engage with a wide range of historical topics and themes.
- Preparing students for careers and civic engagement: An MA History program can help prepare students for careers and civic engagement by providing opportunities for professional development and career advancement, as well as promoting a sense of social responsibility and ethical awareness.
- Contributing to the broader community: An MA History program can contribute to the institution's broader goal of contributing to the community by encouraging students to engage with pressing contemporary issues and debates, and by producing graduates who are prepared to make meaningful contributions to society.

3. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The prospective target group of learners for an MA History program in ODL (Open and Distance Learning) can vary, but generally includes the following:

- Working professionals: Many ODL programs are designed for working professionals who want to continue their education while maintaining their work commitments. An MA History program in ODL can attract individuals who are working in education, public history, government, or other fields that require an understanding of history.
- Undergraduates in history or related fields: Students who have completed an undergraduate degree in history or a related field, such as political science or anthropology, may be interested in pursuing an MA in History in order to deepen their knowledge and expertise in the field.
- Teachers and educators: Teachers and educators may be interested in pursuing an

MA in History to enhance their knowledge and skills in teaching history to students.

- Those interested in a career in academia: Individuals who are interested in pursuing a career in academia, such as teaching or research, may pursue an MA in History as a stepping stone to a Ph.D. program.
- Those with a personal interest in history: Individuals who have a personal interest in history, whether it be a hobby or a passion, may choose to pursue an MA in History as a means of deepening their knowledge and understanding of historical events, people, societies, and cultures.

4. INSTRUCTIONAL DESIGN

4.1 CURRICULUM DESIGN

The Syllabus contains Core Courses (CR) and Department Electives (DE). A student is required to take compulsorily 15 credits of Core courses and 10 credits from a pool of Department Electives from parent Programme in each semester.

4.2 CURRICULUM FOR M.A. History

Year I/Semester : 1		**Credit**
MAHI-101	विश्व का इतिहास :16वीं सदी के प्रारंभ से 1776 ईस्वी तक	8
MAHI-102	विश्व का इतिहास :1789 ईस्वी से 1945 ईस्वी तक	8
MAHI-103	भारतीय राष्ट्रीय आन्दोलनस्वतंत्रता के लिए संघर्ष :	8
MAHI-104	भारतीय राष्ट्रीय आन्दोलननिर्माण की भूमिका -राष्ट्र :	8
Year I/Semester : 2		
MAHI-105	आधुनिक उत्तराखण्ड में समाज	8
MAHI-106	आधुनिक उत्तराखण्ड में अर्थव्यवस्था	8
MAHI-107	इतिहास लेखनप्राचीन एवं मध्यकालीन :	8
MAHI-108	इतिहास लेखनआधुनिक :	8
Year II/Semester : 3		
MAHI-201	भारत का इतिहास छठी सदी ईस्वी पूर्व से तृतीय सदी ईस्वी के :मध्य तक	7
MAHI-202	भारत का इतिहासचतुर्थ सदी ईस्वी से सातवीं सदी ईस्वी के मध्य तक :	7
MAHI-203	भारत का इतिहाससातवीं सदी ईस्वी से सोलहवीं सदी ईस्वी के प्रथम चतुर्थांश तक:	7

MAHI-204	भारत का इतिहास सोलहवीं सदी ईस्वी के प्रारंभ से अठारहवीं सदी ईस्वी के :मध्य तक	7
Year II /Semester : 4		
MAHI-205	भारत का इतिहासअठारहवीं सदी ईस्वी से उन्नीसवीं सदी ईस्वी के मध्य तक :	7
MAHI-206	भारत का इतिहासउन्नीसवीं सदी ईस्वी के मध्य से स्वतन्त्र भारत तक :	7
MAHI-207	भारतीय संस्कृतिप्राचीन काल से राजपूत काल तक :	7
MAHI-208	भारतीय संस्कृतिसल्तनत काल से आधुनिक काल तक :	7

5. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN ODL MODETO ACQUIRE SPECIFICSKILLS AND COMPETENCE

An MA History program conducted in Open and Distance Learning (ODL) mode can be appropriate for acquiring specific skills and competencies in the field of history. Here are some reasons why:

- Flexibility: ODL programs offer flexibility in terms of timing and location, allowing students to study at their own pace and on their own schedule. This can be particularly useful for students who have other commitments, such as work or family, and need to balance their studies with these responsibilities.
- Access to resources: ODL programs often provide students with access to a range of resources, such as online libraries, academic journals, and archives. This can allow students to conduct research and engage with historical sources and materials from anywhere in the world.
- Interactivity: Many ODL programs incorporate interactive elements, such as online discussion forums, virtual lectures, and collaborative projects, which can facilitate engagement and interaction among students and faculty.
- Technology skills: Participating in an ODL program requires students to develop a range of technology skills, such as using online learning platforms, video conferencing software, and multimedia tools. These skills can be useful for future careers in history, where digital literacy is increasingly important.
- Self-motivation and discipline: ODL programs require a high level of self-motivation and discipline, as students must manage their own learning and stay on track with their coursework. Developing these skills can be valuable for success in any career, including those related to history.

MA History program conducted in ODL mode can provide students with the flexibility and access to resources they need to develop specific skills and

competencies in the field of history. This can help prepare them for careers in areas such as academia, research, publishing, archives, museums, and public history, among others.

6. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTIONS& EVALUATION:

6.1 PROCEDURE FOR ADMISSIONS

1. The admission for the different programmes offered by the University is done by the Institution in consultation with the University.
2. Application forms are invited from the aspirants through online form floated onthe University website.
3. Aspirants have liberty to pay the application fee/Admission fee either through online banking and they are required to submit the hard copies of the form to the institute.
4. Once the deadline for submitting the application form is over, the online submitted application forms are scrutinized and list of all the candidates who has applied will be floated on the website.

6.2 ELIGIBILITY FOR ADMISSION CRITERIA

- Candidates for admission to the M.A. History PG Degree Programme shall have passed any Under Graduate Degree or equivalent examination of any authority, recognized by this university.

6.3. ELIGIBILITY AND DURATION OF THE COURSE

Programme	Eligibility	Duration	Credits
MA History	Any UG Degree	2 Years	80

6.4 EVALUATION SYSTEM:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment “CIA”: This assessment will be carried out throughout the semester as per the Academic Schedule.

- End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

6.4.1 CONTINUOUS INTERNAL ASSESSMENT "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

6.4.2 THEORY COURSE ASSESSMENT WEIGHTAGES:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Seminar/Assignments/Project/ Lab	5%	--
4.	Surprise Test / Quiz / Lab	5%	--
5.	End Semester Exam	70%	2 to 3 hours

7. 4.3 GRADING SYSTEM

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

6.4.4 GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

6.4.5 GRADE SHEET

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.

- Semester of registration.
- The course code, name of the course, category of course and the credits for each course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken from the first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

6.4.6 CLASS/DIVISION

Classification is based on as follows:

CGPA ≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

6.5 ELIGIBILITY FOR THE AWARD OF M.A. HISTORY

A student will be declared to be eligible for the award of the M.A. History degree if he/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulated

time:

- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Council and approved by the Board of Management of the university.

6.6 RE-VIEW OF ANSWER SCRIPTS / SINGLE VALUATION

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

8. INSTRUCTIONAL DELIVERY MECHANISM

8.1 PERSONAL CONTACT PROGRAMMES

The personal contact programme in every course shall extend over a period of 20 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

8.2 OPTIONAL CONTACT PROGRAMMES

On demand of a sufficient number of students, the Directorate may organize optional contact programmes.

8.3 EXTENSION LECTURES

MPBOU organizes extension lectures to be delivered by eminent scholars ofnational repute from time to time. Students are informed in advance about such extension lectures.

8.4 INDIVIDUAL COUNSELLING AND GUIDANCE

The students can visit the Directorate and seek individual guidance and counselling

from the concerned coordinators. Besides, students can seek guidance from the counsellors engaged bythe Centre for Open and Digital Education of MPBOU.

9. MEDIA

9.1 SELF-LEARNING PRINTED MATERIAL

The students will be provided learning material following the four quadrant approach by the UGC.

9.2 E STUDY MATERIAL & E TUTORIALS

The students are also provided the study material in the e-form which is availableon the official website of the institution. Besides, e-Tutorials are also prepared from time to time in accordance with the general and specific theme related contents of the course syllabus. These are also made available on the same website and are offered as a supplement to the Study Material.

10. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARYRESOURCES

Internet Leased Line

BSNL - 1 Gbps – Lease Line Link are available at the university.

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which

collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: Institute is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-the-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

11. COST ESTIMATE OF THE PROGRAMME

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
MA History	6,00000/-	3,00000/-	9,00000/-

12. QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMME OUTCOMES

Centre for Quality Assurance Cell (CIQA) MPBOU created under the NAAC guidelines, is an august body at MPBOU comprising Senior Academicians, Thought Leaders, Eminent Alumni, Industry representative, Retired and Serving Senior Academicians from institutions of repute, Management Representative and a Local Body Member. The CIQA acts as a guiding force to ensure the quality of services and undertake reforms in terms of Infrastructure and Personnel addition. CIQA meets once in three months with a set agenda, for which the inputs are sought from various stake holders such as students, teachers, parents, alumni, administration and management. The CIQA in MPBOU ensures the adoption of qualitative distance education right through all the processes of each programme

offered by the university**.** The salient features of OL programme in MPBOU are

- Very Strong Industry - Academic Collaboration
- Live class room sessions
- Online virtual class room sessions with one to one interactions
- Highly productive learning environment and digital library access
- Hands on training on latest cutting edge technologies and laboratoryfacilities
- Experiential learning with case studies and mini project
- MOOC courses enabled Curriculum
- Industry focused electives offered by well experienced faculty

Expected program outcomes for an MA History ODL program include:

- Advanced knowledge and understanding of historical events and their significance in shaping societies and cultures.
- The ability to critically evaluate historical evidence and construct historical arguments based on evidence.
- An understanding of the different approaches and methodologies used in historical research.
- The ability to conduct independent research and produce scholarly work at an advanced level.
- Effective communication skills, both oral and written, in presenting historical arguments and research findings.
- The ability to think analytically and critically about historical issues and debates.

The quality assurance mechanisms and expected program outcomes for an MA History ODL program should be designed to provide students with a high-quality and rigorous education, while also ensuring that they have the necessary support to succeed in their studies.

PAPER - VI - 20 ECONOMIC HISTORY OF INDIA C. AD 1757-1947

(Questions will be se from each unit) 100 marks; 80 Lectures

UNIT 1

a. Introduction
   - i. Issues and problems of Indian Economic History. Different approaches and their limitations
   - ii. Sources of Economic History of British India.

b. Indian Economy in the Mid-Eighteenth Century
   - ii. Nature and structure of economy : rural and urban
   - iii. Agrarian and non-agrarian production, Technology and methods of production.
   - iv. Trade and indigenous banking
   - v. Debate on the potentialities of capitalist change in the pre-colonial economy: question of 'growth' in the late pre-colonial economy.

c. Early Phase of Colonial Economy
   - i. Mercantilism and European economic interests in India. The East India Company and its rule in Bengal
   - ii. Indian manufactures for external market - internal commerce; the later debate on the question.

UNIT 2 Agrarian Settlements and Agrarian Production

a. Agrarian conditions - Regional variations

b. The Permanent Settlement - objectives, operations, effects and official critiques.

c. Ryatwari Settlements and Mahalwari system.

d. Consequences of periodic settlements.

e. Increase in the cultivation of export crops. New elements in the organization of production of export commodities.

f. Ecological changes and rural society (with particular reference to the implications of increasing control of the colonial state on forests as distinguishable from 'settled peasant villages'.

UNIT 3

a. Traditional Handicraft Industry and the question of De-industrialization
   - i. Artisans and handicraft products background
   - ii. Industrial capitalism and import of English cloth and yarn
   - iii. Debate over de-industrialization - regional variations.
   - iv. Handicraft industry in transition under colonialism
   - v. Capital and labour in handicraft industry.

b. Railways and Indian Economy
   - i. Economic and political compulsions
   - ii. Unification and subjugation of Indian market
   - iii. Effects on agrarian production and export of raw material - commercialisation of agriculture
   - iv. Famines and British policy, nationalist criticsm.

UNIT 4

a. Large Scale Industry

i. Conditions before the emergence of modern industry

ii. Capitalist investment in India - Indigenous and British effects

iii. Modern industry in pre-1914 phase - nature - main industries : cotton, jute, iron and steel and others. Impediments to growth, nationalist critique, industry and the First World War phase with special reference to economic depression.

iv. Colonial state and industrial growth

v. Rise of industrial labour ; labour force in large scale industry; types of labour movements; changing social composition of industrial labour.

b. Foreign Trade and Balance of Payments Changing nature of external trade - stages of Merchantilism, industrial capital and finance capital. Drain of Wealth and British overseas trade.

UNIT 5

a. The Fiscal System

i. Shift from direct to indirect taxation

ii. Tariff and excise

iii. Monetary policies and credit system

b. Price Movements.

i. Main triends in the movements of prices.

ii. Impact on rent of landlords.

iii. Impact on state revenues and trade.

c. Population

i. Poplulation growth pre and post Census estimates.

ii. De-urbanization controversy.

iii. Trends in demographic changes.

M.A. PREVIOUS

PAPER - I HISTORIOGRAPHY, CONCEPT, METHODS AND TOOLS

(Question will be wet from each unit) 80 Marks

UNIT - 1 (a) Meaning, Nature and Scope of History.

(b) Collection and Selection of data, evidence and its Transmission, Causation and 'Historicism'.

UNIT - 2 History and other Disciplines : Archaeology, Geography, Anthropology, Sociology, Economics, Philosophy, Politics and Literature.

UNIT - 3 Traditions of Historical writing : Greco - Roman traditions, Ancient Indian tradition, Medieval Historiography-western, Arabic, Persian and Indian, Modern Historiography, Positivist, Whig, Classical Marxist and Annuals.

UNIT - 4 Approaches to History - Theological, Orientalist, Imperialist, Nationalist, Marxist, Recent Marxist, Subaltern and Post - Modernist.

UNIT - 5 Major Theories of History - Cyclical, Historical Materialism, Sociological, Comparative, Structural, World System, Ecological and Post - Modernist critiques of history.

PAPER - II WORLD HISTORY FROM 1776 TO 1890 A.D.

(Questions will be set from each unit) 80 Marks

UNIT - I	(a)	The American war of Independence. Its causes, events and Impact.
	(b)	The French Revolution. Its causes, events and Impact.
	(c)	National Assembly and the Directory.
UNIT - II	(a)	The Era of Napolean Bona Parte.
	(b)	The Congress of Vienna and the Concert of Europe.
	(c)	The Age of Reaction - Matternich.
UNIT - III	(a)	The Eastern Question from 1815 to 1890 with special reference to the Crimean war and the Congress of Berlin.
	(b)	Rise and Growth of Liberalism in England - Reform Acts of 1832, 1867 and 1885 & the Chartist Movement.
	(c)	Russia from 1815 to 1890 with special reference to Alaxender I and Nicholas I.
UNIT - IV	(a)	The American Civil War.
	(b)	The Unification of Italy and Germany.
	(c)	The Age of Bismarck - His home and foreign policy.
UNIT - V	(a)	The Importance of the Middle East and Ambitions and rivalries of European Powers in the Middle East from 1800 to 1890.
	(b)	Colonialism and Imperialism in Japan - Meiji Restoration and Process of Modernization.
	(c)	Colonialism and Imperialism in China with special reference to the First & second Opium Wars. The first Sino - Japanese War, Taiping Rebellion etc.

PAPER - III HISTORY OF INDIA FROM 1756 TO 1857.

(Questions will be set from each unit) 100 Marks, 80 Lectures

UNIT - 1

(a) Sources-Archival records, private papers, news papers, periodicals and oral tradition.

(b) Approaches and interpretation-different schools of thought.

(c) Late pre-colonial order-polity, economy, society and culture.

UNIT - 2

(a) Expansion of British Power-Ideology, Policies and Programmes of expansion.

(b) Instruments of expansion-war and diplomacy.

(c) Colonial construction of India-Administrative structure, Police, Army and Law and idelogies of the raj and racial attitudes.

UNIT - 3 Social Policies and Social change.

(a) British under standing of Indian society - orientalist, Evangelical, utilitarian and ideas of change.

(b) Education - indigeneous and modern.

(c) Social reform and emerging social classes.

UNIT - 4 Economic Organization : Changes and continuity

(a) Rural Economy : i. Eastern India., ii. South India.

iii. Western India. iv. Central and northern India.

v. Princely states.

Note : This should be studies with special emphasis on new types of land revenue administration, commercialization of agriculture, rural indebtedness, rural power relations, land-lords, peasants and agricultural labour and institutions of finance.

(b) Urban Economy :

i. Artisans and industrial production.

ii. Debate over de-industrialization.

iii. Rise of internal markets and urban centers, communication-posts and telegraphs, railways etc.

UNIT - 5 Resistance to Colonial Rule

a. Nature and forms of resistances.

b. Pre-1857 peasant, tribal and cultural resistance.

c. Revolt of 1857 - ideology, programmes, leadership at various levels, peoples participation and British repression and response.

PAPER IV - ECONOMIC HISTORYOF INDIA FROM 1200 TO 1750 A.D.

(Question will be set from each unit) 100 marks, 80 Lectures

UNIT - I

(a) Sources - Inscriptions, commentaries on Dharma Shastras, Mouments and sculpture, Trikh-i-Firozshahi, Fatawa-i-Jahanderi, Babarnama, Akbarnama, Ain-i-Akbari, Muntakhab-ul-Tawarikh, Tuzluk-I-Jahandari, Muntukhab-ul-libab, Bernier, Selections from Peshwa Daffar, Rajasthani Khayats, Pargana-ri-vigat, etc.

(b) Historiography - different approaches

(c) State - nature, theory of Kingship, Problem of Legitimacy, pressure groups, state and regional identities and evolution of indigenous theories.

UNIT - II

(a) Evolution of the institutional structure and system of government - Iqta, amaram, mansab and jagir, centre and provinces, state and rural society and village administration.

(b) Ruling Classes-Evolution composition, immigration, local alliances and conflicts.

(c) Systemic crisis and collapse - Tensions and conflicts inherent in the imperial system, patterns of resistance, collapse of empire, emergence of regional states, patterns of state formation.

UNIT - III

Agrarian Economy and the state - Control over land and relations of production, resource base and the pattern of resources use in agrarian production, nature and magnitude of faxation and agrarian relations.

UNIT - IV

(a) Trade commerce and trhe monetory system - Inland and maritime trade, structure and volume of trade, role of Arab and European traders, Indian merchants and their commercial practives, medium of exchange, currency, coinage and banking.

(b) Growth of cities and towns - nature and classification, demographic changes, administration, urban communities and morphology of cities.

UNIT - V

(a) Industries and production technology, textiles, agro-industries, metal technology, artisans and mercantile groups and their role in production.

(b) Interpreting the eighteenth century.

M.A. FINAL

PAPER - V TWENTIETH CENTURY WORLD

(Question will be set from each unit) 100 Marks, 80 Lectures

UNIT - I Legacy of the 19th Century and world order upto 1919.

(a) Growth of Nationalism Capitalism and Imperialism in U.K., Frances, Germany and Japan.

(b) Origins of the First World War, Peace settlement and its long-term consequences.

(c) Making of the Russian Revolution-establishment of a socialist state, its economic and political aspects; and responses and reactions in the west.

UNIT - II World Between the two wars.

(a) Working of the League of Nations and collective security.

(b) Crisis in capitalism, Great Depression and Problems of Repression and Disarmament.

(c) Growth of Totalitarian Regimes in Germany, Italy and Japan.

UNIT - III Second World War and the New Political order.

(a) Origins, nature and results of the second world war :

(b) Nationalist Movement and Decolonization.

(c) Communist Revolution in China and its impact on world politics.

UNIT - IV Cold war and its effects.

(a) Ideological and political basis of cold war, Pacts and Treatics, tensions and rivalries.

(b) Non-Aligned Movement and the Third World.

(c) UNO and the concept of world peace, and regional tensions - Palestine, Kashmir, Cuba, Korea, Vietnam.

UNIT - V Age of Progress and Disintegration of socialist block.

(a) Progress in Industry, Agriculture, Science and Technology, Communication and Informattion.

(b) Cultural Revolution, Civil Rights Movements, Apartheid and Feminism.

(c) Socialism in decline, Globalization and its impact.

PAPER - VI - HISTORY OF INDIA FROM 1858 TO 1964.

(Question will be set from each unit) 100 Marks, 80 Lectures

UNIT - 1 Strategies of Imperial Control

(a) British Government and its Control over Indian administration-Central, Provincial and district.
(b) Relations with princely states.
(c) Principles and policies governing foreign relations.
(d) Constitutional development upto 1947 with special emphasis on the Govt. of India Acts of 1919 & 1935.

UNIT - 2 Economy

(a) India in the imperialist world system - Volume and Composition of urban flow of capital, balance of payments and the drain and currency problem.
(b) Agrarian relation - regional diversities and their administration, social and economic origins of commercialization and its effects, nature and extent of stratification within the peasantry and Land Lords, tenants and the state.
(c) Domestic and craft industry, rise of modern industry and capitalist class and rise of working class.

UNIT - 3 Society

(a) Social composition - ethnic groups - tribes, class and community.
(b) Colonial intervention and social change - reform movements, modern education, rise of middle classes and caste movements.
(c) Women - Status, property rights, reform legislation and political participation.
(d) Tradition and modernity.

UNIT - 4 National Movement

(a) Approachs to Indian nationalism, conceptual debates.
(b) Emergence of organized nationalism.
(c) Trends till 1919.
(d) Gandhian Movements.
(e) Revolutionary and LeftMovements.
(f) States Peoples Movements.
(g) Communal Politics and Partition.
(h) Subhash Bose and INA, and Telengana.

UNIT - 5 Independent India

(a) Visions of New India.
(b) Integration of Princely States.
(c) Beginnings of planned economy.
(d) Land question and Industrial Policy.
(e) Education, health Science and Technology.
(f) Foreign Policy - non-alignment.
(g) Women - Hindu Code Bill.

PAPER - VII - Outline of Indian Cuture

The course aims to impart basic knowledge of Indian Culture of students. This would help them to understand the roots of Indian history. The different chapters would reflect the values, traditins, symbols and artifacts of Indian Cultur.

I. Meaning and historical background

1. Meaning of cuture and salient features and different interpretations of Indian cuture.
2. Pr and Proto history
3. Historical outline

II. Relgious ideas and practices

1. Ancient
2. Mediaeval
3. Modern

III. Society and Polity

1. Socio-economic vaues and institutions
2. Political values and Institutions.

IV. Literature and Art

1. Literature
2. Art

V. Philosophy & Science

1. Philosophy
2. Science

PAPER - VIII - STATE IN INDIA

(Questions will be set from each unit) 80 Marks

UNIT 1	a.	Towards formation of the state Proto-States : chiefdoms of later Vedic times, and Territorial States in the age of Buddha.
	b.	The Mauryan State Socio-economic basis; nature and functions and theory and practice.
UNIT 2	a.	Gupta Polity : Administrative organization; tributary system; and socioeconomic basis.
	b.	State formation in the South : Chiefdoms and Cholas.
UNIT 3	a.	Nature and functions of the State under the Sultans of Delhi; and Islamic theory of state
	b.	Vijayanagara State : Structure; features; and nature.
UNIT 4	a.	The Mughal State's Administrative institutions; Mansbdari system : socio-economic basis.
	b.	Colonial State : Political economy; state apparatus; and instruments of legitimation.
UNIT 5	a.	Stages of development of the nation-stat in India
	b.	Stat in Independent India.
		Continuity and change.

Or

Or

PAPER - VIII - HISTORY OF IDEAS

(Questions will be set from each unit) 80 Marks

UNIT - 1 Political - Ancient and Medieval

a. Ideas of polity - monarchy, oligarchy and proto - republicanism.
   i. Ancient, ii. Medieval.
b. Rights and duties of subjects.
c. Legitimacy of political power.
   i. Texts, ii. Practice.

UNIT - 2 Political - modern

a. Colonialism and the emergence of new political ideas
   i. Liberalism; democracy, ii. Utilirianism, iii. Positivism
b. Nationalism and Socialism.
c. Communalism and Secularism.

UNIT - 3 Social Ideas

a. Formation of early ideas on hierarchy.
b. Reationalization and justification of hierarchy.
   i. Varna, ii. Jati, iii. Family, iv. Women
c. Anti-caste movements during the colonical period - Satya Shodnak, Sree Narayana movement, Self-respect movement.
d. Social basis of nationalism.

UNIT - 4 Religious and Philosophical Ideas

a. Formation of religious ideas in early India.
   i. Vedas, Upanishads and Vedanta
   ii. Six Schools of Indian Phiosophy
   iii. Jainism, iv. Buddhism
b. Ideal of dissent and protest - heterodox sects.

UNIT - 5

a. Forms of religious throught and cultural synthesis.
   i. Bhakti Movement : Shaivite and Vaishnavite Regional Developments.
   ii. Sufism, iii. Sikhism
b. Reform and Revivalism - Brahmo Samaj, Prarthana Samaj, Arya Samaj, Deoband and Aligarh Movement, Singh Sabha Movement.
c. Ideas of religious universalism and fundamentalism in modern India.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.S.W.

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.S.W.

Introduction :

MSW stands for Master of Social Work, and DOL stands for the Department of Labor. The Master of Social Work degree is a graduate-level program that prepares students for professional practice in the field of social work. The Department of Labor is a government agency that oversees various aspects of the workforce in the United States.

In the context of DOL, a Master of Social Work degree can be useful for individuals who are interested in pursuing careers in social work and related fields. Social workers are employed in a variety of settings, including government agencies, hospitals, schools, and nonprofit organizations. They work to help individuals, families, and communities overcome social, emotional, and economic challenges.

A Master of Social Work degree provides students with a strong foundation in social work theory and practice, as well as advanced skills in counseling, research, and policy analysis. Graduates of MSW programs are qualified to work as licensed clinical social workers, program directors, and policy analysts, among other roles. The DOL may employ social workers in various capacities, such as conducting research, providing training and technical assistance, and administering social welfare programs.

(i) (a) Programme's Mission: The mission of a Master of Social Work (MSW) program is to prepare graduates to become competent, ethical, and effective professionals in the field of social work. The MSW program aims to provide students with the knowledge, skills, and values necessary to promote social justice, empower vulnerable populations, and improve the well-being of individuals, families, and communities.

The specific goals of an MSW program may vary depending on the institution, but typically include the following:

- To provide students with a comprehensive understanding of social work theory, practice, and research.
- To equip students with the skills necessary to assess, plan, and intervene with individuals, families, groups, and communities.
- To instill in students a commitment to social justice, diversity, and cultural competence.
- To prepare students to work effectively with individuals and families who are struggling with various issues, such as poverty, addiction, mental illness, and abuse.

- To prepare students to work within organizations and systems to effect change and promote social welfare policies that advance the well-being of vulnerable populations.
- To promote the development of professional identity and ethical practice in social work.

Overall, the mission of an MSW program is to prepare graduates to make a positive impact in the lives of those they serve and to advance the field of social work through advocacy, leadership, and research.

(b) Objectives:

The objectives of a Master of Social Work (MSW) program are designed to provide students with a strong foundation in social work theory, research, and practice. The objectives vary depending on the specific program, but generally include the following:

- To provide students with a comprehensive understanding of the social, economic, and political factors that contribute to social inequality and injustice.
- To equip students with the knowledge and skills necessary to work with diverse populations, including individuals, families, groups, and communities.
- To provide students with advanced training in social work practice, including assessment, intervention, and evaluation.
- To prepare students to apply evidence-based practices in social work, including the use of research to inform practice.
- To promote the development of leadership and advocacy skills in social work, including the ability to effect social change at the individual, organizational, and policy levels.
- To instill in students a commitment to ethical and professional practice, including the ability to recognize and address ethical dilemmas in social work practice.
- To provide students with opportunities for supervised practice in social work settings, including field placements and internships.

Overall, the objectives of an MSW program are designed to prepare students for professional practice in social work, as well as for leadership roles in the field. Graduates of MSW programs are expected to be competent, ethical, and effective practitioners who are committed to promoting social justice and advancing the well-being of individuals, families, and communities.

(ii) Relevance of the Programme with HEI's Mission and Goals: The Master of Social Work (MSW) program is highly relevant to the mission and goals of higher education institutions (HEIs). HEIs are committed to providing students with a high-quality education that prepares them for successful careers and leadership roles in their chosen fields. The MSW program aligns with this

mission by providing students with the knowledge, skills, and values necessary to become competent, ethical, and effective professionals in the field of social work.

One of the primary goals of the MSW program is to prepare students for social work practice in a wide range of settings, including government agencies, hospitals, schools, and nonprofit organizations. This aligns with the mission of many HEIs, which is to prepare graduates for successful careers in their chosen fields. By offering a rigorous and comprehensive curriculum, the MSW program helps students develop the competencies necessary to succeed in the complex and challenging field of social work.

Another goal of the MSW program is to promote social justice and advance the well-being of vulnerable populations. This is an important component of many HEIs' missions, which often include a commitment to promoting social equity and inclusion. By instilling in students a commitment to social justice, the MSW program helps prepare graduates to become leaders and advocates for change within their communities and beyond.

Overall, the MSW program is highly relevant to the mission and goals of HEIs, as it provides students with the knowledge, skills, and values necessary to become successful professionals in the field of social work, while also promoting social justice and advancing the well-being of individuals, families, and communities.

(iii) Nature of prospective target group of learners:

The prospective target group of learners in a Master of Social Work (MSW) program includes individuals who are interested in pursuing careers in social work and related fields. This group may include recent college graduates, mid-career professionals, and individuals who are seeking a career change or wish to advance their existing social work careers.

Prospective learners in an MSW program are typically individuals who have a strong desire to make a positive impact on the lives of others, particularly those who are vulnerable or disadvantaged. They may have experience volunteering or working in social service organizations, or they may have personal or family experiences that have inspired them to pursue a career in social work.

In terms of educational background, prospective learners in an MSW program may have a bachelor's degree in social work or a related field, or they may come from a variety of academic backgrounds, such as psychology, sociology, or human services. Some MSW programs may require applicants to have relevant work or volunteer experience in social work or related fields.

The nature of the prospective target group of learners in an MSW program is characterized by a commitment to social justice, cultural competence, and ethical practice. They are passionate about helping others and are interested in developing the skills necessary to work with diverse populations, including individuals, families, groups, and communities.

Overall, the prospective target group of learners in an MSW program is diverse and includes individuals from a variety of backgrounds who share a common goal of making a positive impact on the world through their work in social work and related fields.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The Master of Social Work (MSW) program can be appropriately conducted in the Open and Distance Learning (ODL) mode, as it is designed to provide students with specific skills and competencies that can be acquired through a combination of self-directed learning, online resources, and practical field experiences.

The ODL mode of learning allows students to engage in a flexible and self-paced approach to learning, which can be particularly beneficial for students who are working full-time or have other personal or professional obligations. In an MSW program conducted through the ODL mode, students can access course materials and assignments online, participate in online discussions and virtual classrooms, and collaborate with faculty and other students in a variety of ways.

The MSW program requires students to complete a significant amount of practical field experience, which can be accomplished through a combination of onsite and online options. Many MSW programs offer online field placement opportunities, which can allow students to gain practical experience while continuing to work or attend to other obligations.

The appropriateness of an MSW program to be conducted in the ODL mode depends on the program's ability to provide students with a high-quality learning experience that is equivalent to that of a traditional on-campus program. This requires careful planning and implementation of effective instructional strategies, as well as ongoing evaluation and improvement of the program.

Overall, an MSW program can be appropriately conducted in the ODL mode, provided that the program is designed and delivered in a way that meets the specific needs and learning objectives of students, and provides them with the skills and competencies necessary for successful practice in the field of social work

(v) Instructional Design: The M.S.W. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

The Programme is of 2 year duration with annual examinations. The maximum period allowed is 4 years (double the duration). The Programme structure is as below.

S.No	Title of the Course	Course code	Marks (I &E)	Credits (1Credit =30 hrs)
I Semester				
1.	Introduction to Social Work	MSW-11	30+70	4
2.	Social Work Practice with Individuals	MSW-12	30+70	4
3.	Social Work practice Groups	MSW-13	30+70	4
4.	Sociology for Social Work	MSWAL-11	30+70	2
5.	Economic and Political System	MSW-14	30+70	2
II Semester				
6.	Community Organization and Social Action	MSW-15	30+70	4
	Social Welfare Administration	MSW-16		4
7.	Human Rights and Social Legislations	MSW-17	30+70	4
8.	Psychology For Social Work	MSWAL-12		2
9.	Field Work (orientation Visits)	MSWF-11	30+70	6
III Semester				
11.	Social Work Research and Statistics	MSW-21	30+70	4
12.	Communication for Social Work	MSW-22	30+70	2
13.	Fields of Social Work 1	MSW-23	30+70	4
14.	Social Entrepreneurship and Management	MSW-24	30+70	2
15.	Field Work practicum (Concurrent)	MSWF-21	30+70	6
IV Semester				

16.	Counseling skills and Techniquesfor social Work	MSW-25	30+70	4
17.	Disaster management	MSW-26	30+70	2
18.	Fields of Social Work II	MSW-27	30+70	4
19.	Youth Development	MSW-28	30+70	2
20.	Dissertation	MSWP-21	30+70	6
		Total		**72**

(a)Detailed Syllabus of the Programme: Given as Annexure -01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.S.W. programme is a 72-credit

programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.S.W. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards) documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: A Bachelor's degree from a recognised university.

Fee Structure: M.S.W. Previous & M.S.W. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each

Course.

- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of the concerned Course Faculty.
- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electives and Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter

grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good
50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \quad C_i \;\; P_i}{\sum_1^n \quad C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.

- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)
- The total number of credits earned by the student up to the end of that semester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UG degree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA

≥ 8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the

curriculum corresponding to the discipline of his/her study within the stipulated time:

- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.
- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried out by the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Internet Leased Line

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching andto conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	Programme Development	Delivery	Total
M.S.W.	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are important aspects of any educational program, including M.S.W.. Here are some quality assurance mechanisms and expected program outcomes of M.S.W.:

Quality Assurance Mechanisms:

- Regular review and revision of the curriculum to ensure that it remains current, relevant, and aligned with industry standards.
- Regular monitoring of teaching methodologies and assessment procedures to ensure that they are effective in achieving the program's learning outcomes.
- Regular evaluation of faculty members to ensure that they are qualified, experienced, and effective in delivering high-quality instruction.
- Periodic external reviews by experts in the field to provide feedback on the quality and relevance of the program.

- Implementation of a feedback system that enables students to provide constructive feedback on the quality of the program and the teaching methods used.

Expected Program Outcomes:

- Thorough understanding of the fundamental principles of physics, including classical mechanics, electromagnetism, quantum mechanics, thermodynamics, and statistical physics.
- Ability to apply mathematical and computational tools to solve complex problems in physics.
- Knowledge and skills in laboratory techniques, data analysis, and research methodologies related to physics.
- Ability to design and conduct independent research projects in the field of physics, analyze and interpret data, and communicate research findings effectively.
- Effective communication skills, both written and verbal, to effectively present scientific information to diverse audiences.

By implementing these quality assurance mechanisms and ensuring that the program achieves these expected outcomes, M.S.W. can provide high-quality education and prepare learners for successful careers in various fields related to physics.

SYLLABUS FOR MASTER OF SOCIAL WORK(MSW)

SEMESTER I

MSW-101:-SOCIAL WORK PROFESSION: HISTORY AND IDEOLOGEIS

3 hrs duration Max. Marks: 40

Note : The question paper will be divided into three parts - ABC

Unit : I Social Work Concept & Philosophy

i. Conceptual Framework of Social Work
ii. Goals and Values in Social Work
iii. Principle of Social Work Profession and their Applications
iv. Organized and Scientific Charity
v. Beginning of Social Work Education
vi. Ethical Responsibilities in Social Work
vii. Attributes of a Profession in Social Work

Unit: II Indian History of Ideologies for Social Change

i. Hindu Reform Movements
ii. Muslim Reform Movements
iii. Gandhian Ideology and Sarvodaya Movements
iv. Dalit Movement

Unit : III Integrated Social Work Practice

i. Concept and Characteristics of Social System
ii. Units of Social Work Intervention: Individuals, Family,

Group, Communities and Organizations

iii. System Approach to Social Work Practice
iv. Integrated Approach to Social Work Practice
v. Role of Professional Social WorkerText

Books

1. Dubois, Bendra ; Miley, K.K. ,Social Work : AN Empowering Profession.Allyn & Bacon : Bostan 1992.
2. Desai, Murli; Ideologies and Social Work

Rawat Publications : Jaipur 2002 (Acc No. 5328)Reference

Books :

3. Morales, Armando; Sheafor, Bradford W.;Social Work-A Profession ofMany Faces. Allyn. & Bacon Pub: Massachusetls 1992

4. Skidmore, RexA. et al .;Introduction to Social WorkPrentice Hall Inc : New Jersey 1974

5. Wadia, A.R. ;History & Philosophy of Social Work in IndiaAllied Pub: Bombay 1968.

(Acc. No. No. 2187), Chapter 1,3 & 4 (Unit III & IV)

6. Sinha, Archna ; The Social and Political Philosophy of Sarvodaya Janaki Publications : Patna 1978 (Accn. No. 2565) Chapter 7 (Unit IV)

7. Chand, Tara ; History of Freedom Movement in IndiaVol. II Publication Division, GOI : New Delhi 1992

8. Zofia. T.Butrym ; The Nature of Social WorkThe Macmillan Press Ltd., London 1976

9. Encyclopaedia of Social Work in India ,Ministry of Welfare PublicationDivision GOI : New Delhi

MSW –102 :-SOCIOLOGY FOR SOCIAL WORK IN INDIA

3 hrs duration Max. Marks: 40

Note : The question paper will be divided into three parts - ABC

Unit 1 : Basic Concepts

i. Sociology : Meaning and Scope

ii. Relationship with Social Work

iii. Society as a system of relationship

iv. Community and its importance

v. Social Structure : Meaning, Status and Roles

Unit : II Social change and Indian Society Indian Society

i. Social Change : Meaning, Concept and Characteristics

ii. Composition of Indian Society

iii. The Concept of Unity of Diversity

iv. Social Classification in India : Tribal, Rural and Urban

v. Weaker and Vulnerable Sections and Minority Groups

vi. Social Stratification in India : Meaning, Caste and Class DivisionsUnit : III Social Disorganization

i. Concept and Causative factors of Indian Social Problems – Analysis

ii. Intervention of Social Problems : Government and VoluntaryEfforts at Micro and Macro Levels

iii. Role of the Social Workers in Identifying Social Problems and Development of Appropriate Strategies

Text Books :

1. Ahuja, Ram ;Indian Social System'Rawat Publication : Jaipur 1994

2. Maclver Page Society ;Columbia University Press : ColumbiaReference Books :

3. Davies, Martin (Edited);The Sociology for Social Work Roudledge : NewYork 1994 (Acc. No. 4564) Chapter 4 & 7 (Unit I)

4. Haralambos, M. ;Sociological Themes and Perspectives

Oxford University Press: Bombay 1983 (Acc No. 3265) (Unit I & II)

5. Bottomore, T.B.Sociology ;Blackie and Sons (India) Ltd., New Delhi 1975(Acc No. 661)Part I and & II (Unit II & IV)

6. Madan,G.R. ;Indian Social Problems Vol. II

Allied Publishers : Bombay 1967 (Acc. No. 1155) (Unit V)

7. Srinivas, M.N. ,India : Social Structure ,Hindustan Publishing Corporation :Delhi 1980(Acc No. 2874) (Unit III & V)

8. Kuppuswamy, B.,Social Change in IndiaVikas Publishing House Pvt. Ltd.Ghaziabad 1972(Acc. No. 3485) (Unit IV)

MSW-103 :- Human DEVELOPMENT

3 hrs duration Max.Marks: 40

UNIT – I Human Development

i. Social Psychology: Meaning, Concept and Scope

ii. Principles of Growth and Development

iii. Determinants of Development: Heredity and Environment,

Social Customs, Traditions

iv. Deprivation and Development During Stages and Life Span from Conception to Old Age.

Unit : II Personality

i. Personality – Meaning, Concept and Nature

ii. Determinant of Personality : Physical, Social and Family

iii. Trait and Type Theories of Personality

iv. Behavior and Learning Theories

UNIT : III Health and Hygiene

i. Concept of Health and Hygiene

ii. Social and Cultural Contexts in India

iii. Prevention and Social Medicine – Concept and Significance

iv. Family Life Education (FLE) : Meaning and Significanceto the child and adolescent

Text Books :

1. Davison, G.C; Neale, J.M. Abnormal Psychology ;John Wiley & Sons : NewYork 1994

2. Hall, Calvia, S; Lindzey, G. Theories of Personality Wiley Eastern : NewDelhi 1991

Reference Books :

3. Harlock, F.B. ; Personality Development

Tata MacGraw Hill Pub. CO. New Delhi 1974 (Unit-I).

4. Jehu, Derek; Learning Theory & Social Work

Routledge & Kegan Paul : London 1967 (Acc. No. 1436) (Unit-II)

5. Cameron, Norman; Personality Development and PsychotherapyHoughton Miffin Co. Boston 1963 (Acc. N. 1845)

6. P. James; Poston, Leo ; Experimental Psychology Kalyani Publication : New Delhi 1998 (Acc. No. 4617)

7. Coleman, James et. Al.; Abnormal Pyschology & Modern Life

1998 (Acc. No. 4291) (Unit –IV)

8. Park,, J.E.; Park, K.; Preventive and Social Medicine Baransides Bharot : Jabalpur 1991(Acc. No. 4235) (Unit V)

9. Korchin S.J. ;Modern Clinical Psychology, Part- 4, PsychotherapyBasic Books Inc: New York 1986 (Page NO. 203-211), (Unit V)

MSW-104 :-SOCIAL WORK WITH INDIVIDUALS

3 hrs duration **Max. Marks: 40**

Unit 1 : Social Case Work : An Introduction

i. Meaning, Concept & Objectives of Case Work

ii. Philosophical Assumptions and Case Work Values

iii. Components in Case Work

iv. Principles of Social Case Work: Contribution of Fried Lander and Biestic

Unit 2 : Techniques and Skills in Social Case Work

i. Case Work Relationship : Conceptual Framework

ii. Rapport Building, Activating Resources

iii. Basic Communication and Helping Skills

iv. Counseling

Unit 3 : Understanding the Client System & Theraputic approach

i. Psychoanalytical Theory

ii. Diagnostic School and Psychosocial Theory

iii. Functional School and Functional Approach

iv. Behavior Modification Approach

v. Problem Solving Approach

vi. Crisis Intervention Approach

vii. Eclectric Approach

Text Books :

1. Zofia, T. Butrym ; The Nature of Social Work
Macmillan Press: London 1974 (Acc. No. 2674)
2. Mhetras, B.G. Understanding Social Case WorkMankal
Talas: Bombay 1966 (Acc No. 690)

Reference Books :

3. Skidmore, Rex A. et al. Introduction to Social Work , Prentice Hall Inc: NewJersey 1974 (Acc No. MSW-48)
4. Biestek, Felix P. The Case Work Relationship Unwin University Books :London 1987 (Accn. No. 1189) (Unit II & III).
5. Perlman, H.H. Social Case Work : A Problem Solving ProcessUniversity of Chicago Press: Chicago 1957 (Unit I & II)
6. Turner, F. Social Work Treatment New Your Press: New York 1974
7. Roberts, Robert, Robert, H. Nee; Theories of Social Case Work TheUniversity of Chicago Press: Chicago (Unit IV & V)
8. Encyclopaedia of Social Work in India Ministry of Welfare Publication Division GOI : New Delhi 1968Vol. I (Acc. No. 4418) Pg. 63 – 73 (Unit-I)

SEMESTER-II

MSW-205:- **Social Growth & Development**

3 hrs duration Max. Marks: 40

UNIT – 1 : Development

- Concept and indicators of development, Economic, Social, demographic andcultural aspects of development
- Concept of Sustainable Development..
- Appropriate strategies to achieve Sustainable Development.
- Inter-relation between Sustainable Development & Economic Development.

UNIT – 2 : Development & Natural Resources

- Renewable and Non-renewable resources.
- Population Growth &its impact on Natural Resources.

- Conservation of Natural Resources.
- Bio-diversity and conservation of wild life
- Human Resources as a Function of Ecosystem.

UNIT – 3 :Social Growth

- Population and food production, Food deficit and hunger.
- Limits and constraints, Step towards food security,
- Role of agriculture in the Indian Economy and Development, coordinatingpopulation and agricultural policies with special reference to food security.

MSW-206 :- Society **& Environment**

3 : hrs duration Max. Marks : 40

UNIT - I

- Population growth &Natural resources; quantitative and qualitative aspects.
- Effect of growing Population on wildlife protection and conservation
- Biotic and Abiotic resources, Renewable and non-renewable resources.

UNIT – II

- Population growth and various pollutions such as air–pollution, water-pollution,noise-pollution, radioactive- pollution.
- Soil pollution .Soil erosion and its consequences.
- Waste Generation and Domestic waste, Hazardous waste, Nuclear waste,
- their impacts and management strategies with special reference to India.UNIT- III
  - Consequences of population explosion on human resources.
  - Social forestry, Afforestations, Desertification, Salinity and water logging.
  - Definition and concept of sustainable development, Economic aspect of sustainable development, Social aspect of sustainable development, Environmental aspect sustainable development.

MSW-207 :- SOCIAL WORK RESEARCH

3 hrs duration Max. Marks: 40

UNIT-1: BASICS OF RESEARCH

i. Social Work Research – Meaning, Purpose and scope

ii Research Process- Qualitative and Quantitative Research iii Hypothesis – Meaning, Attributes and Types of Hypothesisiv Theory Construction – Meaning, Inductive and Deductive

v Research Design- Meaning and Importance, Types of Research (Survey,Case Studies,

Content Analysis, Historical Analysis)

UNIT-2: TOOLS OF DATA COLLECTION

i. Sampling : Meaning and Utility

ii. Types of Sampling : Survey method, Case studies, Content analysis andHistorical analysis

iii. Sources of Data : Primary and Secondary

iv. Participant Observation : Questionnaire, Interview- Schedule andInterview techniques

UNIT-3: SOCIAL STATISTICS

i. Measures of Central Tendency : Mean, Median and Modeii
Measures of Variability : Standard Deviation

iii Statistical Difference: Chi- square test

iv Rank Correlation and Simple Regression

v Analysis of Variance- One way & Two way analysis

Text Books

1. Alston, Margaret and Bowles, Wendy; Research for Social WorkersRoutlege : London 2003
2. Das, D.K. Lal ;Practice of Social Research – Social Work PerspectiveRawat Publications : Jaipur 2000

Reference Books :

3. Goode, W. and Hatt, P. Methods in Social Research
McGraw Hill: New York 1962 (Unit I, II & III)
4 Blaikie, Norman; Designing Social Research
Policy Press: Cambridge 2000 (Acc No. 4713) (Unit II)
5 Wilkinson, T.S. and Bhandarkar , P.L; Methodology and Techniques of Social Research Himalyan Publishing House: Bombay 1986(Acc. No. 4152)
6 Young, P.V.Scientific Social Surveys and Research Prentice Hall Inc: Englewoodcliffs 1966 (Acc. No. 2219)
7 Mukherji, Neela, Participatory Rural Appraisal : Methodology & Applications
Concept Publishing Company: New Delhi 1994 (Acc. No. 4428)
8 Elhance D.N.,Fundamentals of Statistics ,1956 (Acc. No. 3743) (Unit V)
9 Encyclopedia of Social Work in India; Publication Division GOI: NewDelhi 1968 (Acc No. 4419)Vol. II Pg. 348-352 Social Work Research.

MSW-208 :-SOCIAL JUSTICE AND HUMAN RIGHTS IN INDIA

3 hrs duration Max.Marks: 40

UNIT-1: SOCIAL JUSTICE

i. Social Justice : Concepts, Concerns and Issues of Social Justice

ii. Social Justice and its Relationship with Social Legislation

iii. Social Injustice and Mandate for Social Justice

iv Role of Social Worker in Promoting Social Justice.

UNIT-2: HUMAN RIGHTS AND CONSTITUTIONAL RIGHTS

i. Human Rights and Universal Declaration of Human Rightsii
Human Rights and Right to Welfare

iii Fundamental Rights

iv Directive Principles of State Policies

UNIT-3: SOCIAL LEGISLATIONS AND PROTECTION OF CIVIL RIGHTS

i. Persons with Disabilities Act, 1995

ii The Juvenile Justice (Care & Protection of Children) Act, 2000iii
Bonded Labour Abolition Act, 1976

iv Inter- State Migrant Workmen Act, 1979v
Equal Remuneration Act, 1976

vi SC & ST (Prevention of Atrocities) Act , 1989vii
Consumer Protection Act, 1986

Text Books:

1 Saksena, K.P. (Edited); Human Rights- Fifty Years of IndependenceGyan Publishing House: New Delhi 1999 (Acc No. 4659) (Unit II)

2 Friedlander, Walter A. Introduction to Social WelfarePrentice Hall Ltd. New Delhi 1961 (Acc. No. 1453)

Reference Books :

3 Shukla , V.N. Constitution of India

Eastern Book Company : Lucknow 1995 (Acc. No. 4348)

4 Dubois, Brenda and Miley , K.K. Social Work – An Empowering ProfessionAllyn & Bacon Pub: Boston 1992 (Acc. No. 4671) Chapter 6 (Unit I)

5 Plant, Raymond et. Al.;Political Philosophy and Social Welfare Routledge & Kegan Paul: London 1980 (Acc No. 4278) (Unit I & II)

6 Timms , Noel (Edited) ;Social Welfare: Why & How ?

Routledge & Kegan Paul: London 1980 (Acc No. 4276) Part II (Unit I & II).

7 Diwan, Paras and Diwan, Peeyushi. ; Human Rights and the Law Deep & Deep Publications: New Delhi 1996 (Acc. No. 4385) (Unit II)

8 Gangrade, K.D.;Social Legislation in India

Concept Publishing Co.: New Delhi 1978

Encyclopaedia of Social Work in India; Publication Division GOI: New Delhi 1968Vol. II (Acc. No. 4419) Pg. 254-288, 340-348Vol. III (Acc. No.4420) Pg. 236-250, 258-264, 266-273.

SEMESTER III

MSW-309 :-Social Policy and Planning

Unit 1 : Social Policy – Concept, Objective and Scope

i. Principles of Policy Making

ii. Distinction between Social and Economics Policies

iii. Values underlying social policy and planning

iv. Sources of Social Policy: Directive Principles, FundamentalRights and Human Rights

Unit 2 : Policy Formulation

i. Approaches to Social Policy – Sectoral, Cross – Sectoral and Convergence

ii. Role of interest group; the problem of conflict of interest and its solution

iii. Role of Professional Social Workers

iv Social Policy on Education, Environment, Health and HousingUnit 3 : Social Policies and social planning in India

i. Social Planning : Concept, Principles and Scope

ii. Linkages between Social Policy and Planning

iii. Sources of Planning : Constitution, Planning Commission and NationalDevelopment Council

iv. Democratic Decentralization : Panchayati RajText Books

1. India – 2001;Ministry of Information and Broadcasting Publication Division GOI : New Delhi 2001 (Acc. No. 4720)
2. Jacob, K.K. ;Social Policy in India

Hemanshu Publications : Udaipur 1989 (Acc. No. 4285).

Reference Books :

3. Dubois, Bendra ; Miley, K.K. ;Social Work – An Empowering Profession

Allyn. & Bacon : Boston 1992 (Acc No. 4671) Chapter 10 (Unit I)

4. Culpitt, Ian ;Social Policy & Risk

Sage Publication Ltd. London 1999 (Acc No. 4697) (Unit I)

5. Bulmer, Martin (Edited);Social Policy Research Macmillan Ltd., London 1978 (Acc No. 3333) (Unit I)
6. Bean, Philip (Edited); Approaches to Welfare

Routledge & Kegan Paul : London 1983 (Acc No. 4275)

7. Madan, G.R. ;Welfare State and Problems of Democratic PlanningAllied Publications : Bombay 1972 (Acc. No. 40) (Unit III)
8. Kulkarni, P.D. ;Social Policy in India ASSWI : Madras 1979 (Acc. No. MSW-56)
9. Encyclopedia of Social Work in India Publication Division GOI : New Delhi : 1968 Vol. II (Acc. No. 4419) Pg. 273-294

MSW-310 :-SOCIAL DEVELOPMENT IN INDIA

3 hrs duration Max. Marks: 40

Unit 1 : Development – A Conceptual Frame Work & Current Debates onDevelopment

i. Development Indicators
ii. Social Development and Social Work
iii. Theories, Strategies and Ideologies of Development, Marxian andDependency Models and Gandhian Model.

Unit 2 : Contemporary Social Movements and Social Development in India

i. Social Capital, Civil Society and Social Development
ii. Technology, Displacement and Development
iii. Role of NGOs in Social Development
iv. Theories of Social Development: Sanskritisation, Westernization andModernization
v. Historical and Social Context of Development in India in Pre-IndependencePhase & Post-Independence Phase-
vi. Neo-Political Economy and Social Development

Unit 3 : Sustainable Development

i. Sustainable Development : Issues and Perspectives
ii. Global Efforts for Human Development
iii. Globalization and Sustainability
iv. Problems of Sustainable Social Development in India

Text Books

1. Desai, Vardana and Robert B Potter (ed);The Companion to DevelopmentStudies Arnold & Oxford University Press: London 2002 (Acc No. 4751)
2. Srivastave, S.P. (ed.); The Development Debate Rawat Publications : Jaipur 1998 (Acc. No. 4603)

Reference Books :

3. Lechner, Frank J. and John Boli (eds); The Globalization Reader 2nd EditionBlackwell Publicating : Malden 2004 (Acc No. 4852)

4. Jogdand, P.G. and S.M. Michel (eds); Globalization and Social MovementsRawat Publication : Jaipur 2003 (Acc No. 4853)
5. Midgley, James; Social Development : The Development Perspectivein Social Welfare, Sage Publication : London 1995
6. Pimpley, P.N., K.P. Singh and A. Mahajan Social Development – Processesand Consequences ,Rawat Publications : Jaipur 1989 (Acc No. 4109).
7. Srivastava, S.K. and A.L. Srivastave; Social Movements for DevelopmentChaugh Publication : Allahabad 1988 (Acc No. 3768).
8. Hillorst, Dorotha ;The Real World of NGOs

Zed Books : London 2003 (Acc. No. 4857)

9. Hans Van Ginkel (ed.);Human Development and Environment Rawat Publication: Jaipur & U.N. University 2003 (Acc. No. 4817)
10. Choudhary,, D. Paul ;Profile of Social Welfare and Development in India

M.N. Pub. & Distributors : New Delhi 1985 (Acc. No. 4326)

11. Bedi, M.S. ;Social Development & Social Work Himanshu Publications : Udaipur 1994 (Acc. No. 4287)
12. Bartoli, Henri ;Rethinking Development

Rawat Publication : Jaipur 2002 (Acc No. 4768)

13. Dalal, K.L. (Edited); Human Development

Har Anand Publication : New Delhi 1991 (Acc No. 4387)

14. Iyer, K. Gopal ;Sustainable Development

Vikas Publishing House : New Delhi 1996 (Acc No. 4421)

15. UNDP, Human Development Report –Oxford University Press: New Delhi2003

MSW - 311 DEVELOPMENT AND WELFARE SERVICES

3 : hrs duration Max. Marks : 40

Note : The question paper will be divided into three parts - ABC

Unit 1 : Social Welfare Administration

i. Social Welfare Administration : Meaning, Concept & Principles
ii. Functions of Social Welfare Administration
iii. Organization : Meaning, Nature and Design
iv. Decision Making : Coordination

UNIT – 2: Welfare Program in India

- Concept and need of family welfare program..
- Meaning and historical development of the family planning in India.

- family welfare program and Immunization.

UNIT-3 : Family Welfare Program in different regions

- Impact of Family Planning Program and Population Control In developed & developing countries,
- causes of slow progress of family planning programs in developing countries ,case study of India & China.
- Family welfare program in Rajasthan

Text Books :

1. Chowdhary, D. Paul ;Social Welfare Administration Atma Ram & Sons :Delhi 1962(Acc No. 2318)
2. Goel S.L., Jain, R.K. ;Social Welfare Administration Vol. 2,Deep & DeepPublications : New Delhi 1998 (Acc No. 4335)

Reference Books :

3. Bean, Philip (Edited); Approaches to Welfare ,Routledge & Kegan Paul :London 1983 (Acc No. 4275) (Unit I)
4. Khan, R.L. ;Social Administration in India ,Mohira Capital Publishers :Chandigarh 1970 (Acc No. 1137)
5. Prasad, Rajeswar; Social Administration .Shree Publishing House : Delhi1982 (Acc. No. 3128) (Unit I & IV)
6. Fernando,Fr. Emmanuel S. Project From Problems St. Xaviers Church :Mumbai 1998
7. Hart, Roderick P. et.al.; Public Communications ,Harper & Row Publishers :New York 1975 (Acc No. 3002) (Unit V)
8. Dale, Reidar ; Evaluation Frame Works for Development Programmes andProjects Sage Publications : New York 198 (Unit III)
9. Encyclopaedia of Social Work in India Publication Division GOI : New Delhi 1968;Vol. I (Acc No. 4418) Pg. 110-118 Communication ,Vol. III(Acc. No. 4419) Pg. 210-235 Social Administration

MSW-312;-SOCIAL RESEARCH PRACTICE: PROJECT FORMULATION &EVALUATION

3 hrs duration Max. Marks: 40

Unit 1. : Problem Selection and Project Proposal, Strategies

i. problem Selection; Formulation, Indentifications

ii. Project Proposal – Approaches of Problem Solving & Identification of Need

iii. Techniques to Develop Community Programme

iv. Check List

Unit 2 : Evaluation

i. Basic Aims of Evaluation

ii. Project Evaluation and Role of Project Evaluation

iii. Monitoring and Evaluation –Mid-Terms & Ex-post Evaluation

iv. Hierarchy of Objectives

v. Characteristics of Good Appraisal System

Unit 3 : Field Practicum & Computer Application

i. Model Project Proposals

ii. Model Society Proposal

iii. Computer : Types and Uses

iv. Social work Research and ComputerV
Social work Research and Internet Text Books

:

1. Fernando, Fr. Emmanuel S. Project From Problems St. Xaviers Church,Mumbai - 1998

2. Dale, ReidarEvaluation Frame Works for Development Programmes andProjects SagePublications Ltd. : New Delhi – 1998

Reference Books :

3. Eihance, D.N. Fundamentals of Statistics 1956 (Acc. No. 3743) (Unit I)

4. Chandra, Rajan et.al.;Modern Computer Architecture ,GalghotiaPublications Ltd., New Delhi 1995

5. Rajarama, V. ;Fundamentals of Computer, Prentice – Hall : New Delhi 1994(Acc No. 4370) Chapter 1 (Unit III)

6. Sussams, John. E. ;How to Write Effective Reports, Gower PublishingCompany Ltd., Hants 1963 (Acc No. 3255)

7. Saxen, T.P. Chandra A. ;Style Manual Papers in Social Sciences Metropolitan Book Co. Pvt. Ltd. New Delhi 1997 (Acc. No. 2590) (Unit IV)

MSW:313 Women & Social work

3 : hrs duration Max. Marks : 40

UNIT - I

- Women Empowerment and its various Dimensions i.e. social, educational,economic and political.
- Women Autonomy and Population Growth,
- Effects of Women Education and Nutrition on their reproductive health..

UNIT - 2

- National Commission of women: its role and utility.
- Rajasthan State Women Commission, Domestic Violence Protection Law-2005;Policies and programmes related to Women Welfare
- Pre-natal Diagnostic Technique (Regulation and Prevention of Misuse) Act-1994.
- Women's human rights: Problems and challenges faced by Indian women.
- Women Empowerment, Violence against Women, Different Types of Violence,
- Effect of Violence on mental and Physical Health of Women.

UNIT - 3

- Women's health & safe mother hood in India, especially in rural areas.
- Gender Issues in Population Studies, Fertility behavior and Sex Imbalances inIndia and Its Consequences.
- Son Preference Attitude in different communities and groups.
- Health Related Programs of the women at State and National Level.
- Reproductive rights; its objectives and base of action.
- Reproductive Health Issues, Reproductive and Child Health in India.

Books Recommended:

R. Ramasubbam, S. J. Jejeebhoy - "Women's Reproductive Health in India",Rawat Publications.
J. Kynch and A. Sen -"Indian Women, Well Being and Survival", Cambridge Journal of Economics,
Ram Ahuja - "Violence Against Women", Rawat Publication.
N. Ravichandran –"Population, Reproductive Health and Development" ,New Centuries Publications.

SEMESTER IV

MSW-414:- **Statistical Techniques in Social Work.**

3 hrs duration Max. Marks : 40

UNIT - 1

- Descriptive Statistics - Classification and Tabulation of Data, Frequency distribution, Histograms and Frequency polygrams, Diagrammatic and Graphic representation of Data.
- Statement of hypothesis - Null Hypothesis and Alternative hypothesis.
- Measures of central tendency: Arithmetic means, mode, Median - Proprieties, Merits and Limitations of each measure.
- Measures of dispersion: Range, Standard deviation, Coefficient of variation, Skew ness and Kurtosis.

UNIT - 2

- Correlation: meaning of Correlation, Karl Pearson's Coefficient Correlation, Coefficient of Correlation and its interpretation, Rank Correlation
- Regression Analysis: Definition of Regression, Linear and Multiple Regressionequations, Prediction and Accuracy of Predictions.

UNIT - 3

- Large Sample tests for Proportions; difference between proportions and means.
- Chi -Square test and goodness of fit; general features of Chi Square . YatesCorrelation.
- Analysis of Variance: – one- way and two- way classification. Utility andcharacteristics of ANOVA.

MSW-415:-Human Resource **& Quality of life**

3 : hrs duration Max. Marks : 40

UNIT – 1

- Relationship between social work & Population growth
- Population Growth and Quality of Life
- Quality life and human resource development.
- Family size & Physical, mental and emotional development of child.
- Principles of Ethics and its importance. Ethics in the society.

UNIT – 2

- Gandhian Philosophy of population & Social Work.
- Qualitative aspects of population; Human values and Environmental protection
- Environmental values and social responsibility in context of population growthand social work.

UNIT - 3

- Adverse Effects of growing Population on human quality of life.
- Quality of Life and Societal Notions.
- **Family size and Quality of Life; Health risk of early, late, too-closelyspaced pregnancies.**
- Role of social worker in improving human quality of life.

MSW-416:- **Reproductive Health**

3 : hrs duration Max. Marks : 40

UNIT - 1

- Reproductive health and Women's Reproductive Rights. its objectives and baseof action.
- Reproductive Health Issues, Reproductive and Child Health in India,
- Reproductive Health Programme management Strategies; Targeting the peoplein need, unmet need approach and health seeking behaviour.

UNIT - 2

- Health Related Programs at State and National Level specially for Women and children Nutrition with reference to Quality of Life.
- Awareness strategies: Enhancing knowledge, Information and education; enhancing access of Health care, Education for young generation.

UNIT - 3

- HIV/AIDS and Sexually Transmitted Diseases (STD's)
- Monitoring and care of HIV/AIDS patients, Ethical partner counseling , Medical and social aspects of reproductive tract infections (RTIs) Sexually transmitted diseases (STDs) and Human Immune Deficiency Virus(HIV)/ Acquired Immune Deficiency Syndrome(AIDS).
- Importance of Guidance and Counseling,
- Models of Guidance and Counseling

MSW-417: RURAL – URBAN COMMUNITY DEVELOPMENT

3 hrs duration **Max. Marks: 40**

UNIT-1: COMMUNITY DEVELOPMENT

i. Development – An Overview

ii Concept ,Goals and Ideology of Community Development

iii. Process and Principles of Community Development iv Essential Characteristics of Community Development

UNIT-2: RURAL COMMUNITY DEVELOPMENT PROGRAMMES

i. Various Approaches to Rural Development Programmes in India.

ii Health Care in Rural India

iii People's Participation &Panchayati Raj System

iv. Role of NGOs in Rural Development

UNIT-3: URBAN COMMUNITY DEVELOPMENT PROGRAMMES

i. Urbanization and Urban Development Policy in Indiaii Urban Community Development Programmes.

iii. Urban Basic Services

iv Role of NGO's in Urban Development

MSW- 418 : - Dissertation **Max. Marks : 50**

The Dissertation/Field Study/Case Study/Survey Report will be undertaken by the candidates under the supervision of recognized research supervisor of the University. The study envisages collection of primary data employingappropriate research methodology, tools, techniques as well

as evaluation of various experimental designs. Proper data analysis, critical interpretation and emerging trends will be highlighted.

The subject chosen for the Dissertation/Field Study/Case Study/Survey Report should be of relevance to social welfare issue and should preferably take an interdisciplinary view. The candidates may formulate any research problem based on their training, specialization and skills in consultation with their Supervisors. The Dissertation will be evaluated by internal as well as by external examiner also.

PROGRAMME PROJECT REPORT

(includes curriculum and syllabus)

M.Sc. Zoology

Submitted

To

The UGC – DEB

(ODL) - MODE

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,

Raja Bhoj Marg Kolar Road, BHOPAL (M.P.)

CONTENTS

Madhya Pradesh Bhoj Open University, Bhopal

PROGRAMME PROJECT REPORT

Name of the Programme: M.Sc. Zoology

Introduction :

M.Sc. Zoology in Open and Distance Learning (ODL) is a postgraduate program that provides students with the opportunity to pursue their studies in zoology, but with the flexibility of studying at their own pace and in their own time. ODL programs are designed for students who are unable to attend regular classroom-based programs due to various commitments.

The M.Sc. Zoology program in ODL covers a wide range of topics such as animal behavior, ecology, evolutionary biology, genetics, and biogeography. The program is designed to provide students with a strong foundation in theoretical and applied zoology, which can be applied to various fields such as conservation, agriculture, and biomedical research.

The program typically lasts for two years and is delivered through online platforms, study materials, and periodic contact sessions with instructors. This provides students with the flexibility to learn at their own pace, and they can interact with instructors and fellow students through online platforms and attend periodic contact sessions for clarification of doubts and guidance.

The M.Sc. Zoology program in ODL is ideal for working professionals, individuals residing in remote areas, or those who have other commitments that make it difficult to attend regular classroom-based programs. Graduates of this program can pursue careers as zoologists, researchers, educators, and consultants in various industries.

Overall, an M.Sc. Zoology program in ODL provides students with the opportunity to develop their zoology skills, deepen their knowledge of zoology concepts, and prepare for a wide range of careers in various industries while offering the flexibility to study from any location.

(i) (a) Programme's Mission: The mission of an M.Sc. Zoology program is to provide students with a comprehensive understanding of the biological principles, concepts, and theories that underpin the study of animal life. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research and contribute to the advancement of the field of zoology.

The program's curriculum is designed to cover a broad range of topics, including animal behavior, ecology, evolution, genetics, biogeography, and conservation biology. Through coursework, research projects, and practical experiences, students develop a deep understanding of animal biology, the ecological and evolutionary processes that shape animal populations and communities, and the conservation of animal species and their habitats.

The M.Sc. Zoology program also aims to develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively. Graduates of the program are prepared for careers in academic research, wildlife conservation, environmental management, and many other fields related to animal biology and ecology.

Ultimately, the mission of an M.Sc. Zoology program is to foster a deeper understanding and appreciation of the natural world, and to prepare students to make meaningful contributions to the scientific community and society as a whole.

(b) Objectives:

The objective of an M.Sc. Zoology program is to provide students with an in-depth understanding of the biology and behavior of animals and their interaction with their environment. The program aims to equip students with the necessary knowledge, skills, and abilities to undertake research, conservation, and management of animal populations and their habitats.

The program's objectives are as follows:

1. To provide students with a strong foundation in the fundamental concepts and theories of zoology, including animal behavior, ecology, evolution, genetics, biogeography, and conservation biology.
2. To develop students' skills in conducting research in zoology, including designing experiments, collecting and analyzing data, and presenting research findings.
3. To provide students with practical experiences through field trips, laboratory work, and research projects to develop their skills in collecting and analyzing data, conducting experiments, and understanding the practical applications of zoological concepts.
4. To develop students' critical thinking and problem-solving skills, as well as their ability to communicate scientific ideas effectively.

5. To prepare students for careers in academia, research institutions, conservation organizations, zoos, and other industries related to zoology.

Ultimately, the objective of an M.Sc. Zoology program is to provide students with a strong foundation in the theoretical and practical aspects of zoology, which will enable them to contribute to the advancement of the field of zoology and to apply their knowledge to the conservation and management of animal populations and their habitats.

(ii) Relevance of the Programme with HEI's Mission and Goals:

The M.Sc. Zoology program in Open and Distance Learning (ODL) is highly relevant to the mission and goals of higher education institutions (HEIs) that offer distance education. Here are some ways in which the M.Sc. Zoology program in ODL is aligned with the mission and goals of HEIs:

- Providing access to education: The M.Sc. Zoology program in ODL provides access to higher education for students who may not have the opportunity to attend a traditional brick-and-mortar university. This aligns with the mission of many HEIs to provide education to a diverse student body and to ensure that education is accessible to all.
- Offering flexibility: The M.Sc. Zoology program in ODL is designed to be flexible, allowing students to study at their own pace and in their own time. This aligns with the goal of many HEIs to provide flexible education options that accommodate the needs of non-traditional students, such as working professionals or individuals with family obligations.
- Promoting lifelong learning: The M.Sc. Zoology program in ODL promotes lifelong learning by providing students with opportunities to continue their education and professional development, even after they have completed their degree. This aligns with the mission of many HEIs to promote lifelong learning and to provide education that prepares students for the challenges of the future.
- Fostering critical thinking and problem-solving skills: The M.Sc. Zoology program in ODL is designed to develop students' critical thinking and problem-solving skills, which are essential for success in any field. These skills enable students to analyze complex problems, evaluate evidence, and develop creative solutions to real-world challenges.

- Contributing to the greater good: The M.Sc. Zoology program in ODL prepares students for careers that can make a significant impact on society by promoting the conservation and management of animal populations and their habitats. By providing students with the necessary knowledge and skills, the program is contributing to the greater good and helping to create a more sustainable world.

Overall, the M.Sc. Zoology program in ODL is highly relevant to the mission and goals of HEIs. It provides access to education, offers flexibility, promotes lifelong learning, fosters critical thinking and problem-solving skills, and contributes to the greater good of society.

(iii) Nature of prospective target group of learners:

The prospective target group of learners for an M.Sc. Zoology program can include a diverse range of individuals who are interested in pursuing advanced studies in zoology. Some of the potential target groups of learners for this program are:

- Students with a background in biological sciences: This group of learners may have completed their undergraduate degree in biological sciences or a related field, and are interested in furthering their knowledge in the area of zoology.
- Working professionals in the field of zoology: This group of learners may already be working in the field of zoology, and are interested in pursuing advanced studies to enhance their knowledge and skills.
- Individuals interested in wildlife conservation: This group of learners may have a keen interest in wildlife conservation and are looking to gain a deeper understanding of zoology and its applications in this area.
- Aspiring researchers: This group of learners may be interested in pursuing a career in research, and are looking for a program that will provide them with the necessary knowledge and skills to pursue advanced research in the field of zoology.
- Educators: This group of learners may be educators who are interested in enhancing their knowledge in zoology and related fields, and are looking for a program that will help them better prepare their students for careers in zoology.

Overall, the prospective target group of learners for an M.Sc. Zoology program can be diverse and include individuals from various educational and professional backgrounds who are interested in pursuing advanced studies in zoology.

(iv) Appropriateness of programme to be conducted in the Open and Distance Learning mode to acquire specific skills and competence:

The M.Sc. Zoology program can be appropriately conducted in the Open and Distance Learning (ODL) mode to acquire specific skills and competence. Here are some reasons why:

1. Flexibility: The ODL mode provides flexibility in terms of time, pace, and place of learning, which is especially important for learners who are already working or have other commitments. This mode allows learners to design their own study schedules and access course materials at their convenience, which can help them to balance their work, family, and educational commitments.
2. Access to learning resources: ODL mode can provide access to a wide range of learning resources, including digital textbooks, audio and video lectures, interactive simulations, and virtual laboratories. This mode allows learners to access these resources from anywhere, which can help them to deepen their understanding of key concepts and develop specific skills and competencies.
3. Personalized learning: ODL mode can provide personalized learning experiences to learners by using adaptive learning technologies, providing individual feedback, and offering personalized tutoring. This mode can help learners to focus on their specific needs and interests and acquire the skills and competence they need to succeed in their chosen field.
4. Cost-effective: ODL mode can be a cost-effective option for learners who are unable to attend traditional, on-campus programs. This mode can reduce the cost of tuition, accommodation, and transportation, making it more accessible to learners from diverse socioeconomic backgrounds.

Overall, the M.Sc. Zoology program can be appropriately conducted in the ODL mode, providing learners with the opportunity to acquire specific skills and competence in a flexible, accessible, personalized, and cost-effective manner.

(v) Instructional Design: The M.Sc. programme is a two-year degree programme of 72 credits. The course material for the programme has been developed in-house with contributions from seasoned academicians as well. The instructional design comprises all learning activities i.e., reading and

comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments.

Year	Papers	Marks		
		Term End Exams	Continuous Evaluation/IA	Total
First Year	Course 1: Animal forms and functions, andEcobiology	85	15	100
	Course 2:Physiology & Biological Chemistry	85	15	100
	Course 3: Parasitology & Animal Behaviour	85	15	100
	Course 4: Cytogenetics & DevelopmentBiology	85	15	100
	Practical - I : Based on Course I & II	75		75
	Practical - II : Based on Course III & IV	75		75
	Total marks	**490**	**60**	**550**
Second Year	Course 5: Aquaculture and Wildlife	85	15	100
	Course 6: Environmental Pollution &Ecotoxicology	85	15	100
	Course 7:Sericulture & Apiculture	85	15	100
	Course 8: Molecular Genetics and Biotechnology	85	15	100
	Practical - I: Based on Course V & VI	75		75
	Practical - II :Based on Course VII & VIII	75		75
	Total marks	**490**	**60**	**550**
Total Marks - I Year & II Year		**960**	**120**	**1100**

(a)Detailed Syllabus of the Programme: Given as Appendix-01

(b) Duration of the Programme: The Duration of the Programme is two years.

(c) Faculty and Support Staff Requirement: At present, there are three faculty members in the Department. The Department have all support staff for its the smooth functioning.

(d) Instructional Delivery Mechanism:

The instructional delivery mechanisms of the program should be designed to cater to the diverse needs of the learners, provide flexibility, and ensure effective learning outcomes. The program should also provide adequate support services such as academic counselling, technical support, and mentorship to ensure that learners receive the necessary guidance and assistance throughout the program.

As the University functions in the Open and Distance Learning mode, the programmes that we offer are designed to meet the varied requirements of the distant learner. Keeping this in view, the course material developed by the Department is learner friendly. Each course is divided into four to five blocks, which are further divided into units. Each Block consists of three to four units. This number has been determined taking into consideration the learning capabilities of our learners. The structure of the unit is in line with the guidelines laid down by the DEB-UGC, the apex regulatory body of Open and Distance Learning. The content is kept simple and lucid and follows the self-instructional pattern. Each lesson includes a number of self-assessment questions along with hint answers so that the students are able to track their progress as they proceed with the lesson. At the end of each unit, a list of other relevant books is also provided. Besides providing quality study material to our learners, the Department, following the ODL pattern, has defined its programmes in the terms of credits. In the ODL system, one credit is equivalent to 30 study hours i.e. the study input required for completion of the programme. Normally the M.Sc. programme is a 72-credit programme. This comprises all learning activities ie., reading and comprehending the SLM, availing audio-visual aids to enhance knowledge, attending counselling sessions and preparing assignments. Thus, in the M.Sc. programme, a learner is expected to put in 2160 study hours to complete the programme in two years' time.

(vi) Procedure for admission, curriculum transaction and evaluation:

Admission Process :

Notification issued by the University in Regional and National Newspapers and in the official website. Admission process is online through the MPOnline Portal. Payment of fee through online (various options like net banking etc.). Submission of the printout of the application by the candidate to concern study centre along with original documents for eligibility, date of birth etc., and along with fee paid receipt. After the Verification of applications- for fulfillment of eligibility criteria (marks cards)

documents, fee paid details. Approval of the admission and issue of self-learning material (Study Materials) to the students.

Contact Programmes :

The personal contact programme in every course shall extend over a period of 13 working days in each semester and is usually conducted at the beginning of the session. The students are expected to come prepared in the class in order to discuss their problems meaningfully. 75% attendance in the personal contact programme is mandatory.

Eligibility: B.Sc. with Zoology

Fee Structure: M.Sc. Previous & M.Sc. Final:

Rs. 9000: Per Year

Evaluation norms: A learner will be evaluated on the basis of Assignments and term-end examination. Assignments carry 30% weightage whereas the term end examination carry 70% weightage.

Evaluation system:

- Students shall have a minimum of 50% of total marks of the University examinations in each Course. The overall passing minimum is 50% both in aggregate of Continuous Internal Assessment and External Examination in each Course.
- Every course shall have two components of assessment namely,
  - Continuous Internal Assessment "CIA": This assessment will be carried out throughout the semester as per the Academic Schedule.
  - End Semester Examination "ESE": This assessment will be carried out at the end of the Semester as per the Academic Schedule.

Continuous Internal Assessment "CIA":

- Continuous Internal Assessment for each Course shall be by means of Written Tests/ Assignments, and Class Tests for a total mark of 30.
- Continuous Internal Assessment for each Course shall be the responsibility of theconcerned

Course Faculty.

- The valued answer papers/assignments shall be given to the students after the valuation is completed and they be asked to check and satisfy themselves about the marks they scored.
- All records in respect of Continuous Internal Assessments shall be in the safe custody of the PI for at least one year after the assessment.

Theory course assessment weightages:

The general guidelines for the assessment of Theory Courses, Department Electivesand Non – Department Electives shall be done on a continuous basis as given in Table.

Table : Weightage for Assessment

S.No.	Assessment	Weightage	Duration
1.	First Periodical Assessment	10%	2 periods
2.	Second Periodical Assessment	10%	2 Periods
3.	Practical/Project/ Lab	5%	--
4.	End Semester Exam	70%	2 to 3 hours

Grading System

Based on the student's performance in each semester, grade is awarded with a final letter grade at the end of the exam evaluation of each Course. The letter grades and the corresponding grade points are as follows.

Table 3: Grading system

Range of Marks	Letter Grade	Grade Points	Remarks
90 – 100	S	10	Outstanding
80-89	A	09	Excellent
70-79	B	08	Very Good
60-69	C	07	Good

50-59	D	06	Average
40-49	E	05	Pass
<40	U	00	To Reappear for End-Semester Examination

GPA and CGPA

Grade Point Average (GPA) is the ratio of the sum of the product of the number of credits Ci of course "i "and the grade points Pi earned for that course taken over all courses "i" registered and successfully completed by the student to the sum of Ci for all "i". That is,

$$GPA = \frac{\sum_1^n \; C_i \; P_i}{\sum_1^n \; C_i}$$

Cumulative Grade Point Average (CGPA) will be calculated in a similar manner, in any semester, considering all the courses enrolled from the first semester onwards. The Grade card will not include the computation of GPA and CGPA for courses with letter grade "U" until those grades are converted to the regular grades.

Grade Sheet

Based on the performance, each student is awarded a final letter grade at the end of the semester in each course. The letter grades and corresponding grade points are given in Table 3. A student is considered to have completed a course successfully and earned credits if he/she secures a letter grade other than U in that course. After results are declared, grade sheet will be issued to each student which will contain the following details:

- Program and discipline for which the student has enrolled.
- Semester of registration.
- The course code, name of the course, category of course and the credits foreach course registered in that semester
- The letter grade obtained in each course
- Semester Grade Point Average (GPA)

- The total number of credits earned by the student up to the end of thatsemester in each of the course categories.
- The Cumulative Grade Point Average (CGPA) of all the courses taken fromthe first semester.
- Credits earned under Non – CGPA courses.
- Additional credits earned for the respective UG degree or respective UGdegree with Minor specialization.

Class/Division

Classification is based on as follows: CGPA ≥

8.0: First Class with Distinction

6.5 ≤ CGPA <8.0: First Class

5.0 ≤ CGPA <6.5: Second Class

(i) Further, the award of 'First class with distinction' is subject to the candidate becoming eligible for the award of the degree, having passed the examination in all the courses in his/her first appearance with effect from II semester and within the minimum duration of the programme.

(ii) The award of 'First Class' is further subject to the candidate becoming eligible for the award of the degree, having passed the examination in all thecourses within 5 years.

(iii) The period of authorized break in study will not be counted for the purpose of the above classification.

Eligibility For The Award of Degree

A student will be declared to be eligible for the award of the M.Sc. degree ifhe/she has Registered and successfully obtained credit for all the core courses:

- Successfully acquired the credits in the different categories as specified in the curriculum corresponding to the discipline of his/her study within the stipulatedtime:
- Has no dues to all sections of the institute including hostels and has no disciplinary action pending against him/her.

- The award of the degree must be recommended by the Academic Counciland approved by the Board of Management of the university.

Re-View Of Answer Scripts / Single Valuation

If any student feels aggrieved on the final outcome of the assessment in any course, the student shall apply to the Controller of Examinations, along with the prescribed fee, for the review of Tern End examination answer script, within the stipulated time after the announcement of the results of the examinations. The Controller of Examinations shall facilitate the review of the answer script jointly to be carried outby the student and the faculty detailed for this purpose. If any discrepancy is noticed during review the same shall be rectified and the originally awarded grade accordingly amended.

(vii) Requirement of the laboratory support and library resources:

Computer Lab: The University has most modern high-tech Computer Lab with 24 hrs. Internet facility for studying and R&D activities. The state-of-the-art facility features hardware & software that is geared to specific academic programmes.

Research Lab: University equipped with round the clock available Hi-tech research Lab. which includes latest configured systems with Hi-speed internet facility loaded with latest software for research purpose.

Library: The University library is the hub of knowledge with more than 105832 books, Online Journals/Magazines, Back Volumes:, Thesis & Dissertations:, News Papers: 12, Book Bank: 25850 are conveniently accessible for the students and staff of MPBOU. Library includes Main reading area, separate reading area and reference section.

The MPBOU system consists of a Central Library and Departmental Libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to use the Library facilities enrolling membership.

Internet Facilities: One Gbps – Lease Line Link are available at the university. University is fully networked with a campus wide network interconnecting all departments. Campus is fully Wi-

Fi with high Speed internet connection available round-d-clock.

MS TEAMS Platform: The University has acquired the Zoom platform license and has gone 100% virtual in terms of delivering the regular classes during the COVID lockdown. This has given enough experience for the faculty and expertise to handle the platform for online learning. More than 150 guest lecturers have been organised in the brief period of three weeks inviting industry experts. The MPBOU team is now digitally empowered to conduct OL classes on this virtual platform on a regular basis which shall make the learning process very effective.

LMS: The Institute is using MOODLE and Microsoft Teams for Online teaching and to conduct test and Assignments

(Viii) Cost estimate of the Programme and the provisions:

The M.Sc. programme in English has been prepared in-house. The internal faculty has made contribution through units. The Department has utilized the acumen and expertise of seasoned academicians in the development of the course material. The expenses incurred in outsourcing units is as follows:

Cost Estimates for Development of the Programme:

Programme	**Programme Development**	**Delivery**	**Total**
M.Sc. Zoology	5,00000/-	3,00000/-	8,00000/-

(ix) Quality Assurance Mechanism and expected programme outcomes:

Quality assurance mechanisms and expected program outcomes are crucial components of any educational program, including M.Sc. Zoology. Here are some quality assurance mechanisms and expected program outcomes of M.Sc. Zoology:

Quality Assurance Mechanisms:

- Regular review and revision of the curriculum to ensure that it remains current, relevant, and aligned with industry standards.
- Regular monitoring of teaching methodologies and assessment procedures to ensure that they are effective in achieving the program's learning outcomes.
- Regular evaluation of faculty members to ensure that they are qualified, experienced, and effective in delivering high-quality instruction.

- Periodic external reviews by experts in the field to provide feedback on the quality and relevance of the program.
- Implementation of a feedback system that enables students to provide constructive feedback on the quality of the program and the teaching methods used.

Expected Program Outcomes:

- Deep understanding of core concepts in zoology, including anatomy, physiology, behavior, ecology, and evolution.
- Advanced knowledge and skills in laboratory techniques, data analysis, and research methodologies related to zoology.
- Ability to design and conduct independent research projects in the field of zoology, analyze and interpret data, and communicate research findings effectively.
- Ability to think critically and solve complex problems related to zoology, using both theoretical and practical approaches.
- Effective communication skills, both written and verbal, to effectively present scientific information to diverse audiences.

By implementing these quality assurance mechanisms and ensuring that the program achieves these expected outcomes, M.Sc. Zoology can provide high-quality education and prepare learners for successful careers in various fields related to zoology.

Detailed Syllabi of M.Sc. Zoology **Annexure 1**

First Year

Course 1 : Animal Forms & Functions & EcobiologyA -

Animal Forms & Functions

Unit 1: **Organization of coelom**: Acoelomate, Pseudocoelomate, Coelomate

Unit 2: Origin of metazoa

Unit 3: Locomotion: Flagella and ciliary movements in protozoa, Hyddrostatic movement in Annelida and Echinodermata

Unit 4: Respiration : organs of respiration- gills, lungs and trachea

Unit5: Excretion: Organs of exretion – coelom, coelomoducts, Nephridia and malphigian tubules, Mechanism of excretion.

Unit 6: Nervous system: Primitive nervous system – coelenterata and echinodermata; Advanced nervous system –Annelida, Arthropoda and molluska

Unit 7: Origin of chordata

Unit 8: Concepts of Protochordata, interrelationships of protochordata

Unit 9: Vertebrate integument and its derivatives: Structure and functions of skin. Skin derivatives scales, horns, claws, nails, hoofs, feathers and hairs

Unit 10: General account of Brain in vertebrates.

Unit 11: Evolution of heart and aortic arches in vertebrates

Unit 12: Comparative account of vertebral column, limbs and girdles

Unit13: Evolution of urinogenital system in vertebrates.

B – ECOBIOLOGY

Unit 1: Introduction: History, scope, application of ecology, components, structure, trophic levels, food-chain and food webs, ecological pyramids.

Unit 2: Habitatat and ecological niche: concepts, types, Gause principle, Intra-specific and Inter- specific competition, species co-existence.

Unit 3: Energetics: Solar radiation, Laws of thermodynamics applicable to energetics, energy flow patterns, energy flow models, methods to study energy flow, Biomass and productivity, measurement and factors affecting productivity.

Unit 4.Population interactions: Mutualism, evolution of Mutualism,Communalism, symbiosis, predator and prey, parasitism, parasite and host relationships.

Unit 5. Population regulation: Extrinsic and intrinsic mechanisms, case studies in

population dynamics (two examples), Density dependent and density independent causes for population change.

Unit 6: Ecological adaptations: Different types of adaptations. Detailed account on volant, cursorial and cave adaptations.

Unit 7: Population ecology:

7.1: Natality: General concept, Human birth rate in India, Fertility: factors determining fertility, fertility trends in developing countries, causes of low fertility rate in developed countries, theories on fertility.

7.2. **Mortality**: General concepts, Human Mortality rate in India, factors determining reduction in mortality, infant mortality and child mortality.

7.3: Population growth patterns

Unit 8: Population Control Measures and Family welfare:

: Family planning: Natural Methods, Contraceptives: Intrauterine devices, Oral contraceptives, Non oral hormonal contraceptives, Vaginal rings, post-coital contraception, Male and female sterilization, Pregnancy termination. Efficiency of implementation of family planning in India.

: Family welfare: Age of marriage, duration of married life, spacing of children, pregnancy and abortion, child woman ratio, family size, sex roles and division of labour, parent child relationship, male and female sterility and treatment .

Unit 9: Communities: Concepts, Structure and organization, main types of communities (Marine and fresh water) biotypes, ecological dominance, ecotone and edge effect.. Primary and secondary ecological succession.

Course 2: PHYSIOLOGY & BIOLOGICAL CHEMISTRYA –
PHYSIOLOGY

Unit1: Feeding and Nutrition: Feeding habits in animals, hunger and appetite, Digestion and mechanisms of absorption of dietary carbohydrates, proteins and lipids. Regulatory mechanisms of digestion, absorption, Gastrointestinal disorders such as peptic ulcer and diarrhea.

Unit 2: Circulation: Types of hearts, body fluids (blood and lymph), Physiology and patterns of circulation, regulatory mechanisms of circulation,

Unit 3: Respiration: Types, Chemistry and functions of respiratory pigments, Major trends in aquatic and terrestrial respiration, Transport of oxygen and carbon dioxide, regulatory mechanisms of respiration,

Unit 4: Osmoregulation and excretion: Osmoregulation in aquatic and terrestrial animals. General patterns of nitrogen excretion in animals, Physiology of urine formation in mammals.

Unit 5: Muscle physiology: Types of muscles, Structure and functions of striated and non- striated muscles, Ultra structure and molecular mechanisms of muscle contraction, Structural and regulatory proteins of skeletal muscles, Muscle atrophy and dystrophy.

Unit 6: Thermoregulation: Physiological effects of temperature change, cryophily and

thermophily, mechanisms of heat transfer between body and environment- Temperature compensation in poikilotherms, Thermoregulation in homeotherms.

Unit 7: Neurophysiology: Neuron- diversity and structure; conduction of Nerve impulse, Synapses and synaptic transmission, Neurotransmitters: physiology of cholenergic and adrenergic synapses, Reflex mechanisms, Functions of CNS and autonomic nervous system,

B. BIOLOGICAL CHEMISTRY

Unit1: Introduction, scope, chemical bonds- covalent, coordinate, ionic and hydrogen bonds. Vander-waal's forces, hydrophobic interactions, normality and molarity of solutions.

Unit 2: Nucleic acids: Properties, chemistry, synthesis and metabolism.

Unit 3: Carbohydrates :

3.1: Properties, classification and chemistry.

3.2. Metabolism: Embden-Meyer pathway, Glycolysis, Citric acid cycle, Glyconeogenesis, Glycogenolysis, Glycogen synthesis.

3.3 Regulation of blood sugar; Impaired glucose tolerance, Glycosuria, Insulin,Glucogon, Diabetes mellitus, Lactic acidosis, Glycated haemoglobin. Inborn errors associated with carbohydrate metabolism

Unit 4: Proteins:

:Properties, classification and chemistry.

:Metabolism: Transamination, Deamination, oxidative deamination, Urea cycle and Transmethylation.

c) Protein folding and denaturation

Unit 5:Lipids:

:Properties, classification and chemistry.

:Metabolism: Oxidation of fatty acids (alpha and beta oxidation), Prostaglandins, Cholesterol, Hypercholesterolemia, Lipoproteins, Atherosclerosis.

(a) Disorders of lipid metabolism

Unit 6. Enzymes: Properties and classification of enzymes. Co-enzymes, Mechanism of enzyme action. Activation and Inhibition. Enzyme Kinetics, Clinical and industrial applications of enzymes.

Course 3: PARASITOLOGY & ANIMAL BEHAVIOUR

A. PARASITOLOGY

Unit 1: Introduction: Classification, Distribution, and types of parasites. Origin and evolution of parasites, Types of habitats of parasites.

Unit 2: Culture techniques of parasites.

Unit 3: Entry of pathogens via Digestive tract, Urinogenital tract, Skin, and Bites.

Unit4: Habitat, Life cycle, Pathogens transmitted & control of vectors -

(a) Fleas, (b) Mites, (c) Ticks, (d) Lice. e) Mosquitoes

Unit 5: Geographical Distribution ,Morphology, Life cycle, Transmission, athogenicity, and Prophylaxis of (a) Protozoa : *Trypanosoma, Plasmodium*, and *Leishmania.* (b)

Nematode: *Ascaris, Anchylostoma* and *Wucheraria.* (c) Trematodes: *Fasciola, Schistosoma*, (d) Cestodes: *Echinococcus, Hymenolephis*.

Unit 6: Host- Parasite Relationship – Cellular & Physiological.
Unit 7: Manipulation of host behaviour, Parasitism and alltruism, Parasites and social behaviour of host, Parasitic effects benefiting the host.
Unit 8: Parasitoids: Types, Chemical cues with suitable examples.

B. ANIMAL BEHAVIOUR

Unit 1: Introduction: Ethology as a branch of biology, approaches to the study of behaviour, ethograms.
Unit 2: Reflexes and complex behaviours : Latency, after discharge, summation,warm up, fatigue, Inhibition and feedback control.
Unit 3: Instinctive behaviour: Fixed action patterns, sign stimuli and release,types of sign stimuli.
Unit 4: Learning and imprinting behaviour: Definition, categories of learning, habituation, conditioning, latent learning, insight learning, social learning. Imprinting: imprinting as learning, functional aspects of imprinting.
Unit 5: Memory: Short term memory and long term memory, loss of memory, drugs and memory.
Unit 6: Biological communications: Nature and functions, forms and signals- Vision, audition, chemical, pheromones in insects and mammals.
Unit 7: Sexual behaviour: Sex ratio, seasonality, courtship signals, courtship as conflict behaviour, hormones and sexual behaviour, sexual selection (male choice and female choice).
Unit 8: Social organisation: Quasi social, semi social and eusocial, social organisation in insects and primates.
Unit 9: Genes & Behaviour; single gene & behaviour, polygenic inheritance Of behaviour and heredity of behaviour

Unit 10 Biological rhythms: Types of rhythms, biological clocks and their significance.

COURSE 4: CYTOGENETICS & DEVELOPMENTAL BIOLOGYA-CYTOGENETICS

Unit 1 : (a) Origin and Evolution of prokaryotic and eukaryotic cells
(b) Ultrastructural organisation and functions of Plasma membrane and mitochondria
Unit 2: Organisation of eukaryotic chromosomes: (a) Types of chromosomes
(b) Molecular organisation of eukaryotic chromosomes (nucleosome, solenoid, radial loops, mini bands)
Unit 3: Cell cycle and Cell division:(a) Phases of cell cycle,
(b) Ultrastructrure of centrosome (c) Chemistry and Ultrastructural organisation of microtubules (d) Metaphase and anaphase movementsand motor proteins

Unit 4: Principles of Mendelism: (a) Laws of Segregation and Independent Assortment in diploid organisms (b) Deviations to MendelianPrinciples: Interactions of genes, extra nuclear inheritance.

Unit 5: Linkage, Crossing over and Construction of linkage maps
Unit 6: Sex Chromosomes and Sex determination: (a) Sex chromosomes (b)Sex determination in *Drosophila* and Man
Unit 7: Fine Structure of the gene: (a) Classical concept (b) Studies in bar eye and Lozenge loci in Drosophila, Pseudoallelism (c) Benzer's work on rII locus in T-4 phages (d) The concept of cistron, recon and muton (e) Split genes

B - DEVELOPMENTAL BIOLOGY

Unit 1: Introduction to animal development (a) Problems of Developmental biology. (b) Developmental patterns in Metazoans (c) Development in Unicellular Eukaryotes.
Unit 2: Gametogenesis & Fertilization
Unit 3:Creating multicellularity. (a) Cleavage types. (b) Comparative account of Gastrulation.
Unit 4: Early Vertebrate Development (a) Neurulation and ectoderm (b) Endoderm and mesoderm.
Unit 5: Concept of Determination: Totipotency, Induction, Competence, Fate maps, and Organisers.
Unit 6: Role of Cytoplasm and Nucleus in Development: Nuclear transplantation experiments in Amphibia and Acetabularia.
Unit 7: Genetic basis of Differentiation and Morphogenesis: Early embryonic development of Drosophila, Role of maternal contribution in early embryonic development, Homeotic mutations and Homeobox, Imaginal discs, Differential gene activity during development and differentiation
Unit 8: Post embryonic Development: Metamorphosis in Amphibia, Regeneration, Teratogens

First Year Syllabus

PRACTICAL – I
(Based on Paper –I Animal forms & Functions & Ecobiology and Paper – II Physiology & Biochemistry)

1. Estimation of Glycogen
2. Estimation of protein
3. Estimation of Creatinine
4. Estimation of Cholesterol
5. Qualitative analysis of Carbohydrates
6. Qualitative analysis of proteins
7. Qualitative analysis of aminoacids
8. Population study of Drosophila
9. Population study of Termites
10. Contraceptive methods
11. Ecological adapted animals

PRACTICAL – II

(**Based on Paper – III- Parasitology & Behaviour and Paper –IV-Cytogenetics andDevelopmental Biology**)

1. Study of ticks
2. Study of mites
3. Study of lice
4. Study of Mosquitoes
5. Study of plasmodium
6. Study of Ascaris
7. Study of Fasciola
8. Study of mating behaviour of Drosophila
9. Morphology of D.Melanogaster.
10. Mounting of salivary gland chromosome of D.Melanogaster
11. Mutants of D.Melanogaster
12. Mounting of chick embryo
13. Meiotic chromosome preparation form Testis of grasshopper
14. Developmental stages of chick embryo

Final Year Syllabus

Course 5: AQUACULTURE AND WILDLIFE

A -AQUACULTURE

Unit1: Introduction: Definition, scope and status of aquaculture. .

Unit 2:Culture:

Techniques of culturing fishes

: Culture of carps: Indian major and minor carps. Monoculture,polyculture Feeding techniques and mortality.

: Culture of Ornamental fishes: Aquaria preparation and maintenance, Feeding techniques, breeding and caring .

: Culture of shrimps and prawns: Major cultivable species, culture systems, larval rearing.

: Culture of pearl oyster and Frogs.

Unit 3: Capture fishery (Fresh water) Methods of capture, Reservoir fisheries in India

Unit 4: Aquaculture systems : Inland farms, tank farms, pens and enclosures, design and construction of hatcheries.

Unit 5: Nutrition and Feeds: feeding habits and food utilization, energy requirements, live foods, artificial feeds.

Unit 6: Breeding of Fishes: Reproductive cycles, induced breeding, seed production, Cryopreservation

Unit 7: Diseases of fishes & their control: Crustacean : Protozoa, Fungal, bacterial, viral, environmental and nutritional, algal toxins, vitamin‘c’ deficiency diseases.

Unit 8: Weeds, pests and predators and their control.

Unit 9: Fish preservation, Transport and marketing.

Unit 10: Farm management and economics: Concepts, economic principles of farm, management of Hatcheries, Nurseries, rearing ponds, and stocking ponds.

B - WILD LIFE STUDIES

Unit 1: Wildlife heritage and its importance in India: Important wildlife species of India, Range lands: status, types and management. Wildlife status: protected species, Endangered, Threatened, Vulnerable, rare, data deficient categories.

Unit 2: Biosphere reserves: National parks, Wildlife sanctuaries and wild life corridors of Karnataka and India.

Unit 3: Territoriality in wild life : Types, importance, scent markings in big cats, territoriality in monkeys.

Unit 4: Nesting: Types of nests, construction of nests and nest in weaver bird

Unit 5:Bird migration: Exploratory migration, seasonal and ontogenetic migration, orientation and navigation, map models, physiological preparation for migration, environmental factors, advances and evolutionary implications of migration.

Unit 6: Wild Life census: Census Methods for vertebrate species (mammals and birds)

Unit 7: Wild life conflicts: Conflicts between elephant and man, wolf and man, tiger and man.

Unit8: Causes for depletion of wild life with examples.

Unit 9: Wildlife Conservation: Methods and strategies, Role of NGOs in wild life conservation, Ex-situ conservation, Special conservation projects- tiger, tiger forum, Lion, elephant, Musk deer, Thamin deer, Crocodile and Great Indian Bustard.

Unit 10: Wild life management: Case studies(Gudavi and Mandagadde bird sanctuary, Bhadra wild life sanctuary).

Unit 11: Wild life acts and legislation.

COURSE 6: ENVIRONMENTAL POLLUTION & ECOTOXICOLOGYA -
ENVIRONMENTAL POLLUTION

Unit 1: Concept of Biosphere and its components, hydrosphere, atmosphere, and lithosphere. Hydrological cycle

Unit 2: Water pollution: Definition and sources

Types and classification of pollutants. Effects of Water Pollution oxygen sag curves and eutrophication

:Drinking water collection, purification and distribution.

:Wastewater treatment: primary, secondary and tertiary treatment.

Unit 3: Atmospheric pollution: Primary and secondary air pollutants. Biological effects of Nox, SOx, SPM, Hydrocarbons, acid rain, global warming, photochemical smog and ozone hole.

Unit 4: Solid waste and Hazardous waste: Types, Sources, collection, transport, treatment and Disposal methods.

Unit 5: Noise Pollution: Sources, biological effects, control measures and OSHA standards.

Unit 6: Radiation & Thermal pollution: Sources, types, effects, atmospheric fallout and abatement.

Unit 7: Soil Pollution: Soil pollutants and their effects, soil erosion- types and

management, water shed management.

Unit 8: Environmental impact Assessment: Basic elements, Methods and criteria for industrial EIA, aquaculture related EIA, transport related EIA and water related EIA . Case studies: Konkan Railway, Silent valley, Bhopal Tragedy.

Unit 9: Anthropogenic activity and environment

Unit 10: Pollution and loss of biodiversity

B – ECOTOXICOLOGY

Unit 1: Scope of Toxicology, Bio assay methods to study toxicity, factors affecting toxicity, Dose response relationships.

Unit 2: Classification of pesticides. Toxicity of pesticides and metals(DDT, organophosphate, carbamate, mercury, Lead, cadmium): Sources and their effects on animals and man, Biomagnification.

Unit 3: Residual effects of Pesticides.

Unit 4: Biotransformation: Metabolism of toxic substances by animals and detoxification, Toxic risk assessment. Short term and long term impacts of Xenobiotics. Biotransformation of DDT by insects, mouse and man

Unit 5:Studies on the toxins produced by plants(Parthenium,calotropis, nerium, opium), animal (Shellfish, tetradon) and microbes (fungal and bacterial) and their effects.

Unit 6: Tolerance limits and development of resistance in animals to xenobiotics

Unit 7: Statutory provisions and safety standards.

Unit 8: Statistical methods employed in toxicology: Mean, Mode, sd, SE, x^2, Probit analysis, t-Test, Anova.

COURSE 7: SERICULTURE AND APICULTUREA –

SERICULTURE

Unit 1: Sericulture: Components, origin and development of the art and science of sericulture. Global silk production, quality and quantity of silk produced in India, economics of silk production, foreign exchange.

Unit 2: Classification, systematic position of sericigenous insects. Salient features of Saturnidae and Bombycidae. Races of mulberry silkworms, classification based on voltinism, moulting and geographic origin.

Unit 3: Morphology and life cycle of Bombyx mori**.** Structure and functions of Silk glands. **Unit 4:** Silkworm genetics. Linkage, selective sex rearing. Silkworm as a laboratory tool for mutagenicity studies. Effects of radiations and chemicals on silkworm.

Unit 5: Brief account of the package and practices for cultivating the food Plants of silkworms. Use of Sericulture Waste in vermicomposte Verimicomposting techniques, agents and management.

Unit 6: Silkworm rearing: Building, equipments, disinfection, environmental factors, spacing, feeding and bed cleaning.
Unit 7: Modern rearing technology: Seed cocoons, preservation, grainage activity, LSPs, egg production, incubation, artificial hatching, seed organisation and seed area and bivoltine rearing.
Unit 8: Spinning, harvesting, transportation, testing and marketing of cocoons and silk reeling.
Unit 9: Non-mulberry silkworms: Types, morphology and life cycle, rearing and tribal welfare.
Unit 10: Silkworm pests and Predators:Uzi fly, Dermestid beetle, ants, lizard,birds and monkey.
Unit 11: Silkworm Pathology: Protozoan, Fungal, Viral and Bacterial diseasesand their control measures.

B - APICULTURE

Unit 1: Introduction to Apiculture: Scope and its importance. .
Unit 2: Classification and morphology of honey bees, species and races of honey bees, tribal life and bee hunting.
Unit 3: Structural adaptations of mouth parts in bees, honey sac, WaxGlands, stinging apparatus and venom.
Unit 4: Entomophily: Bee plants, floral design, colour, smell, pollen and necter production and composition. Pollen calendar. Relationship between floral design and mouth parts of honey bees. Pollen and nectar collection.

Unit 5: Social life in bees: Division of labour, sex seperation,comb building, orientation of comb, communication, collection of propolis and water.
Unit 6: Honey and its chemical composition, medicinal importance.
Unit 7: Honey bee pests and Predators: Greater wax moth, Wasp, Mites, Birds, Lizards, Bear, Monkeys, Pseudoscarpions.
Unit 8: Honey bee diseases: Nosema, Sac brood, American foul brood, European foul brood and Fungal diseases and their control measures.
Unit 9: Effects of pesticides on bees.

Unit 10: Beekeeping: Rearing of honey bees, equipments, comb foundation, queen rearing(rearing techniques, feed contents, feeding and economics of queen rearing, requeening), bee nursing, honey and wax extraction.
Unit 11:Management of Beekeeping: Management during summer, rainy and winter seasons, desertion, division and uniting of colonies, migratory beekeeping. Flora management.
Unit 12: Economic importance of honey, wax, bee pollination, pollen and venom
Unit 13: Apitherapy.

Unit 14: Apiculture and rural development.

Course 8: MOLECULAR GENETICS & BIOTECHNOLOGY A - MOLECULAR GENETICS

Unit 1: History and Scope of Molecular Genetics.

Unit 2: Structure of DNA, models of DNA, Unique sequences, repetitive sequences, Polindromic sequences, structure of RNA, three dimensional structure of tRNA.

Unit 3: Central dogma of molecular biology.

Unit 4: DNA replication: Prokaryotic and eukaryotic DNA replication,Mechanics of DNA replication,Enzymes and accessory proteins involved in DNA replication.

Unit 5: Transcription: Prokaryotic transcription, Eukaryotic transcription,RNA Polymerases, General and Specific transcription factors, Regularory Elements and mechanisms of transcription regulation, Transcriptional and post-transcriptional gene slicing.

Unit 6: Post – transcriptional modifications in RNA: 5'Cap formation, Transcription termination, 3'end processing and polydenylation, Splicing, editing, Nuclear export of mRNA, mRNA stability.

Unit 7: Translation: Genetic code, Prokaryotic and eukaryotic translation, ranslational machinary, Mechanisms of initiation, elongation and termination, Regulation of translation, Co-and post – translational modifications of protiens.

Unit 8: Antisense and Ribozyme technology; Molecular mechanisms of antisense molecules, Inhibition of splicing, polyadenylation and translation, Disruption of RNA structure and capping, Biochemistry of ribozyme; hammerhead, hairpin and other ribozymes, strategies for designing ribozymes, Application of antisense and ribozymetechnologies,

Unit 9: Gene regulation:Operon concept, negative and positive regulation, Gene regulation in eukaryotes.

Unit 10: Genome analysis:

: C-value paradox, detailed account of various models of prokaryotic genomes,

:Genome analysis of Microbial, yeast, Drosophila, human.

B – BIOTECHNOLOGY

Unit 1: Introduction: History, Scope of biotechnology, Biotechnological process and products.

Unit 2: Genetic engineering: a) Definition, objectives and outline of genetic ngineering procedure.Restriction enzymes, DNA ligase and DNA polymerase in geneticengineering.Cloning Vectors: Plasmids, Phages, Cosmids and Phagemids, Artificial chromosomes (YAC, BAC, HAC), animal viruses and Expression vectors.

Unit 3:

:Construction of Genomic and cDNA libraries.

: Selection and screening of Recombinants: Genetic selection,Use of chromogenic substrates, Insertional activation. Analysis of cloned genes: Characterization of clones, RestrictionMapping, Gene identification, Nucleic acid hybridization, outhern Hybridization, Polymerase chain reaction, DNA sequencing. d) Cloning; Sheep (Dolly), Polly, Pig.

Unit 4: Hybridoma Technology: Scope of the technique, production ofMonoclonal antibodies and its applications.

Unit 5: Animal cell and Tissue culture:

: Introduction, Principles of cell culture, cell and tissue types,cell lines,transformation.

: Cell and tissue culture media: Natural and defined, role and component of serum inculture.

Unit 6: Applications of tissue culture: Tissue culture in biomedical research karyological studies, amniocentesis, mutagenesis, Cytotoxicity Assays.

Unit 7: Transgenic Animals: Drosophila, fish, and mouse.

Unit 8: Applications of Biotechnology: Production of medicinallyimportant products – Insulin, vaccines, hormones, Gene therapy, AIDS. Biofertilizers, biopesticides, silkworm cloning.

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PRACTICAL-IV Based on Paper-VII and Paper-VIII (Apiculture and Sericulture, Molecular Biology and Biotechnology)

I. Molecular Biology and Biotechnology

1. Isolation of fibrous DNA in the given tissue.
2. Estimation of DNA.
3. Isolation of RNA.
4. Estimation of RNA.

II. Apiculture

1. Morphology of honey bee
2. Moth parts and sting of honeybee.
3. Digestive system of honeybee.
4. Structure of honeycomb.
5. Honey bee species.
6. Bee plants.
7. Honey bee equipments.
8. Honey products.

III. Sericulture

1. Silkworm plants.

2. Estimation of leaf protein by Lowry's method.
3. Estimation of total free aminoacids in mulberry leaf by ninhydrin method.
4. Life cycle of *Bombyx mori.*
5. Digestive system of silkworm larva (*B.mori*).
6. Nervous system of silkworm larva (*B.mori*).
7. Cocoons of different silkworm races.
8. Defective cocoons.

PRACTICAL - IV

Based on Paper-VII and Paper-VIII (Apiculture and Sericulture, Molecular Biology and Biotechnology)

Question paper pattern for Practical Examination

1. One major question from Molecular biology and Biotechnology.	1 X 15 M	= 15 M
2. One major question from Apiculture.	1 X 15 M	= 15 M
3. One major question from Sericulture.	1 X 15 M	= 15 M
4. Five identifications.	5 X 2 M	= 10 M
5. Viva.		10 M
6. Record.		10 M