

CS-21: Simulation and Modeling

Unit – I

System, Introduction, System Study, System Examples.

Unit – II

Modeling and Simulation-I, System Modeling, system Simulation, Simulation and Modeling Process

Modeling and Simulation-II, Introduction, Discrete System Models, Continuous System Models, Modeling and Simulation Platforms, Introduction, SIMSCRIPT, GPSS, CSMP III

Unit – III

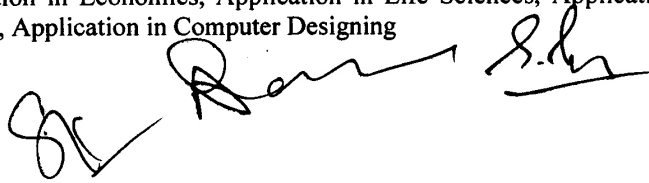
Model Verification and Validation, Validation and Verification, Estimation Methods, Simulation Run Statistics, Replication of Runs, Regenerative Techniques

Unit – IV

Monte Carlo Methods, Introduction, Random Number Generation, Test for Randomness, An Application

Unit – V

Application of Simulation and Modeling, Introduction, Application in Management, Application in optimization, Application in Artificial Intelligence, Application in Sociology, Application in Economics, Application in Life Sciences, Application in Database Designing, Application in Computer Designing



Madhya Pradesh Bhoj (Open) University
MCA (Final Year)
Syllabus for the Session 2005-06

CS-17 VC++

Unit - I

Windows Application Basics : Windows and Window, Windows Programming.

Visual C++ Basics, Visual C++ and Windows Programming, Structure of a VC++ application, Starting VC++, A Sample VC++ (Win32) Application.

Dialogs and Controls, Dialog boxes, Command Button Control, Check-box Control, Radio Button Control, List Box, Combo Box, slider Control, Messages, Message Queue, Handling Messages with Class Wizard.

Documents and Views, The Documents Class, The View Class.

Unit - II

Drawing on the Screen : Device Contexts, Device Objects, Wizard Support for Device Context, Stock Objects, A DC Example, Using Color in Windows Applications.

Printing and Print Preview : Printing, MFC Printing Application, Adding Functionalities to MFC Print

Persistence and File I/O : File Basics, Files and Windows Applications, Serialization.

Unit - III

Status Bars and Tool Bars : Status Bar, Toolbars.

Common Controls : Command Button Control, check Box Control, Radio Button Control, List Box Control, Combo Box Control, Slider Control.

Help : Building Blocks of help,

Property Pages and Sheets : CpropertySheet, CpropertyPage

Unit - IV

Common Controls : ActiveX and OLE, ActiveX and COM, ActiveX and MFC, VC++ ActiveX Project, ActiveX Control Macros.

Building an ActiveX Container Application : ActiveX Control Containers.

Building an ActiveX Server Application : Component, Building and Using COM Server in VC++.

Building an ActiveX Control : A Simple ActiveX Control Application, ActiveX Control Methods, ActiveX Events.

Unit - V

Socket, Mapi and the Internet : Internet/Intranet Applications, Sockets, Ports and Addresses, Creating a Socket Program, Creating a Client Browser Program.

Internet Programming : Create The Project, Set_MERGE_PROXYSTUB, The Build Rule, **The Active Template Library :** An ATL Project.

Database Application : ActiveX Data Objects, Creating a Database Application..



CS-18 Software Engineering

Unit – I

Introduction to Software and Software Engineering: The Origin of Software Engineering, Characteristics of Software Engineering, Software Crisis, **Software Engineering: Models** : Life Cycle Model, Spiral Model, Models of the Software Process

Unit- II

Software Engineering Methodologies: Software Process, Software Metrics, **Configuration Management Issues** : Organizing the Process.

Unit – III

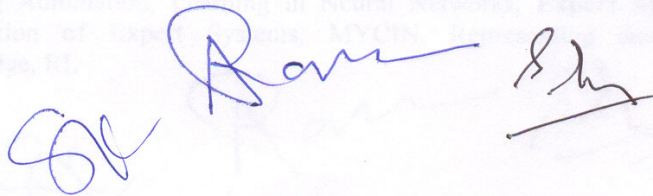
Software Requirement Analysis and Specification : Requirements Definition, Nonfunctional Requirements Definition, Formal Specification, Algebraic Specification, Model-based Specification, Z Schemas, Specification using Functions, Specification using Sequences, Validation, The Prototyping Process, Prototyping Techniques

Unit- IV

Principles of Software Project Management : Principles of Software Project Management, Principles or Laws of Project Management, Software Project and Personnel Planning, Cost Estimation of Building a System, Software Metrics, The Project Plan, Resource Tracking and Stimulation Example, Quality Assurance Planning, Risk Analysis

Unit - V

Software Design : Top-down Design, Systems Design, Design Decomposition, Software Design Quality, Design Description Languages, User Interface Design, User Interface Design Objectives, Function-oriented Design, Data-flow Diagrams, Structure Charts, Data Dictionaries, Deriving Structure Charts, Design Example, Concurrent Systems Design, Object-oriented Design, Inappropriate Object-oriented Design, Design Quality Assurance, Design Reviews, Design Quality Metrics, User Interface Evaluation, Verification and Validation, The Output Interface.



CS-19 : Artificial Intelligence

Unit – I

What is Artificial Intelligence, Artificial Intelligence: An Introduction, AI Problems, The Underlying Assumption, AI Techniques, Games, Theorem Proving, Natural Language Processing, Vision Processing, Speech Processing, Robotics, Expert System, Search Knowledge, Abstraction.

Unit – II

Problem, Problem Space and Search, Defining the Problem as a State Space, Production Systems, Heuristic Search, Heuristic Search Techniques, Best-First Search, Branch-and-Bound, Problem Reduction, Constraint Satisfaction, Means-End Analysis.

Knowledge Representation, Representation and Mapping, Approaches to Knowledge Representation, Issues in Knowledge Representation, The Frame Problem.

Unit – III

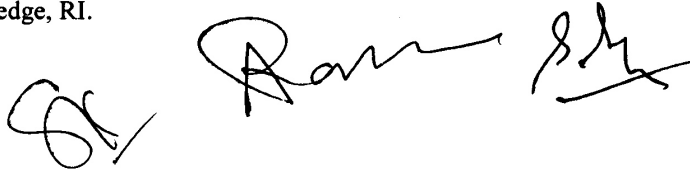
Predicate Logic, Representing Simple Facts in Logic, Representing Instance and its Relationships, Modus Ponens, Resolution, Natural Deduction, Dependency-Directed Backtracking, **Rule Based Systems**, Procedural versus Declarative Knowledge, Forward versus Backward Reasoning, Matching, Conflict Resolution, Use of Non Back Track,

Unit – IV

Structured Knowledge Representation Semantic Net, Semantic Nets, Frames, Slots Exceptions, Slot-Values as Objects, Handling Uncertainties, Probabilistic Reasoning, Use of Certainty Factor, Fuzzy Logic

Unit – V

Learning, Concept of Learning, Rote Learning, Learning by Taking Advice, Learning in Problem Solving, Learning by Induction, Explanation-Based Learning, Learning Automation, Learning in Neural Networks, **Expert Systems**, Need and Justification of Expert Systems, MYCIN, Representing and Using Domain Knowledge, RI.



CS-20 Internet Programming

UNIT - I

Introduction to Internet, Beginning of internet, Timeline of internet, How internet works, Components of internet - client/server, modem, cable, modem, backbone, router, IP addresses, address classes, dns names, subnet, udp, & TCP, ports, firewall Connecting to internet, Who owns the internet, Facilities available over internet - email, www, ftp, telnet, usenet, blog, rss, faq, caht, rfc IPv6, Virtual private network Mode of connectivity with internet, uses of internet.

UNIT - II

Introduction to www, what is www, Introduction to website, website structure, Uniform resource locator, home page Browser, uses of web site, Web site hosting, Registration process of domain name languages of web.

UNIT - III

HTML-Creating HTML Documents, Title and Headings, Paragraphs Linking to other Documents Relative Links versus Absolute Pathnames Links to Specific Sections in Documents Unnumbered Lists Numbered Lists Definition Lists Nested Lists Preformatted Text Text Tags Animated GIF Images Image Alignment Using an Image as Hypertext Link Embedding sound and video Frames.

UNIT - IV

JavaScript Introduction JavaScript Basics What We Can Do with JavaScript Embedding JavaScript in HTML Functions Using the JavaScript Console Using JavaScript Objects Window Methods Handling Events Using the Status Bar Validating Form Input Using Windows and Frames Creating a Frame Using JavaScript URLs javascript examples(programs).

UNIT - V

Active Server Pages (ASP) Introduction to ASP technologies Asp objects ActiveX components Vbscript Vbscript functions Working with databases HTTP status codes error codes Example of asp programms.

