# M.C.A. (Master of Computer Applications)

## Semester I

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(MASTER OF COMPUTER APPLICATIONS)

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MC9211 COMPUTER ORGANIZATION

UNIT I DIGITAL FUNDAMENTALS 8

UNIT II COMBINATIONAL AND SEQUENTIAL CIRCUITS 10

UNIT III BASIC STRUCTURE OF COMPUTERS 9

UNIT IV PROCESSOR DESIGN 9
Processor basics – CPU Organization – Data path design – Control design – Basic concepts – Hard wired control – Micro programmed control – Pipeline control – Hazards – Super scalar operation.

UNIT V MEMORY AND I/O SYSTEM 9

TOTAL = 45

TEXT BOOKS:

REFERENCES:
MC9212 PROBLEM SOLVING AND PROGRAMMING

UNIT I INTRODUCTION TO PROGRAMMING
Introduction to computing – building blocks for simple programs – problem to program –
Decision structures – loop structures – problem analysis – programming style –
documentation and testing.

UNIT II PROGRAMMING PARADIGMS

UNIT III PROBLEM SOLVING TECHNIQUES
Programming life cycle phases – problem solving – implementation – maintenance –
pseudo code representation – flow charts - algorithms – algorithmic efficiency –
complexity of algorithms.

UNIT IV C PROGRAMMING FUNDAMENTALS
Structured program development – Data types – operators – expressions – control flow –
arrays and pointers – functions – Input – output statements – storage classes.

UNIT V ADVANCED FEATURES
processing – fundamental data structures.

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REFERENCES:

   publishers, 2002.
**MC9213 DATABASE MANAGEMENT SYSTEMS**

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MC9214      DATA STRUCTURES                        L  T  P  C
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UNIT I       DATA STRUCTURES                        9

UNIT II      TREES                                 9
Binary Trees – Operations on binary trees - Binary Tree Representations – node representation, internal and external nodes, implicit array representation – Binary tree Traversals - Huffman Algorithm – Representing Lists as Binary Trees

UNIT III     SORTING AND SEARCHING                 9

UNIT IV      GRAPHS AND THEIR APPLICATIONS        9

UNIT V       STORAGE MANAGEMENT                   9
General Lists: Operations, linked list representation, using lists, Freeing list nodes - Automatic list Management: Reference count method, Garbage Collection, Algorithms, Collection and compaction

L  45 T 15 Total: 60

TEXTBOOK


REFERENCES

MC9215 ACCOUNTING AND FINANCIAL MANAGEMENT

UNIT I FINANCIAL ACCOUNTING

UNIT II ACCOUNTING

UNIT III BUDGETS AND BUDGETING CONTROL
Budgets and Budgetary Control-Meaning-Types-Sales Budget-Production Budget-Cost of Production Budget-Flexible Budgeting-Cash Budget-Master Budget-Zero Base Budgeting-Computerized Accounting

UNIT IV INVESTMENT DECISION AND COST OF CAPITAL

UNIT V FINANCING DECISION AND WORKING CAPITAL MANAGEMENT

TEXTBOOK

REFERENCES
1. S.P.Iyengar, “Cost and Management Accounting”, Sultan Chand & Co,
2. I.M.Pandey, “Elements of Management Accounting” Vikas Publishing House, 19993
MC9217 PROGRAMMING AND DATA STRUCTURES LAB

1. Stack and Queue
2. Binary tree Traversals
3. Merge Sort
4. DFS and BFS
5. Warshall’s Algorithm
6. Dijkstra’s Algorithm
7. Huffman’s Algorithm
8. Insertion Sort

MC9218 DBMS LAB

1. Creation of base tables and views.
2. Data Manipulation
   INSERT, DELETE and UPDATE in tables
   SELECT, Sub Queries and JOIN
3. Data Control Commands
4. High level language extensions – PL/SQL. Or Transact SQL
5. Use of Cursors, Procedures and Functions
6. Embedded SQL or Database Connectivity.
7. Oracle or SQL Server Triggers.
8. Working with Forms, Menus and Reports.

Total= 45

MA9221 MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

UNIT I MATRIX ALGEBRA
Matrices, Rank of Matrix, Solving System of Equations-Eigen Values and Eigen Vectors-
Inverse of a Matrix - Cayley Hamilton Theorem

UNIT II BASIC SET THEORY
Basic Definitions - Venn Diagrams and set operations - Laws of set theory - Principle of
inclusion and exclusion - partitions- Permutation and Combination - Relations-
Properties of relations - Matrices of relations - Closure operations on relations -
Functions - injective, surjective and bijective functions.

UNIT III MATHEMATICAL LOGIC
Propositions and logical operators - Truth table - Propositions generated by a set,
Equivalence and implication - Basic laws- Some more connectives - Functionally
complete set of connectives - Normal forms - Proofs in Propositional calculus - Predicate calculus.

UNIT IV  FORMAL LANGUAGES  12
Languages and Grammars-Phrase Structure Grammar-Classification of Grammars-Pumping Lemma For Regular Languages-Context Free Languages.

UNIT V  FINITE STATE AUTOMATA  12
Finite State Automata-Deterministic Finite State Automata(DFA), Non Deterministic Finite State Automata (NFA)-Equivalence of DFA and NFA-Equivalence of NFA and Regular Languages.

Total No. of Periods: 60

REFERENCES


MC9222  OBJECT ORIENTED PROGRAMMING  L T P C
3 0 0 3

UNIT I  FUNDAMENTALS  9

UNIT II  IMPLEMENTING ADTS AND ENCAPSULATION  9
Aggregate Type struct – Structure Pointer Operators – Unions – Bit Fields – Data Handling and Member Functions – Classes – Constructors and Destructors – Static Member – this Pointer – reference semantics – implementation of simple ADTs.
UNIT III POLYMORPHISM

UNIT IV TEMPLATES

UNIT V INHERITANCE

TOTAL = 45

REFERENCES:

MC9223  DESIGN AND ANALYSIS OF ALGORITHMS

UNIT I  INTRODUCTION

UNIT II  DIVIDE AND CONQUER METHOD AND GREEDY METHOD

UNIT III  DYNAMIC PROGRAMMING

UNIT IV  BACKTRACKING AND BRANCH AND BOUND

UNIT V  NP-HARD AND NP-COMPLETE PROBLEMS

L 45 T 15 Total : 60 Hours

REFERENCES:
MC9224 SYSTEM SOFTWARE

UNIT I INTRODUCTION

UNIT II ASSEMBLERS

UNIT III LOADERS AND LINKERS

UNIT IV MACRO PROCESSORS

UNIT V OTHER SYSTEM SOFTWARE

TOTAL = 45

TEXT BOOKS:

REFERENCES:
MC9225 OPERATING SYSTEMS

UNIT I INTRODUCTION
Introduction – Operating Systems and services – Processes – CPU Scheduling approaches

UNIT II PROCESS SYNCHRONIZATION
Process synchronization – Semaphores – Deadlocks – Handling deadlocks – Multithreading

UNIT III MEMORY MANAGEMENT
Memory management – Paging – Segmentation – Virtual Memory – Demand paging – Replacement Algorithms

UNIT IV DISK SCHEDULING
Disk Scheduling approaches – File systems – Design issues – User interfaces to file systems – I/O device management.

UNIT V CASE STUDIES

REFERENCES:
MC9227 OBJECT ORIENTED PROGRAMMING LAB

1. Write a C++ Program to illustrate Enumeration and Function Overloading
2. Write a C++ Program to illustrate Scope and Storage class
3. Implementation of ADT such as Stack and Queues
4. Write a C++ Program to illustrate the use of Constructors and Destructors and Constructor Overloading
5. Write a Program to illustrate Static member and methods
6. Write a Program to illustrate Bit fields
7. Write a Program to overload as binary operator, friend and member function
8. Write a Program to overload unary operator in Postfix and Prefix form as member and friend function
9. Write a Program to illustrate Iterators and Containers
10. Write a C++ Program to illustrate function templates
11. Write a C++ Program to illustrate template class
12. Write C++ Programs and incorporating various forms of Inheritance
13. Write a C++ Program to illustrate Virtual functions
14. Exception Handling

MC9228 SYSTEM SOFTWARE LAB

1. Assemblers.
2. Linkers.
3. Loaders.
4. Features of text editors.
5. Basic UNIX commands.
7. Grep, sed, awk.
8. File system related system calls.
10. Message queues.
11. Pipe, FIFO’s.
12. Signals.
13. Shared memory.

TOTAL = 45
MC9229  ALGORITHMS LAB

1. Quick Sort
2. Binary Search
3. Binary Tree Traversal
4. Warshall’s Algorithm
5. Dijkstra’s Algorithm
6. Prim’s Algorithm
8. Subset Sum Problem – Backtracking
9. Travelling salesperson problem – Branch and Bound
10. Strassen’s matrix multiplication

MC9231  COMPUTER NETWORKS

UNIT I  INTRODUCTION

UNIT II  NETWORK FUNDAMENTALS

UNIT III  NETWORK LAYER

UNIT IV  TRANSPORT LAYER

UNIT V  APPLICATIONS

TOTAL = 45
REFERENCES:


<table>
<thead>
<tr>
<th>MC9232</th>
<th>MICROPROCESSORS AND ITS APPLICATIONS</th>
<th>L T P C</th>
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UNIT I  THE 8086 PROCESSOR - SOFTWARE ASPECTS
Evolution of Microprocessors - 8086 architecture – Addressing modes- Instruction set and assembler directives – Assembly language programming – Interrupts and interrupt service routines.

UNIT II  8086 SYSTEM DESIGN
8086 signals description – Basic configurations - System bus timing –System design using 8086 – Minimum mode /Maximum modes 8086 system and timings.

UNIT III  INTERFACING CONCEPTS
Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication interface – Timer – Keyboard /display controller – Interrupt controller – DMA controller – Programming and applications.

UNIT IV  ADVANCED PROCESSORS

UNIT V  BUILDING SYSTEMS
REFERENCES:

5. Websites of latest processors.

MC9233 SOFTWARE ENGINEERING

UNIT I INTRODUCTION

UNIT II SOFTWARE DESIGN

UNIT III SOFTWARE METRICS

UNIT IV SOFTWARE TESTING AND MAINTENANCE

UNIT V SOFTWARE CONFIGURATION MANAGEMENT (SCM) & CASE TOOLS

TOTAL = 45
REFERENCES:


MC9234 COMPUTER GRAPHICS

UNIT I BASIC CONCEPTS

UNIT II 3D GRAPHICS

UNIT III VISUAL COMMUNICATION

UNIT IV PRESENTATION

UNIT V INTERACTIVE 3D ILLUSTRATED WITH IMAGES AND TEXT
Generating Illustrated Documents – Consistency of Rendered Images and their Textual Labels – Architecture – Zoom Techniques for Illustration Purpose – Interactive handling of Images and Text – Figure Captions for Anatomical Illustrations.

TOTAL = 45
REFERENCES:


MC9235 WEB PROGRAMMING

UNIT I BASIC INTERNET CONCEPTS
Connecting to the Internet – Domain Name System - Exchanging E-mail – Sending and Receiving Files - Fighting Spam, Sorting Mail and avoiding e-mail viruses – Chatting and Conferencing on the Internet – Online Chatting - Messaging – Usenet Newsgroup – Internet Relay chat (IRC) – Instant Messaging - Voice and Video Conferencing.

UNIT II WORLD WIDE WEB

UNIT III JAVA FUNDAMENTALS

UNIT IV PACKAGES

UNIT V ADVANCED JAVA PROGRAMMING

Total No. of Periods : 45

TEXT BOOK

REFERENCES

MC9237  GRAPHICS LAB  

1. TWO DIMENSIONAL TRANSFORMATIONS:
Creation of two dimensional objects and applying simple transformations like Translation, Scaling, Rotation and applying Composite transformations.

2. THREE DIMENSIONAL TRANSFORMATIONS:
Creation of simple three dimensional objects like cube, cone and cylinder and applying simple transformations like Translation, Scaling, Rotation and applying Composite transformations.

3. VISIBLE SURFACE DETECTION:
Finding out visible surfaces and removal of hidden surfaces in simple objects using object space and image space algorithms.

4. IMAGE EDITING:
Image enhancement, Image transformation from color to gray scale and vice versa, Image manipulation and Image optimization for web - Usage of editing tools, layers, filters, special effects and color modes. Creation of simple Gif animated images with textual illustrations.

MC9238  MICROPROCESSOR LAB  

1. Study of BIOS and DOS function calls for keyboard & Display interfacing

2. Assembly Language Programming with 8086 to perform the following operation  
   a. Arithmetic & Logical Operation  
   b. String Manipulation Operation  
   c. File Manipulation Operation  
   d. Terminate and Stay Resident (TSR) Program

3. Using Assembly Language with C/C++

4. Perform the following interfacing concepts with a microprocessor chip  
   a. Traffic signal controller using 8255 PPI  
   b. Stepper Motor controller using 8255 PPI  
   c. ADC/DAC interface  
   d. Waveform generation using 8253/8254 Timers
e. DC Motor Speed Controller
f. Keyboard/Display Controller using 8279

REFERENCES:

1. IBM PC Assembly Language and Programming by Peter Abel, fifth edition

MC9238 WEB PROGRAMMING LAB

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1. Studying internet connection procedures
2. Sending and receiving mails from one or more email clients
3. Video Conferencing demonstration
4. Downloading and installing softwares (Example: Java) and setting up path and class path
5. Using FTP
6. Creation of web site with forms, frames, links, tables etc with any web page editors and using images and audio files as part of web pages
7. Writing Java programs by making use of class, interface, package, etc for the following
   - Different types of inheritance study
   - Uses of ‘this’ keyword
   - Polymorphism
   - Creation of user specific packages
   - Creation of jar files and using them
   - User specific exception handling
8. Writing window based GUI applications using frames and applets such as Calculator application, Fahrenheit to Centigrade conversion etc
9. Application of threads examples
10. Reading and writing text files
11. Reading image files and manipulating them with image related classes and methods
12. Writing an RMI application to access a remote method
13. Writing a Servlet program with database connectivity for a web based application such as students result status checking, PNR number enquiry etc
14. Creation and usage of Java bean

MC9241 NETWORK PROGRAMMING

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UNIT I INTRODUCTION

UNIT II ELEMENTARY TCP SOCKETS
Introduction to Socket Programming - Introduction to Sockets - Socket address Structures - Byte ordering functions - address conversion functions - Elementary TCP Sockets - socket, connect, bind, listen, accept, read, write, close functions - Iterative Server - Concurrent Server.

UNIT III APPLICATION DEVELOPMENT
TCP Echo Server - TCP Echo Client - Posix Signal handling - Server with multiple clients - boundary conditions: Server process Crashes, Server host Crashes, Server Crashes and reboots, Server Shutdown - I/O multiplexing - I/O Models - select function - shutdown function - TCP echo Server (with multiplexing) - poll function - TCP echo Client (with Multiplexing)

UNIT IV SOCKET OPTIONS, ELEMENTARY UDP SOCKETS
Socket options - getsock and setsock functions - generic socket options - IP socket options - ICMP socket options - TCP socket options - Elementary UDP sockets - UDP echo Server - UDP echo Client - Multiplexing TCP and UDP sockets - Domain name system - gethostbyname function - Ipv6 support in DNS - gethostbyadr function - getservbyname and getservbyport functions.

UNIT V ADVANCED SOCKETS

TOTAL = 45

REFERENCES:

MC9242 RESOURCE MANAGEMENT TECHNIQUES

UNIT I LINEAR PROGRAMMING MODELS
Mathematical Formulation - Graphical Solution of linear programming models - Simplex method - Artificial variable Techniques- Variants of Simplex method

UNIT II TRANSPORTATION AND ASSIGNMENT MODELS
Mathematical formulation of transportation problem- Methods for finding initial basic feasible solution - optimum solution - degeneracy - Mathematical formulation of assignment models - Hungarian Algorithm - Variants of the Assignment problem

UNIT III INTEGER PROGRAMMING MODELS
Formulation – Gomory’s IPP method – Gomory’s mixed integer method – Branch and bound technique.

UNIT IV SCHEDULING BY PERT AND CPM 9

UNIT V QUEUEING MODELS 9
Characteristics of Queuing Models – Poisson Queues - (M / M / 1) : (FIFO / ∞ / ∞), (M / M / 1) : (FIFO / N / ∞), (M / M / C) : (FIFO / ∞ / ∞), (M / M / C) : (FIFO / N / ∞) models.

Total No. of Periods : 45

TEXT BOOKS


REFERENCES


MC9243 VISUAL PROGRAMMING

UNIT I WINDOWS PROGRAMMING 8

UNIT II VISUAL BASIC PROGRAMMING 10

UNIT III VISUAL C++ PROGRAMMING 9
Visual C++ components – Introduction to Microsoft Foundation Classes Library – Getting started with AppWizard – Class Wizard – Event handling – Keyboard and Mouse events - WM_SIZE, WM_CHAR messages - Graphics Device Interface - Pen, Brush, Colors,
UNIT IV CONTROLS

UNIT V ADVANCED CONCEPTS

TOTAL = 45

TEXT BOOKS:

REFERENCES:
3. Herbert Sheildt, “MFC from the Ground Up”.
Identifying Usecase – Business object analysis – Usecase driven object oriented analysis – Usecase model – Documentation – Classification – Identifying object, relationships, attributes, methods – Super-sub class – A part of relationships Identifying attributes and methods – Object responsibility

UNIT IV OBJECT ORIENTED DESIGN


UNIT V SOFTWARE QUALITY


L : 45 T : 15 Total No. of periods : 60

TEXT BOOKS


REFERENCES


MC9246 VISUAL PROGRAMMING LAB

L T P C
0 0 3 2

VB
1. Form Design – Keyboard & Mouse events
2. Programs on usage of data types - variant, Control arrays
3. Simple applications using file system controls
4. Database applications using data control.
5. Simple Dialog Based application – eg. Calculator, interest computation, money conversions, etc.
6. Creating SDI & MDI applications, Modal and Modeless dialog.
7. Programming for reading and writing into documents.
9. Creating static and dynamic splitter windows
10. Creating DLLs and using them.
11. Winsock and WinInet & Internet Explorer common controls.
12. Data access through ODBC – Cdatabase, Crecordset.
13. Creating ActiveX control and using it.

TOTAL = 45
MC9247  NETWORK PROGRAMMING LAB

1. Socket Programming
   a. TCP Sockets
   b. UDP Sockets
   c. Applications using Sockets
2. Simulation of Sliding Window Protocol
3. Simulation of Routing Protocols
4. RPC
5. Development of applications such as DNS/ HTTP/ E-mail/ Multi-user Chat

MC9248  CASE TOOLS LAB

1. Practicing the different types of case tools such as (Rational Rose & other Open Source) used for all the phases of Software development life cycle.
2. Data modeling
3. Semantic data modeling
4. Source code generators
5. Re-engineering
6. Experimenting CASE Environments
   a. Toolkits
   b. Language-centered
   c. Integrated
   d. Fourth generation
   e. Process-centered
7. Implementation of the following using CASE Workbenches:
   a. Business planning and modeling
   b. Analysis and design
   c. User-interface development
   d. Programming
   e. Verification and validation
   f. Maintenance and reverse engineering
   g. Configuration management
   h. Project management
UNIT I
IT ARCHITECTURE AND EMERGENCE OF MIDDLEWARE

UNIT II
DISTRIBUTED APPLICATION

UNIT III
SYSTEM MANAGEMENT & SECURITY

UNIT IV
APPLICATION DESIGN AND IT ARCHITECTURE

UNIT V
INFORMATION ACCESSES AND INFORMATION ACCURACY

TOTAL = 45

TEXT BOOKS:
MC9252 SOFTWARE PROJECT MANAGEMENT

UNIT I INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT 9
Project Definition – Contract Management – Activities Covered By Software Project Management – Overview Of Project Planning – Stepwise Project Planning.

UNIT II PROJECT EVALUATION 9

UNIT III ACTIVITY PLANNING 9

UNIT IV MONITORING AND CONTROL 9

UNIT V MANAGING PEOPLE AND ORGANIZING TEAMS 9

TOTAL = 45

REFERENCES:

Apply the following to typical application problems:

1. Java rmi
2. CORBA
3. COM
4. C# and .NET

A possible set of applications may be the following:

1. Typical experiment to investigate client-server communication
2. Typical experiment to investigate the workings of RMI
3. Typical experiment to investigate the use of CORBA technology with Java.
4. Chat Room
5. Designing of e-business
6. Online games
Apply the following to typical application problems:

1. Project Planning
2. Software Requirement Analysis
3. Software Estimation
4. Software Design
5. Data Modelling & Implementation
6. Software Testing
7. Software Debugging

A possible set of applications may be the following:

a. Library System
b. Student Marks Analyzing System
c. Text Editor.
d. Create a dictionary.
e. Telephone dictionary.
f. Simulator Software for Parallel Processing Operation.
g. Inventory System.

MA9227  NUMERICAL AND STATISTICAL METHODS

UNIT I  LINEAR SYSTEM OF EQUATIONS
Solution of Systems of equations – Solution of Simultaneous linear equations – Gauss elimination methods – Gauss Jordan methods, Jacobi and Gauss Seidal iterative methods

UNIT II  NUMERICAL DIFFERENTIATION AND INTEGRATION
Interpolation, Differentiation and integration – difference table – Newton’s forward and backward interpolation – Lagrangian interpolation – Differentiation formulae – Trapezoidal and Simpson rule Gaussian – Quadrature

UNIT III  DIFFERENTIAL EQUATIONS

UNIT IV  PROBABILITY DISTRIBUTIONS
Probability axioms- Bayes Theorem- Discrete random variables and Continuous random variables – Density & Distribution functions - Joint and marginal distributions –
Conditional distributions - Characteristic function- moment generating function- expectation.

UNIT V SAMPLING DISTRIBUTIONS
Small sample, t-test, F-test, $\chi^2$ -test, ANOVA one way classification and two way classification

Total No of periods: 60

TEXT BOOKS

REFERENCES

UNIT V ONLINE COMMERCE ENVIRONMENTS 12

Total No of periods: 45

TEXT BOOKS


REFERENCES


UNIT IV INFORMATION SYSTEM APPLICATION 12

UNIT V DEVELOPMENT AND MAINTENANCE OF INFORMATION SYSTEMS 12

TOTAL = 60

TEXT BOOKS:

REFERENCES:

MC9273 WEB GRAPHICS

UNIT I INTRODUCTION 9
HTML coding - Basic web graphics - Web page design and site building - Image maps - Adding multimedia to the web- Vector and Raster graphics.

UNIT II RASTER IMAGE EDITING SOFTWARE 9
Images - Moving and Merging Layers - Tool Palette - Dialogs - Masking – Filters – Adding text to images – Designing icons and background images.

**UNIT III VECTOR IMAGE HANDLING**


**UNIT IV MULTIMEDIA**

Creating clippings - Animations with sound effects - Adding audio or Video - Windows Media Player ActiveX Control - Agent control - Embedding VRML in a web page - Real Player ActiveX control.

**UNIT V APPLICATIONS**

Creating web site with a particular theme using all the utilities - Graphics - Animations and Interaction.

**REFERENCES:**


UNIT V PERFORMANCE EVALUATION AND CONTROL PROCESS

TOTAL = 45

TEXT BOOKS:

REFERENCES:

MC9276 ADVANCED DATABASES

UNIT I PARALLEL AND DISTRIBUTED DATABASES

UNIT II OBJECT AND OBJECT RELATIONAL DATABASES
UNIT III XML DATABASES

UNIT IV MOBILE DATABASES
Mobile Databases: Location and Handoff Management - Effect of Mobility on Data Management - Location Dependent Data Distribution - Mobile Transaction Models - Concurrency Control - Transaction Commit Protocols- Mobile Database Recovery Schemes

UNIT V MULTIMEDIA DATABASES

TOTAL = 45

REFERENCES

MC9277 SOFTWARE QUALITY MANAGEMENT

UNIT I FUNDAMENTALS OF SOFTWARE QUALITY ENGINEERING 3 0 0 3

UNIT II DEVELOPMENTS IN MEASURING QUALITY 9
Quality Characteristics Tree – The FURPS Model And FURPS+ – Gilb Approach – Quality Prompts.

UNIT III QUALITY MANAGEMENT SYSTEM

UNIT IV PRINCIPLES AND PRACTICES IN QMS

UNIT V MEASURES AND METRICS IN PROCESS AND PROJECT DOMAINS

TOTAL = 45

REFERENCES:
Data structure and input processing – transmission control blocks– segment format– comparison– finite state machine implementation– Output processing– mutual exclusion– computing the TCP data length.

UNIT V TCP IMPLEMENTATION II

TOTAL = 45

TEXT BOOKS:

REFERENCES:

MC9279 DISTRIBUTED SYSTEMS

UNIT I COMMUNICATION IN DISTRIBUTED ENVIRONMENT

UNIT II DISTRIBUTED OPERATING SYSTEMS
UNIT III  DISTRIBUTED RESOURCE MANAGEMENT
Distributed Shared Memory – Data-Centric Consistency Models – Client-Centric Consistency Models – Ivy – Munin – Distributed Scheduling – Distributed File Systems – Sun NFS.

UNIT IV  FAULT TOLERANCE AND CONSENSUS

UNIT V  CASE STUDIES
Distributed Object-Based System – CORBA – COM+ – Distributed Coordination-Based System – JINI.

REFERENCES:

MC9280  DATA MINING AND DATA WAREHOUSING

UNIT I

UNIT II
Association Rule Mining: - Efficient and Scalable Frequent Item set Mining Methods –
Mining Various Kinds of Association Rules – Association Mining to Correlation Analysis – Constraint-Based Association Mining.

UNIT III


UNIT IV


UNIT V

Mining Object, Spatial, Multimedia, Text and Web Data:

Multidimensional Analysis and Descriptive Mining of Complex Data Objects – Spatial Data Mining – Multimedia Data Mining – Text Mining – Mining the World Wide Web.

REFERENCES

MC9281 COMPONENT BASED TECHNOLOGY

UNIT I INTRODUCTION

UNIT II JAVA COMPONENT TECHNOLOGIES

UNIT III CORBA TECHNOLOGIES

UNIT IV COM AND .NET TECHNOLOGIES

UNIT V COMPONENT FRAMEWORKS AND DEVELOPMENT

TOTAL = 45

TEXT BOOKS:

REFERENCES:

MC9282 MANAGERIAL ECONOMICS

UNIT I INTRODUCTION TO MANAGERIAL ECONOMICS
Managerial Economics – meaning, nature and scope – Managerial Economics and business decision making – Role of Managerial Economist – Fundamental concepts of Managerial Economics. Demand Analysis – meaning, determinants and types of

UNIT II SUPPLY, PRODUCTION AND COST ANALYSIS
9

UNIT III MARKET STRUCTURE AND PRICE DETERMINATION
9

UNIT IV PROFIT AND INVESTMENT ANALYSIS
9

UNIT V MACROECONOMIC ISSUE
9

Total No of periods: 45

TEXT BOOK:

REFERENCES:
MC9283 MOBILE COMPUTING

UNIT I WIRELESS COMMUNICATION FUNDAMENTALS 9

UNIT II TELECOMMUNICATION SYSTEMS 11

UNIT III WIRELESS NETWORKS 9

UNIT IV NETWORK LAYER 9

UNIT V TRANSPORT AND APPLICATION LAYERS 7

TOTAL = 45

TEXT BOOKS:

REFERENCES:
MC9284 DIGITAL IMAGING

UNIT I FUNDAMENTALS OF IMAGE PROCESSING 9

UNIT II IMAGE ENHANCEMENT 9

UNIT III IMAGE SEGMENTATION AND FEATURE ANALYSIS 9

UNIT IV MULTI RESOLUTION ANALYSIS AND COMPRESSIONS 9

UNIT V APPLICATIONS OF IMAGE PROCESSING 9

TOTAL = 45

REFERENCES:
UNIT I INTRODUCTION TO ERP


UNIT II ERP IMPLEMENTATION


UNIT III BUSINESS MODULES


UNIT IV ERP MARKET


UNIT V ERP – PRESENT AND FUTURE

Turbo Charge the ERP System – EIA – ERP and E–Commerce – ERP and Internet – Future Directions in ERP.

REFERENCES:

MC9286 AGENT BASED INTELLIGENT SYSTEMS

UNIT I INTRODUCTION 9

UNIT II KNOWLEDGE REPRESENTATION AND REASONING 9
Logical Agents-First order logic-First Order Inference-Unification-Chaining- Resolution Strategies-Knowledge Representation-Objects-Actions-Events

UNIT III PLANNING AGENTS 9

UNIT IV AGENTS AND UNCERTAINTY 9

UNIT V HIGHER LEVEL AGENTS 9
Knowledge in Learning-Relevance Information-Statistical Learning Methods-Reinforcement Learning-Communication-Formal Grammar-Augmented Grammars-Future of AI.

Total No of periods: 45

TEXT BOOK:

REFERENCES:
MC9287  NATURAL LANGUAGE PROCESSING  

UNIT I  INTRODUCTION  

UNIT II  INFORMATION RETRIEVAL

UNIT III  TEXT MINING
Categorization – Extraction based Categorization- Clustering- Hierarchical Clustering- Document Classification and routing- finding and organizing answers from Text search – use of categories and clusters for organising retrieval results – Text Categorization and efficient Summarization using Lexical Chains – Pattern Extraction.

UNIT IV  GENERIC ISSUES

UNIT V  APPLICATIONS

TOTAL = 45

TEXT BOOKS:
REFERENCES:


MC9288 SOFTWARE AGENTS

UNIT I AGENTS – OVERVIEW
Agent Definition – Agent Programming Paradigms – Agent Vs Object – Aglet – Mobile Agents – Agent Frameworks – Agent Reasoning.

UNIT II JAVA AGENTS

UNIT III MULTIAGENT SYSTEMS

UNIT IV INTELLIGENT SOFTWARE AGENTS
Interface Agents – Agent Communication Languages – Agent Knowledge Representation – Agent Adaptability – Belief Desire Intension – Mobile Agent Applications.

UNIT V AGENTS AND SECURITY

TOTAL = 45

REFERENCES:

MC9289 SUPPLY CHAIN MANAGEMENT  

UNIT I BUILDING BLOCKS, PERFORMANCE MEASURES, DECISIONS  9  

UNIT II SUPPLY CHAIN INVENTORY MANAGEMENT  9  
Economic Order Quantity Models – Reorder Point Models – Multichelon Inventory Systems.

UNIT III MATHEMATICAL FOUNDATIONS OF SUPPLY CHAIN SOLUTIONS  9  

UNIT IV INTERNET TECHNOLOGIES AND ELECTRONIC COMMERCE IN SCM  9  

UNIT V CASE STUDIES  9  
Digital Equipment Case Study – IBM Case Study.

TOTAL  = 45

REFERENCES:

UNIT I  INTRODUCTION
Introduction to health care information – Health care data quality – Health care information regulations, laws and standards.

UNIT II  HEALTH CARE INFORMATION SYSTEMS
History and evolution of health care information systems – Current and emerging use of clinical information systems – System acquisition – System implementation and support.

UNIT III  INFORMATION TECHNOLOGY
Information architecture and technologies that support health care information systems – Health care information system standards – Security of health care information systems.

UNIT IV  MANAGEMENT OF IT CHALLENGES
Organizing information technology services – IT alignment and strategic planning – IT governance and management.

UNIT V  IT INITIATIVES
Management’s role in major IT initiatives – Assessing and achieving value in health care information systems.

TEXT BOOK:

REFERENCE:
UNIT I MONEY AND CAPITAL MARKETS 8
Trends of savings and financial flow, the Indian Money market, introduction, characteristics of money market, need for money market, major segments of money market, money market instruments and Capital market, introduction, primary market and secondary market, recent capital market reforms, new capital issue, instruments and market participant.

UNIT II STOCK EXCHANGES 10

UNIT III FUNDAMENTAL ANALYSIS 8

UNIT IV TECHNICAL ANALYSIS 10

UNIT V PORTFOLIO ANALYSIS 9
Portfolio theory- Markowitz theory, Sharpe index model, CAPM. Portfolio investment model basic principles, planning, implementation, portfolio objective and types. Portfolio evaluation – measures of return, formula plans, types of formula plans. Risk adjusted measure of performance – Sharpe’s measure, Treynor’s measure and Jensen’s measure.

Total No. of periods: 45

TEXT BOOKS:

REFERENCES:

UNIT I  
OVERVIEW  

UNIT II  
FILE SUBSYSTEM  

UNIT III  
SYSTEM CALLS FOR THE FILE SYSTEM  

UNIT IV  
PROCESSES  

UNIT V  
MEMORY MANAGEMENT AND I/O  

TOTAL = 45

TEXT BOOKS:


REFERENCES:

UNIT I  LEXICAL ANALYSIS  9
Compilers – Analysis of Source Program - Phases of Compiler – Compiler Construction
Tools – Role of a Lexical Analyzer – Specification and Recognition of Tokens – Finite
Automata – Regular Expression to Finite Automation.

UNIT II  SYNTAX ANALYSIS  9
Role of a Parser – Context Free Grammars – Top-Down Parsing – Bottom-Up Parsing –
LEX and YACC.

UNIT III  INTERMEDIATE CODE GENERATION  9
Intermediate Languages – Declaration – Assignment Statements – Boolean Expressions
– Flow Control Statements – Back Patching.

UNIT IV  CODE OPTIMIZATION  9
Introduction to Code Optimization – Principal Sources of Optimization – Basic Blocks

UNIT V  CODE GENERATION  9
Issues in the Design of a Code Generator – Run-Time Storage Management – Next Use
Information – A Simple Code Generator – DAG Representation of Basic Blocks –
Peephole Optimization – Code Generation from DAG.

TOTAL  = 45

TEXT BOOKS:
1. A.V. Aho, Ravi Sethi, J. D. Ullman, “Compilers - Principles, Techniques and

REFERENCES:
UNIT I  INTRODUCTION

UNIT II  SEARCHING TECHNIQUES

UNIT III  KNOWLEDGE REPRESENTATION

UNIT IV  LEARNING

UNIT V  APPLICATIONS

REFERENCES

MC9295 PARALLEL AND DISTRIBUTED COMPUTING

UNIT I INTRODUCTION TO DISTRIBUTED ENVIRONMENT

UNIT II INTRODUCTION TO PARALLEL COMPUTERS AND COMPUTATION
Introduction to Parallelism and computing; Parallel machine model; Parallel programming model; HPC/HTC models.

UNIT III DESIGNING PARALLEL ALGORITHMS
Methodical design; Partitioning; Communication; Agglomeration; Mapping. Design and development of parallel processing systems. Unix workstation clusters. Master slave programming. Multi-threaded programming. Scheduling. Concurrency

UNIT IV FAULT TOLERANCE AND DISTRIBUTED FILE SYSTEMS

UNIT V CASE STUDIES

TOTAL= 45

TEXT BOOKS:
MC9296  SOFT COMPUTING

UNIT I  INTRODUCTION TO SOFT COMPUTING AND NEURAL NETWORKS 9
Evolution of Computing - Soft Computing Constituents – From Conventional AI to Computational Intelligence - Machine Learning Basics

UNIT II  GENETIC ALGORITHMS 9
Introduction to Genetic Algorithms (GA) – Applications of GA in Machine Learning - Machine Learning Approach to Knowledge Acquisition.

UNIT III  NEURAL NETWORKS 9

UNIT IV  FUZZY LOGIC 9

UNIT V  NEURO-FUZZY MODELING 9

TOTAL = 45

TEXT BOOKS:

REFERENCES: