MA2211 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS L T P C
(Common to all branches) 3 1 0 4

OBJECTIVES
The course objective is to develop the skills of the students in the areas of Transforms and Partial Differential Equations. This will be necessary for their effective studies in a large number of engineering subjects like heat conduction, communication systems, electro-optics and electromagnetic theory. The course will also serve as a prerequisite for post graduate and specialized studies and research.

UNIT I FOURIER SERIES 9 + 3

UNIT II FOURIER TRANSFORMS 9 + 3

UNIT III PARTIAL DIFFERENTIAL EQUATIONS 9 + 3
Formation of partial differential equations – Lagrange’s linear equation – Solutions of standard types of first order partial differential equations - Linear partial differential equations of second and higher order with constant coefficients.

UNIT IV APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS 9 + 3
Solutions of one dimensional wave equation – One dimensional equation of heat conduction – Steady state solution of two-dimensional equation of heat conduction (Insulated edges excluded) – Fourier series solutions in cartesian coordinates.
UNIT V Z-TRANSFORMS AND DIFFERENCE EQUATIONS 9 + 3

LECTURES : 45 TUTORIALS : 15 TOTAL : 60 PERIODS

TEXT BOOK:

REFERENCES:
AIM
To understand the concepts of object-oriented programming and master OOP using C++.

UNIT I

UNIT II

UNIT III
Function and class templates - Exception handling – try-catch-throw paradigm – exception specification – terminate and Unexpected functions – Uncaught exception.

UNIT IV

UNIT V

TOTAL: 45 PERIODS

TEXT BOOK:

REFERENCES:

CS 2202 DIGITAL PRINCIPLES AND SYSTEM DESIGN L T P C
(Common to CSE & IT) 3 1 0 4

AIM
To provide an in-depth knowledge of the design of digital circuits and the use of Hardware Description Language in digital system design.

OBJECTIVES
To understand different methods used for the simplification of Boolean functions
To design and implement combinational circuits
To design and implement synchronous sequential circuits
To design and implement asynchronous sequential circuits
To study the fundamentals of VHDL / Verilog HDL

UNIT I BOOLEAN ALGEBRA AND LOGIC GATES 8
Review of binary number systems - Binary arithmetic – Binary codes – Boolean algebra and theorems - Boolean functions – Simplifications of Boolean functions using Karnaugh map and tabulation methods – Logic gates

UNIT II COMBINATIONAL LOGIC 9
Combinational circuits – Analysis and design procedures - Circuits for arithmetic operations - Code conversion – Introduction to Hardware Description Language (HDL)

UNIT III DESIGN WITH MSI DEVICES 8
Decoders and encoders - Multiplexers and demultiplexers - Memory and programmable logic - HDL for combinational circuits

UNIT IV SYNCHRONOUS SEQUENTIAL LOGIC 10
Sequential circuits – Flip flops – Analysis and design procedures - State reduction and state assignment - Shift registers – Counters – HDL for Sequential Circuits.

UNIT V ASYNCHRONOUS SEQUENTIAL LOGIC 10
Analysis and design of asynchronous sequential circuits - Reduction of state and flow tables – Race-free state assignment – Hazards. ASM Chart
TUTORIAL: 15 TOTAL : 60 PERIODS

TEXT BOOK

REFERENCES:

IT 2201 DATA STRUCTURES AND ALGORITHMS L T P C
3 0 0 3

AIM
To master the design and applications of linear, tree, and graph structures. To understand various algorithm design and analysis techniques.

UNIT I LINEAR STRUCTURES 9
Abstract Data Types (ADT) – List ADT – array-based implementation – linked list implementation – cursor-based linked lists – doubly-linked lists – applications of lists – Stack ADT – Queue ADT – circular queue implementation – Applications of stacks and queues

UNIT II TREE STRUCTURES 9
Tree ADT – tree traversals – left child right sibling data structures for general trees – Binary Tree ADT – expression trees – applications of trees – binary search tree ADT – AVL trees – binary heaps

UNIT III HASHING AND SETS 9

UNIT IV GRAPHS 9

UNIT V ALGORITHM DESIGN AND ANALYSIS 9
Introduction to algorithm design techniques: Greedy algorithms, Divide and conquer, Dynamic programming, backtracking, branch and bound, Randomized algorithms – Introduction to algorithm analysis: asymptotic notations, recurrences – Introduction to NP-complete problems

**TOTAL: 45 PERIODS**

**TEXT BOOK:**

**REFERENCES:**

UNIT III

**IT 2202 PRINCIPLES OF COMMUNICATION L T P C**

**3 1 0 4**

**UNIT I FUNDAMENTALS OF ANALOG COMMUNICATION**
Principles of amplitude modulation, AM envelope, frequency spectrum and bandwidth, modulation index and percent modulation, AM Voltage distribution, AM power distribution, Angle modulation - FM and PM waveforms, phase deviation and modulation index, frequency deviation and percent modulation, Frequency analysis of angle modulated waves. Bandwidth requirements for Angle modulated waves.

**UNIT II DIGITAL COMMUNICATION**
Introduction, Shannon limit for information capacity, digital amplitude modulation, frequency shift keying, FSK bit rate and baud, FSK transmitter, BW consideration of FSK, FSK receiver, phase shift keying – binary phase shift keying – QPSK, Quadrature Amplitude modulation, bandwidth efficiency, carrier recovery – squaring loop, Costas loop, DPSK.

UNIT III DIGITAL TRANSMISSION 9

UNIT IV SPREAD SPECTRUM AND MULTIPLE ACCESS TECHNIQUES 9
Introduction, Pseudo-noise sequence, DS spread spectrum with coherent binary PSK, processing gain, FH spread spectrum, multiple access techniques – wireless communication, TDMA and CDMA in wireless communication systems, source coding of speech for wireless communications.

UNIT V SATELLITE AND OPTICAL COMMUNICATION 9

TUTORIAL: 15 TOTAL: 45 +15≈60 PERIODS

TEXT BOOKS:

REFERENCES:
The aim of this course is to create awareness in every engineering graduate about the importance of environment, the effect of technology on the environment and ecological balance and make them sensitive to the environment problems in every professional endeavour that they participates.

OBJECTIVE
At the end of this course the student is expected to understand what constitutes the environment, what are precious resources in the environment, how to conserve these resources, what is the role of a human being in maintaining a clean environment and useful environment for the future generations and how to maintain ecological balance and preserve bio-diversity. The role of government and non-government organization in environment managements.

UNIT I ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY 14
Definition, scope and importance of environment – need for public awareness – 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 (a) forest ecosystem (b) grassland ecosystem (c) desert ecosystem (d) aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) – Introduction to biodiversity definition: genetic, species and ecosystem diversity – biogeographical classification of India – value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values – Biodiversity at global, national and local levels – India as a mega-diversity nation – hot-spots of biodiversity – threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts – endangered and endemic species of India – conservation of biodiversity: In-situ and exsitu conservation of biodiversity. Field study of common plants, insects, birds, Field study of simple ecosystems – pond, river, hill slopes, etc.

UNIT II ENVIRONMENTAL POLLUTION 8
Definition – 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 – soil waste management: causes, effects and control measures of municipal solid wastes – role of

UNIT III NATURAL RESOURCES 10
Forest resources: Use and over-exploitation, deforestation, case studies- timber extraction, mining, dams and their effects on forests and tribal people – Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems – Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies – Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies – Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. case studies – 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. Field study of local area to document environmental assets – river / forest / grassland / hill / mountain.

UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT 7

UNIT V HUMAN POPULATION AND THE ENVIRONMENT 6

TOTAL = 45PERIODS
TEXT BOOKS

REFERENCES

CS 2207 DIGITAL LABORATORY L T P C
(Common to CSE & IT) 0 0 3 2

LIST OF EXPERIMENTS
1. Verification of Boolean theorems using digital logic gates
2. Design and implementation of combinational circuits using basic gates for arbitrary functions, code converters, etc.
3. Design and implementation of 4-bit binary adder / subtractor using basic gates and MSI devices
4. Design and implementation of parity generator / checker using basic gates and MSI devices
5. Design and implementation of magnitude comparator
6. Design and implementation of application using multiplexers/Demultiplexers
7. Design and implementation of Shift registers
8. Design and implementation of Synchronous and Asynchronous counters
9. Simulation of combinational circuits using Hardware Description Language (VHDL/ Verilog HDL software required)
10. Simulation of sequential circuits using HDL (VHDL/ Verilog HDL software required)
List of equipments and components for a batch of 30 students (2 per batch)

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<th>S.NO</th>
<th>Name of equipment/ component</th>
<th>Quantity Reqd</th>
<th>Remarks</th>
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AIM
To develop programming skills in design and implementation of data structures and their applications.
1. Implement singly and doubly linked lists.
2. Represent a polynomial as a linked list and write functions for polynomial addition.
3. Implement stack and use it to convert infix to postfix expression
4. Implement array-based circular queue and use it to simulate a producer-consumer problem.
5. Implement an expression tree. Produce its pre-order, in-order, and post-order traversals.
6. Implement binary search tree.
7. Implement priority queue using heaps
8. Implement hashing techniques.
9. Implement Dijkstra's algorithm using priority queues
10. Implement a backtracking algorithm for Knapsack problem

TOTAL: 45 PERIODS

List of Equipments and components for A Batch of 30 students (1 per batch)
1. SOFTWARE REQUIRED – TURBOC version 3 or GCC version UNIT III
2. OPERATING SYSTEM – WINDOWS 2000 / XP / NT OR LINUX
3. COMPUTERS REQUIRED – 30 Nos. (Minimum Requirement : Pentium III or Pentium IV with 256 RAM and 40 GB harddisk)

CS 2209 OBJECT-ORIENTED PROGRAMMING LAB L T P C
(Common to CSE & IT) 0 0 3 2
1. Design C++ classes with static members, methods with default arguments, friend functions. (For example, design matrix and vector classes with static allocation, and a friend function to do matrix-vector multiplication)
2. Implement complex number class with necessary operator overloading and type conversions such as integer to complex, double to complex, complex to double etc.
3. Implement Matrix class with dynamic memory allocation and necessary methods. Give proper constructor, destructor, copy constructor, and overloading of assignment operator.
4. Overload the new and delete operators to provide custom dynamic allocation of memory.
5. Develop a template of linked-list class and its methods.
6. Develop templates of standard sorting algorithms such as bubble sort, insertion sort, merge sort, and quick sort.
7. Design stack and queue classes with necessary exception handling.
8. Define Point class and an Arc class. Define a Graph class which represents graph as a collection of Point objects and Arc objects. Write a method to find a minimum cost spanning tree in a graph.
9. Develop with suitable hierarchy, classes for Point, Shape, Rectangle, Square, Circle, Ellipse, Triangle, Polygon, etc. Design a simple test application to demonstrate dynamic polymorphism and RTTI.
10. Write a C++ program that randomly generates complex numbers (use previously designed Complex class) and writes them two per line in a file along with an operator (+, -, *, or /). The numbers are written to file in the format (a + ib). Write another program to read one line at a time from this file, perform the corresponding operation on the two complex numbers read, and write the result to another file (one per line).

**List of Equipments and software for a batch of 30 students**
1. PC – 30 nos.
   - Processor – 2.0 GHz or higher
   - RAM – 256 MB or higher
   - Hard disk – 20 GB or higher
   - OS- Windows 2000/ Windows XP/ NT
2. Software – Turbo C (freeware) – to be installed in all PC’s.
SEMESTER V
NUMERICAL METHODS

UNIT I  SOLUTION OF EQUATIONS AND EIGEN VALUE PROBLEMS

UNIT II  INTERPOLATION AND APPROXIMATION
Lagrangian Polynomials – Divided Differences – Interpolating with a Cubic Spline – Newton’s Forward and Backward Difference Formulas.

UNIT III  NUMERICAL DIFFERENTIATION AND INTEGRATION

UNIT IV  INITIAL VALUE PROBLEMS FOR ORDINARY DIFFERENTIAL EQUATIONS

UNIT V  BOUNDARY VALUE PROBLEMS IN ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS

TEXT BOOKS

REFERENCES
UNIT I      CLASSIFICATION OF SIGNALS AND SYSTEMS

UNIT II      ANALYSIS OF CT SIGNALS
Fourier series analysis – Spectrum of CT signals – Fourier transform and laplace transform in signal analysis.

UNIT III      LTI – CT SYSTEMS

UNIT IV      ANALYSIS OF DT SIGNALS

UNIT V      LTI – DT SYSTEMS

Total: 45

TEXT BOOK

REFERENCES
EMBEDDED SYSTEMS

UNIT I  
FUNDAMENTALS OF EMBEDDED SYSTEMS 9
Definition and classification – Overview of processors and hardware units in an embedded system – Software embedded into the system – Exemplary embedded systems – Embedded Systems on a Chip (SOC) and the use of VLSI designed circuits.

UNIT II  
DEVICES AND BUSES FOR DEVICES NETWORK 9

UNIT III  
PROGRAMMING CONCEPTS AND EMBEDDED PROGRAMMING IN C, C++ 9
Programming in Assembly Language (ALP) vs high level language – C program elements – Macros and functions – Use of pointers – NULL pointers – Use of function calls – Multiple function calls in a cyclic order in the main function pointers – Function queues and interrupt service routines – Queue pointers – Concepts of embedded programming in C++ – Objected oriented programming – Embedded programming in C++ – C program compilers – Cross compiler – Optimization of memory codes.

UNIT IV  
REAL TIME OPERATING SYSTEMS – PART 1 9

REAL TIME OPERATING SYSTEMS : RTOS task scheduling models – Handling of task scheduling and latency and deadlines as performance metrics – Co-operative round robin scheduling – Cyclic scheduling with time slicing (Rate monotonics co-operative scheduling) – Preemptive scheduling model strategy by a scheduler – Critical section service by a preemptive scheduler – Fixed (Static) real time scheduling of tasks.

INTER PROCESS COMMUNICATION AND SYNCHRONISATION:  Shared Data problem – Use of semaphore(s) – Priority inversion problem and deadlock situations – Inter process communications using signals – Semaphore flag or mutex as resource key – Message queues – Mailboxes – Pipes – Virtual (Logical) sockets – Remote Procedure Calls (RPCs).
UNIT V   REAL TIME OPERATING SYSTEMS – PART 2

Study of micro C/OS II or VX works or any other popular RTOS – RTOS system level functions – Task service functions – Time delay functions – Memory allocation related functions – Semaphore related functions – Mailbox related functions – Queue related functions – Case studies of programming with RTOS – Understanding case definition – Multiple tasks and their functions – Creating a list of tasks – Functions and IPCS – Exemplary coding steps.

L: 45 T: 15 Total: 60

TEXT BOOKS

REFERENCES
UNIT I  FUNDAMENTALS  8
An overview of object oriented systems development – Object basics – Object oriented systems development life cycle.

UNIT II  OBJECT ORIENTED METHODOLOGIES  12

UNIT III  OBJECT ORIENTED ANALYSIS  9
Identifying use cases – Object analysis – Classification – Identifying object relationships – Attributes and methods.

UNIT IV  OBJECT ORIENTED DESIGN  8

UNIT V  SOFTWARE QUALITY AND USABILITY  8
Designing interface objects – Software quality assurance – System usability – Measuring user satisfaction.

Total: 45

TEXT BOOKS

REFERENCES
COMPUTER NETWORKS

UNIT I DATA COMMUNICATIONS 8

UNIT II DATA LINK LAYER 10

UNIT III NETWORK LAYER 10

UNIT IV TRANSPORT LAYER 9

UNIT V APPLICATION LAYER 8

Total: 45

TEXT BOOKS

REFERENCES
INFORMATION CODING TECHNIQUES

UNIT I  INFORMATION ENTROPY FUNDAMENTALS  9
Uncertainty - Information and entropy – Source coding theorem – Huffman coding – Shannon Fano coding – Discrete memory less channels – Channel capacity – Channel coding theorem – Channel capacity theorem.

UNIT II  DATA AND VOICE CODING  9

UNIT III  ERROR CONTROL CODING  9
Linear block codes – Syndrome decoding – Minimum distance consideration – Cyclic codes – Generator polynomial – Parity check polynomial – Encoder for cyclic codes – Calculation of syndrome – Convolutional codes.

UNIT IV  COMPRESSION TECHNIQUES  9

UNIT V  AUDIO AND VIDEO CODING  9

TEXT BOOKS

REFERENCES
Prepare the following documents for two or three of the experiments listed below and develop the software engineering methodology.

1. Program Analysis and Project Planning.
   Thorough study of the problem – Identify project scope, Objectives, Infrastructure.

2. Software requirement Analysis
   Describe the individual Phases / Modules of the project, Identify deliverables.

3. Data Modeling
   Use work products – Data dictionary, Use diagrams and activity diagrams, build and test class diagrams, Sequence diagrams and add interface to class diagrams.

4. Software Development and Debugging

5. Software Testing
   Prepare test plan, perform validation testing, Coverage analysis, memory leaks, develop test case hierarchy, Site check and Site monitor.

SUGGESTED LIST OF APPLICATIONS

Student Marks Analyzing System
Quiz System
Online Ticket Reservation System
Payroll System
Course Registration System
Expert Systems
ATM Systems
Stock Maintenance
Real - Time Scheduler, Remote Procedure Call Implementation

Total: 45
LIST OF EXPERIMENTS
(All the Programs to be written using C)

1. Write a socket Program for Echo / Ping / Talk commands.
2. Create a socket (TCP) between two computers and enable file transfer between them.
3. Write a program to implement Remote Command Execution (Two M/Cs must be used)
4. Write a program to implement CRC and Hamming code for error handling.
5. Write a code simulating Sliding Window Protocols.
7. Write a program for File Transfer in client–server architecture using following methods.
   a. USING RS232C
   b. TCP/IP
8. Perform a case study about the different routing algorithms to select the network path with its optimum and economical during data transfer.
   a. Shortest path routing
   b. Flooding
   c. Link State
   d. Hierarchical
9 and 10 Study of Network Simulators like NS2 / Glomosim / OPNET.

Total: 45
COMMUNICATION AND SOFT SKILLS LABORATORY

L  T  P  C
1  0  3  2

(Common to All Branches of III Year B.E./B.Tech students of Anna University Tiruchirappalli and affiliated colleges)

The aim of the course is two-fold: to enable the students to develop communication skills in the language laboratory and to arrange discussions for developing soft skills in the lab and/or the classroom. Each lab session shall last for three periods.

List of activities that are to be carried out: (15 sessions x 3 periods = 45)

Lab session # 1: Listening and speaking practice exercises with communicative functions. Learning material: the ACD of Spoken English: A Foundation Course for Speakers of Indian Languages (Orient Longman, 2008)

Lab session # 2: Practice with more advanced communicative functions. Learning material: the ACD of Spoken English: A Foundation Course for Speakers of Indian Languages (Orient Longman, 2008)

Lab session # 3: Pronunciation exercises with Oxford Advanced Learners’ Dictionary of Current English or any other standard Dictionary

Lab session # 4: Making an oral presentation in English. Learning Material: Professional Presentations VCD (Cambridge University Press)

Lab session # 5: Listening to telephone conversations in English and completing the tasks. Learning material: Essential Telephoning in English ACD (Cambridge University Press)

Lab session # 6: Giving an exposure to and practice with model group discussion and interviews. Learning material: How to Prepare for Group Discussion and Interview Audio Cassette (McGraw-Hill)

Lab session # 7: Giving insights into the format and the task types in the IELTS (International English Language Testing System). Learning Material: Objective IELTS, Intermediate Level (CUP)

Lab session # 8: Understanding the format and the task types in the TOEFL (Test of English as a Foreign Language). Learning Material: Understanding the TOEFL (Educational Testing Services, Princeton)
Lab session # 9: Administering the BEC (Business English Certificate) Diagnostic Test. Learning Material: BEC Practice Materials (British Council, Chennai)

Lab session # 10: Completing the steps involved in Career, Life Planning and Change Management. Learning Material: Developing Soft Skills (Pearson Education)

Lab session # 11: Setting goals and objectives exercises. Learning Material: Developing Soft Skills (Pearson Education)

Lab session # 12: Prioritizing and time planning exercises. Learning Material: Managing Time Multimedia Program CD

Lab session # 13: Taking a Personality Typing/ Psychometric Test Learning Material: 200 Psychometric Test prepared by the CUIC, Anna University Chennai

Lab session # 14: Critical and creative thinking exercises.

Lab session # 15: Improving body language and cross-cultural communication with pictures. Learning material: Body Language (S. Chand and Co.)

For a detailed plan, refer to the topics given below;

UNIT I LISTENING AND SPEAKING PRACTICE IN COMMUNICATIVE FUNCTIONS

UNIT II SPEAKING APPLICATIONS

UNIT III UNDERSTANDING AND PREPARING FOR INTERNATIONAL ENGLISH LANGUAGE EXAMINATIONS
International English Language Testing System (IELTS) – Test of English as a Foreign Language (TOEFL) – Business English Certificate (BEC)

UNIT IV SOFT SKILLS (1)
Preparing for and dealing with change – Motivation, goal-setting and self-esteem – Managing time and stress – Career and life planning – Team work – Leadership traits.

UNIT V SOFT SKILLS (2)
Multiple intelligences – Learning styles and personality typing – Critical and creative Thinking – People, cultures and self – intercultural communication.

RESOURCES

5. International English Language Testing System Practice Tests, CUP
7. Understanding the TOEFL. Educational Testing Services, Princeton, US
8. Interactive Multimedia Programs on Managing Time and Stress
SEMESTER VII

WEB TECHNOLOGY

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UNIT I  FUNDAMENTALS  8

UNIT II  DYNAMIC HTML  9

UNIT III  MULTIMEDIA  9

UNIT IV  DATABASE - ASP - XML  10

UNIT V  SERVLETS AND JSP  9

L: 45 T: 15 Total: 60

TEXT BOOKS
REFERENCES

MIDDLEWARE TECHNOLOGIES

UNIT I CLIENT / SERVER CONCEPTS

UNIT II EJB ARCHITECTURE
EJB – EJB architecture – Overview of EJB software architecture – View of EJB – Conversation – Building and deploying EJB – Roles in EJB.

UNIT III EJB APPLICATIONS
EJB session beans – EJB entity beans – EJB clients – EJB deployment – Building an application with EJB.

UNIT IV CORBA

UNIT V COM

Total: 45

TEXT BOOKS
REFERENCES

MOBILE COMPUTING

UNIT I WIRELESS COMMUNICATION FUNDAMENTALS 9

UNIT II TELECOMMUNICATION NETWORKS 11

UNIT III WIRELESS LAN 9

UNIT IV MOBILE NETWORK LAYER 9

UNIT V TRANSPORT AND APPLICATION LAYERS 7
Traditional TCP – Classical TCP improvements – WAP – WAP 2.0.

Total: 45

TEXT BOOKS

REFERENCES

GRAPHICS AND MULTIMEDIA

UNIT I OUTPUT PRIMITIVES
Introduction – Line – Curve and ellipse drawing algorithms – Attributes – Two dimensional geometric transformations – Two dimensional clipping and viewing – Input techniques.

UNIT II THREE–DIMENSIONAL CONCEPTS
Three dimensional object representations – Three dimensional geometric and modeling transformations – Three dimensional viewing – Hidden surface elimination – Color models – Animation.

UNIT III MULTIMEDIA SYSTEMS DESIGN

UNIT IV MULTIMEDIA FILE HANDLING

UNIT V HYPERMEDIA

L: 45 T: 15 Total: 60

TEXT BOOKS
REFERENCES

SOFTWARE PROJECT MANAGEMENT

UNIT I FUNDAMENTALS
Conventional software management – Evolution of software economics – Improving software economics – Conventional versus modern software project management.

UNIT II SOFTWARE MANAGEMENT PROCESS FRAMEWORK
Lifecycle phases – Artifacts of the process – Model based software architectures – Workflows of the process – Checkpoints of the process.

UNIT III SOFTWARE MANAGEMENT DISCIPLINES
Iterative process planning – Organisation and responsibilities – Process automation – Process control and process instrumentation – Tailoring the process.

UNIT IV MANAGED AND OPTIMIZED PROCESS

UNIT V CASE STUDIES
COCOMO cost estimation model – Change metrics – CCPDS-R.

Total: 45

TEXT BOOKS

REFERENCES

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UNIT I BASICS OF C#

UNIT II OBJECT ORIENTED ASPECTS OF C#

UNIT III APPLICATION DEVELOPMENT ON .NET
Building windows applications – Accessing data with ADO.NET.

UNIT IV WEB BASED APPLICATION DEVELOPMENT ON .NET
Programming web applications with web forms – Programming web services.

UNIT V THE CLR AND THE .NET FRAMEWORK

Total: 45

MIDDLEWARE TECHNOLOGIES LABORATORY

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LIST OF EXPERIMENTS
1. Create a distributed application to download various files from various servers using RMI
2. Create a Java Bean to draw various graphical shapes and display it using or without using BDK
3. Develop an Enterprise Java Bean for Banking operations
4. Develop an Enterprise Java Bean for Library operations
5. Create an Active–X control for File operations
6. Develop a component for converting the currency values using COM / .NET
7. Develop a component for encryption and decryption using COM / .NET
8. Develop a component for retrieving information from message box using DCOM / .NET
9. Develop a middleware component for retrieving Stock Market Exchange information using CORBA
10. Develop a middleware component for retrieving Weather Forecast information using CORBA

GRAPHICS AND MULTIMEDIA LABORATORY

LIST OF EXPERIMENTS
1. To implement Bresenham’s algorithms for line, circle and ellipse drawing
2. To perform 2D Transformations such as translation, rotation, scaling, reflection and sharing.
3. To implement Cohen–Sutherland 2D clipping and window–viewport mapping
4. To perform 3D Transformations such as translation, rotation and scaling.
5. To visualize projections of 3D images and Hidden Surface Elimination.
6. To convert between color models.
7. To implement text compression algorithm
8. To implement image compression algorithm
9. To perform animation using any Animation software
10. To perform basic operations on image using any image editing software

SOFTWARE DEVELOPMENT LABORATORY

Take up a software development project of your choice and systematically carry–out all the phases of SDLC. Do the necessary documentation at each stage. Use appropriate case tools.

The project to be carried out may be in domains such as

1. Online stock trading
2. Airport management
3. Bio - Informatics
4. Hospital management
5. Internet based multi user online games
6. Programmer's editor with syntax based coloring
7. Library of computer security related algorithms