### SEMESTER – III

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**TOTAL** 24

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BIT003 is equivalent to BIT206 of the earlier year  
BITL01 is equivalent to BIT205 of the earlier year

### SEMESTER – IV

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**TOTAL** 22

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BIT002 is equivalent to BIT208 of the earlier year  
BIT004 is equivalent to BIT202 of the earlier year  
BECL05 is equivalent to BEC232 of the earlier year  
BITL02 is equivalent to BIT210 of the earlier year
(Applicable to the students admitted from the academic year 2010–2011 onwards)

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BIT005 is equivalent to BIT309 of the earlier year
BIT006 is equivalent to BIT307 of the earlier year
BIT008 is equivalent to BIT302 of the earlier year
BCS015 is equivalent to BCS304 of the earlier year
BITL03 is equivalent to BIT313 of the earlier year
BITL04 is equivalent to BIT315 of the earlier year

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BIT011 is equivalent to BIT304 of the earlier year
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BIT013 is equivalent to BIT303 of the earlier year
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BITL06 is equivalent to BIT312 of the earlier year
(Applicable to the students admitted from the academic year 2010–2011 onwards)

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BIT015 is equivalent to BIT405 of the earlier year
BIT017 is equivalent to BIT403 of the earlier year
BITL07 is equivalent to BIT413 of the earlier year

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**TOTAL** 22

**GRAND TOTAL** 180

BIT481 is equivalent to BIT407 of the earlier year
(Applicable to the students admitted from the academic year 2010–2011 onwards)

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BITE65 is equivalent to BITE08 of the earlier year

I YEAR       - (I & II Sem )    = 45
II YEAR      - (III & IV Sem )  = 46
III YEAR     - (V & VI Sem )    = 44
IV YEAR      - (VII & VII Sem)  = 45

TOTAL        = 180
Unit I  
Logic: Statements – Truth table – Connectives – Normal Forms – Predicate Calculus – Inference

Unit II  

Unit III  
Groups: Semi groups – Monoids- Groups – Permutation groups – Cosets – Language’s Theorem – Group Homomorphism – Kernel – Rings and Fields (Definitions and Examples only)

Unit IV  

Unit V  
Graphs: Introduction to Graphs – Graph terminology – Representation of graphs – Graph Isomorphism Connectivity – Euler and Hamilton Paths.

Total Number of Periods: 60

Text Book:
Sections 1-2.1 to 1-2.4; 1-2.6 to 1-2.14; 1-3.1 to 1-3.5; 1-4.1 to 1-4.3; 1-5.1 to 1-5.5;
1-6.4 to 1-6.5 for Logic, Sections 3-1.1 to 3.2.3

Reference Books:
Unit I


Unit II

**Operational Amplifier and Applications:** Ideal Operational amplifier – Op-Amp Characteristics-Applications- Adder, Subtractor, V to I & I to V Convertors, Multipliers & Divider, Differentiator and Integrator, Inverting & Non-Inverting amplifiers, Buffer.


Unit III

**Boolean algebra and Simplification:** Minimum and maximum expression - Sum of Products and product of sums- Minimization of Boolean functions-Karnaugh map-Quine Mc Cluskey Method-Prime implications and Essential Prime Implicants.

**Logic Gates:** Logic gates of different families- Universal Gates-Circuits characteristics and comparisons-Tristate gates-Multilevel gates Networks-NAND and NOR Implementation-Use of alternate gate symbols- Mixed logic and Polarity indication-Multiple output Networks.

Unit IV


Unit V

**State Machines:** State minimization-State assignment-Incompletely specified state Machines- Fundamental mode and pulse mode sequential circuits-Hazards, Essential Hazards, Design of hazard free Networks.

**Total Number of Periods:** 60
**Text Books:**
1. David A. Bell “Electronic Devices and Circuits” – Prentice Hall of India.

**Reference Books:**
3. Morris Mano, “Digital logic and computer design”, Prentice Hall of India
7. Malvino & Leach “Digital Principles and Design” TMH
Unit I

Introduction: Data types-Number systems-Fixed-point representation, floating point representation - Error detection codes.

Unit II

CPU Organization: Introduction – stack organization – Instruction formats – Addressing modes- Data Transfer and manipulation – program control
RISC: Pipeline and vector processor: Parallel processing – pipelining – Arithmetic pipeline – instruction pipeline – RISC pipeline – vector processing – array processors

Unit III

Computer Arithmetic: Introduction – Addition and subtraction- Multiplication algorithms – Booth multiplication – Algorithm – Division algorithm

Unit IV


Unit V


Total Number of Periods: 45

Text Book:


Reference Books:

Unit I

**Introduction:** Programming methodologies – Comparison – Object Oriented concepts – Basics of C++ environment.

Unit II

**Classes:** Definition – Data members – Function members – Access specifiers – Constructor – Default constructors – Copy constructors – Destructors – Static members – This pointer – Constant members – Free store operators – Control statements

Unit III

**Inheritance and polymorphism:** Overloading operators – Functions – Friends – Class derivation – Virtual functions – Abstract base classes – Multiple inheritances. Microsoft Foundation class Libraries.

Unit IV

**Templates:** Class templates – Function templates – Exception handling – Streams.

Unit V

**Java programming:** Java environment – Classes – Definition – Fields – Methods – Object creation – Constructors – Overloading methods – Static members – This keyword – Nested classes – Extending classes – Inheritance – Member accessibility – Overriding methods – Abstract classes – Interfaces.

**Total Number of Periods:** 60

**Text Books:**

**Reference Books :**
Unit I
**Linear Data Structures:** Stacks, Queues & Lists Implementation and Applications, Singly linked list-Doubly linked lists.

Unit II
**Nonlinear Data Structures:** Trees - Binary Trees - Binary Search Tree - Tree Traversals - AVL Trees

Unit III
**Algorithm Analysis:** Sorting and searching -space complexity-time complexity-Big Oh-Binary Searching-analysis-Quick sort-Heap sort-Merge sort-Analysis

Unit IV
**Graph algorithms:** Graph operations-DFS-BFS-Minimum cost spanning tree-Krushkal's algorithm-Prim's Algorithm

Unit V
**Algorithm Design Methods:** Greedy method - Shortest path - Divide and Conquer -Matrix multiplication-Dynamic programming-Back tracking -Traveling Sales person problem.

Total Number of Periods: 60

**Text Book:**

**Reference Books:**
1) Weiss Mark Allen, "Data Structures and Algorithm Analysis in C", Pearson - 1997
Unit I

**Introduction:** Information Age; Responses – Information system; Infrastructure and Architecture – IT support for organizations; Types of information systems – Managing IT – Basic of computer hardware and software for IT infrastructure; Data bases; logic Data Models

Unit II

**IT for Telecom Networks:** Telecommunication system: Networks: Software; Network processing strategic; Telecom applications; Internet and Intranet; operation and services provided; WWW; Intranets.

Unit III

**IT Applications:** Information system; GIS EDI and EFT; Extranets; Implementation; Data, Knowledge and decision support; Decision making- and support systems; Data visualization technologies; Knowledge Management- and Discovery and analysis.

Unit IV

**Intelligent systems and e-commerce:** AI and IS: Expert systems; Intelligent gents; Virtual reality; Ethical and global issues; E-commerce: Business applications: Market research and customer support Infrastructure, payments and other support.

Unit V

**Information Technology and systems:** Planning and Management: Principles for IS planning: Role of IS and user departments; Resources; IT architecture; Centralized and no centralized; Client/server; End user computing architecture; Managing IS; Organizational structure; IS vulnerability; protection; Security; Network Protection and Firewalls Risk management and cost-Benefit analysis

**Total Number of Periods:** 45

**Text Book:**

1. Introduction to IT, E. Turban et al., John Wiley and sons, IC, 2000.

**Reference Books:**

2. IT, the breaking wave, Dennis, P., Curtin et al., Tata McGraw-Hill, 1999.
1. Implementing Stacks and Queues
2. Implementation of singly Linked List
3. Implementation of Doubly Linked List
4. Polynomial Manipulations.
5. Sorting
   a. Insertion sort
   b. Merge Sort
   c. Quick Sort
   d. Selection Sort
   e. Heap Sort.
6. Searching:
   a. Linear search
   b. Binary search.
9. Solving 8 Queens Problem using Backtracking Method
1. PN Junction diode – VI characteristics & Zener diode – Regulator
2. Rectifiers – HWR, FWR
3. CE Transistor Input-Output Characteristics
4. RC Coupled amplifier frequency response with and without feedback
5. Operational Amplifier – Applications
   a. Adder
   b. Subtractor
   c. Inverting amplifier
   d. Non Inverting Amplifier
   e. Buffer
   f. Integrator
6. Wein Bridge Oscillator
8. Study of Logic gates, Universal Gates
9. Adder & Subtractor
10. Any Combinational Circuit
11. Study of Flip Flops
12. Counters
Unit I
Probability Concepts – Baye’s Theorem - Random Variables – Moments – Moment Generating Functions–Chebyshev’s inequality- Functions of Random Variables – Marginal and Conditional Distributions

Unit II

Unit III

Unit IV
Auto –Correlation – Auto – Covariance- Cross- Correlation – Cross covariance – Stationary Process

Unit V
Spectral Density – Cross Spectral Density – Applications to Linear Systems with Random inputs and outputs

Total Number of Periods: 60

Text Book:

Reference Books:
Unit I


Unit II

Peripheral Interfacing : Interfacing serial I/O(8251)-parallel I/O(8255) –keyboard and display controller (8279)-ADC/DAC Interfacing-Timer (8253).Programmable Interrupt Controller (8259),DMA controller ,Applications of 8085.

Unit III


Unit IV


Unit V

8051 Programming And Applications: 8051 Instruction set – Addressing Modes –Assembly Language Programming -8051 interfacing LCD, ADC, sensors ,Stepper motors ,Motors, keyboard and DAC

Total Number of Periods:

45

Text Books:

1. Ramesh S Gaoankar, microprocessor Architecture , programming and application with 8085, 4th edition ,penram international publishing , New Delhi ,2000.(unit I,II)
3. Mohammed ali Mazidi and Janice Gillispie Mazidi , the 8051 Microcontroller and embedded systems ,Pearson education Asia ,New Delhi,2003.(Unit IV,V)

References Books:

UNIT I

UNIT II

UNIT III
File and system structure – overall system structure – file transaction – data dictionary – indexing and hashing basic concepts and B+ tree Indices - static and dynamic hash functions

UNIT IV
Recovery and atomicity-Failures Classification and types – Transaction model and Log based recovery. Schedules-Serial and Non Serial types-Serialization of schedules and views-locks based protocols –time based protocols, Validation techniques.

UNIT V

Total Number of Periods: 45

Text Book:

Reference Books:
Unit I

**Analog Modulation:** Amplitude Modulation – AM, DSBSC, SSBSC, VSB – PSD, modulators and demodulators – Angle modulation – PM and FM – PSD, modulators and demodulators – Superheterodyne receivers

Unit II

**Digitization:** Low pass sampling theorem – Quantisation - PAM – Line coding - PCM, DPCM, DM, ADPCM and ADM, Channel Vocoder. – Time Division Multiplexing, frequency Division Multiplexing

Unit III

**Digital Modulation And Transmission:** Phase shift keying – BPSK, DPSK, QPSK - Principles of M-ary signaling M-ary PSK & QAM – Comparison, ISI – Pulse shaping – Duo binary encoding - Cosine filters – Eye pattern, equalizers

Unit IV

**Information Theory And Coding:** Channel capacity – Shannon-Hartley law – Shannon’s limit- Error control Codes – Cyclic codes, Syndrome calculation – Convolutional Coding, Sequential and Viterbi decoding

Unit V

**Spread Spectrum And Multiple Access:** PN sequences – properties – m-sequence –DSSS – Processing gain, Jamming – FHSS –Synchronisation and tracking - Multiple Access – FDMA, TDMA, CDMA

**Total Number of Periods:** 45

**Text Books:**

2. S. Haykin “Digital Communications” John Wiley 2005

**References Books:**

2. H P Hsu, Schaum Outline Series - “Analog and Digital Communications” TMH 2006
UNIT I 900

UNIT II 900
Assemblers: Elements of assembly language programming, simple assembly scheme, pass structure of Assemblers, Design of two pass Assemblers. Macros and Macro Processor: Macro definition and call, Macro expansion, nested Macro calls, Advanced Macro facilities, Design of a Macro preprocessor

UNIT III 900
Compilers and Interpreters: Aspects of Compilation, Memory allocation, Compilation of expressions, Compilation of control structures, Code optimization, Interpreters Linkers: Relocation and Linking concept, design of a Linker, Self Relocating Programs

UNIT IV 900

UNIT V 900

Total Number of Periods: 45

Text Book:

Reference Books:
UNIT – I
Introduction To Java: Java Features - Benefits - Applications - Data Types Expressions - Conditional and iterations executions
References - Arrays - Garbage Collection - Run time Environment.

UNIT – II
Java Object Model: Classes - variables - methods - constructors - Access specifiers - Inheritance - Interfaces - packages - Strings - Dynamic Loading

UNIT – III
Exceptions And Threads: Exception and errors - Exception classes - Runtime Exception - Uncompact Exception - Finally block - User defined Exceptions. Creating Threads - Controlling Threads - Multithreading - Thread properties - Thread Groups

UNIT-IV
JAVA I/O: Java Streams - File class - Serialization - Applets.

UNIT-V

Total Number of Periods: 60

Text Book:


Reference Books:

8085 Microprocessor:

1. Assembly language programming for single byte, multibyte, addition and subtraction
2. Assembly language programming for Multiplication and division
3. Searching and Sorting
4. Square and Square root.

Interfacing:

5. Wave Form generation using 8255 PPI
6. Traffic light controller
7. Stepper Motor controller
8. Keyboard Interfacing
9. Matrix display

8086 Microprocessor:

10. Average of N numbers
11. Block Movement of Data
12. Multi byte Addition
13. Maximum of given series
14. Square of a given number
JAVA

1. Reversing of a given string
2. Stack Operation
3. Arithmetic operation using Applet
4. Menu Bar
5. Scroll Bar
6. File Handling
7. Interface
8. Database Connectivity
9. Exception Handling

DBMS

1. Implementation of DDL,DML & TCL Commands
2. Factorial using function
3. Fibonacci using procedure
4. Cursor
5. Triggers
6. Report generation using Oracle
7. Database Security
UNIT I


UNIT II

Functions and Events: Displaying Information-Determinate Loops-Indeterminate Loops-Conditionals-Built-In Functions-Functions and Procedures- Lists-Arrays-Sorting and Searching-Records-Control Arrays-Combo Boxes-Grid Control-Projects with Multiple forms-Do Events and Sub Main-Error Trapping.

UNIT III


UNIT IV


UNIT V


Total Number of Periods: 45

Text Books:


Reference Books:

Unit 1 Modeling Techniques: Object model - Basic concepts - Association - Aggregation - Inheritance - Interface - Polymorphism Dynamic Model, Functional Model


Unit V Testing: Testing Introduction – Unit level testing – Integration testing – Qualification testing – regression testing – test cases – test runners

Total Number of Periods: 45

Text Books:
1. ATUL Kahate, Object Oriented Analysis & Design ,Tata McGraw Hill ,New Delhi,2004
2. Wendy Boggs & Michael Boggs-Mastering UML with Rational Rose ,BPB Publications
3. John Thomas , Mathew young -Java & J2EE Testing patterns ,Wiley dream tech India Pvt Ltd

Reference Books:
### Unit I


### Unit II


### Unit III


### Unit IV

Transport layer – Services-Internet transport protocols-TCP-UDP-ATM Layer Protocols

### Unit V

Application Layer-Network Security-DNS-SNMP-WWW-Multimedia

**Total Number of Periods:**

60

**Text Books:**


**Reference Books:**

UNIT I


UNIT II


UNIT III


UNIT IV


UNIT V


Total Number of Periods: 45

Text Book:

Reference Books:
Unit I


Unit II


Unit III

Geometry And Line Generation: Introduction , lines, line segments , perpendicular lines, distance between a point and a line, vectors , pixels and frame buffers , vector generation , Bresenham’s Algorithm, Antialiasing of lines – Thick line segments – character generation

Graphics Primitives: Introduction , display devices, primitive operations, the display – file interpreter-normalized device co-ordinates, Display-file structure, Display–file algorithms – display contro, text

Unit IV


Unit V


Total Number of Periods: 60

Text Books:

Reference Books:
Unit I 900

Unit II 900
Recognition Machine - Error Recovery - A Typical Lexical Analyzer Generator -Parsing - Top-down Parsing – Principles

Unit III 900
Top-down Parsing Implementation - Bottom-up Parsing - LR Parsers - Implementation - Error Recovery - Parser Generator

Unit IV 900
Intermediate Languages - Declarations - Flow Control Statements - Procedure Calls - Symbol Table

Unit V 900
Introduction to Code Optimization - Code Generation - Issues in design of Code Generator - Run Time Storage Management - Approaches to Compiler Development

Total Number of Periods: 45

Text Book:

Reference Books:
Prepare the following documents for each experiment and develop the software using software engineering methodology.
1. Problem 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 case 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.

List of experiments
1. Course Registration System
2. Quiz System
3. Online ticket reservation system
4. Student marks analyzing system
5. ATM system
6. Platform assignment system for the trains in a railway station
7. Stock maintenance
8. E-mail Client system.

Software Required:

Case Tools: Rational Suite, Win runner, Empirix
Languages: C/C++/JDK 1.3, JSDK, INTERNET EXPLORER, UML
Front End: VB, VC++, Developer 2000
Back End: Oracle, MS-Access, SQL
1. **VISUAL BASIC**

1. Adding menus to forms
2. Creating dialog boxes with various options
3. MDI applications
4. Writing code for various keyboard and mouse events
5. OLE container control
6. Data access through Data control and DAO.
7. Active X control
8. Active X Document
9. Active X DLL

2. **VISUAL C++**

1. Creating applications with App wizard
2. Working with MFC
3. Exception handling
4. Loading - Editing and - Adding resources - Linking resources to applications
5. Drawing bitmaps
6. Threads
7. OLE
8. Graph Applications
Unit I


Unit – II


Unit III


Unit IV


Unit V


Total Number of Periods: 45

Text Book:


Reference Books:

2. L.M.Prasad, Management Principles , Sultan Chand & Sons
Unit I

Unit II

Unit III
Basic Software Tools – Text Editing and Word processing tools – Painting and Drawing tools- 3D modeling and animation tools – Image editing tools – Sound editing tools – Animation, Video and Digital movie tools – Multimedia Authoring tools – Types of Authoring tools – Card based and page based authoring tools – Icon and object based Authoring tools – Time based Authoring tools

Unit IV

Unit V

Total Number of Periods: 45

Text Books:
1. Tay Vaughan- Multimedia Making it work- Fifth edition – TMH ,NewDelhi 2002. (Unit 1,2 & 3)
2. Fred Halsall – Multimedia communications – Fourth Indian reprint , 2004 (unit 4 & 5)
Unit I


Unit II


Unit III

**CORBA:** Java Programming with CORBA - Overview of Java ORBs - First Java ORB Application - OMG IDL to Java Mapping - ORB Run-Time System - Discovering Services (Naming, Trading)

Unit IV

**EJB:** Introduction – Developing an EJB component using entity Beans – Message driven beans – Active X controls – Active X DLLs – Active X Exe

Unit V

**Distributed Object Database Management:** Object model features - Fundamental object management issues - DOM architectures - Object caching - Object clustering - Object migration- Query processing in distributed object DBMS - Transaction management in distributed object DBMS.

Total Number of Periods:

45

Text Books:


Reference Books:

4) James McGovern, Rahim Adatea- J2EE 1.4 Bible- Wiley- Dreamtech India Pvt ltd,2005
Unit I

Unit II
Introduction to C# - Overview of C# - Literals – Variables – Data Types – Operators – Expressions – Branching – Looping

Unit III
Methods in C# - classes and objects – inheritance and polymorphism – operator overloading – Events – Console I/O operators

Unit IV

Unit V

Total Number of Periods: 60

Text Books:

Reference Book:
Unit I


Unit II

Data preprocessing: Data Cleaning -Missing Values-Noisy Data-Inconsistent Data- Data Integration and Transformation-Data Reduction-Data Cube Aggregation-Dimensionality Reduction-Data Compression-Numerosity Reduction-Discretization and concept

Unit III

Data Mining Primitives, Classification And Prediction : Data mining Primitives –Task Relevant Data-background Knowledge-Concept hierarchies- Presentation and Visualization of discovered pattern-Issues regarding classification and prediction-Prediction-Classification by decision trees- Induction-Tree Pruning-Extract classification rules and decision trees.

Unit IV

Data Warehousing: System process Overview-Process Architecture-Load Manager-Warehouse manager-Query Manager- Data Marting -Metadata.

Unit V

Database Schema:Database Schema-Star flake Schemas-Identifying facts and dimensions-Designing fact tables- Designing dimension tables-Partitioning Strategy

Total Number of Periods: 60

Text Books:-

1. Jiawei Han ,Micheline Kamber, ”Data Mining: Concepts and Techniques”, Morgan Kaufmann Publishers,II Edition 2006.
2. Sam Anahory,Dennis,Murray , Data Warehousing in the Real World, Pearson Education,Asia,2005

Reference Books:

1. Animation using C
   a. Write a program to display an animated ball moving on the animated screen.
   b. Write a program to display color palette.
   c. Write a program to display a car moving on a road.
   d. Write a program to fill a bucket with water.
   e. Write a program to hoist our national flag.
   f. Write a program to rotate a pedestal Fan.

2. Animation using Java applet
   a. Write a program to display and perform grayscale operation.
   b. Write a program to display and perform scroll bar operation.
   c. Write a program for zooming operation.

3. Write a Java Program for File Compression

4. Animation using Authoring tools
   a. Flash
      i. Create Text and shape animation
      ii. Develop a presentation for a product using techniques like Guide Layer, masking and onion Skin
   b. Photoshop
      i. Convert the given old photo into a new photo using a photo editing tool.
      ii. Create and demonstrate blending effects for an image
      iii. Blending two given images smoothly (morphing)

5. Create a simple animation movie for a theme.
   a. Rhymes for kids.
   b. Department facilities.
   c. A theme from Idikasa.(Ramayanam / Mahabarahatham)
**ActiveX Control**
1. Create calculator icon using ActiveX Control
2. Create Numeric text box using ActiveX Control.
3. Create Alarm Clock using ActiveX Control

**VB Dot Net**
4. Create and develop windows application in VB.NET to calculate sum mean, median, standard deviation for the given value.

**C# Dot Net**
5. Develop a program for animate a circle in C# Dot Net.
6. Develop a program for animate an image in C# Dot Net.

**VC++**
7. Develop banking application program using ATLCOM in VC++

**DHTML**
8. Develop Online Quiz web page using DHTML in visual Basic.

**ASP .NET**
9. Super Market

**ADO. NET**
10. Student Attendance Calculation
Unit I

**Introduction To Electronic Commerce:** Definition – Forces Fueling Industry Framework – Types of E-Commerce- Key questions for management

**The internet and the access provider industry:** Internet Service providers, companies providing Internet Access – Internet versus online services – predicting the future of the IAP market

Unit II

**World Wide Web Applications / Concepts/Technology & Firewalls:**


**Concepts & Technology:** Key concepts behind the web – overview of the web’s technical architecture – Interactive web applications – web and Database Integration – Web software Development tools – Multimedia web Extension


Unit III

**Electronic Payment Systems / E-Commerce’s Banking/ Retailing & Online Publishing**

**Electronic Payment Systems:** Overview of the Electronic payment Technology – Electronic or Digital cash – electronic checks – online credit card – based systems and others emerging financial instruments

**Electronic Commerce & Banking:** Changing dynamics in the banking industry – Home Banking history – Implementation approaches – Open versus closed models – management issues in online banking – online publishing approaches – advertising and online publishing

**E-Commerce & Retailing:** Changing Retail Industry Dynamics- Online Retailing success stories – mercantile models from the consumer’s perspective – management challenges in online retailing

Unit IV:

**Intranets And Supply Chain Management Customer Asset Management:** Supply – chain management fundamentals – managing retail supply chains – supply chain application software – future of supply – chain software

**Customer Asset Management**

Online sales forces automation – online customer service and support – Technology and marketing strategy
Unit V: Intranets And Manufacturing & Corporate Finance:

Intranets and manufacturing: Defining the terminology – emerging business requirements – manufacturing Information systems – Intranet- Based manufacturing – Logistics management – EDI.

Corporate Finance: Intranet & Finance – understanding the different software modules – Human Resource management systems – size / Structure of Financials software market.

Total Number of Periods: 45

Text Book:


Reference Books:

Unit I

HTML
HTML Tags – Tables – Frames – Forms – Input Fields – Passing form data – Style sheets – Different approaches to style sheets.

Unit II
Common Gateway Interface Program: Programming CGI scripts – How CGI works – CGI script structure – CGI environment variables
Server Side Programming: XML overview – linking with XML – XML markup – DTD and validation

Unit III
XML schema: Namespaces- Qualification - Global declarations - Modular schemas

Unit IV
WSDL(Web Services Description Language): Describing Web Services - WSDL anatomy- Defining data types and messages- defining a web service interface – defining a web service implementation – Message patterns

Unit V

Total Number of Periods: 60

Text Books:

Reference Books:
Unit I


Unit II


Unit III


Unit IV


Unit V

Transport And Application Layers: Traditional TCP – Classical TCP improvements – WAP, WAP 2.0

Total Number of Periods: 60

Text Books:
2) William Stallings, “Wireless Communications and Networks”, PHI/Pearson Education, 2002 (Unit I Chapter – 7 & 10- Unit II Chapter 9)

Reference Books:
Unit I


Unit II


Unit III


Unit IV


Unit V


Total Number of Periods: 45

Text Book:

Reference Book:
Unit I


Unit II


Unit III


Unit IV


Unit V


Total Number of Periods: 45

Text Book:

Reference Books:
1. Table Creating using HTML
2. Developing Style Sheet using HTML
3. Developing Web form using HTML
4. Basic program to create and publish web service
5. Web site Designing
6. Creating Style sheet using XML
7. Creating XML document using DTD
8. Generating XML code in Java
9. Adding Data in XML document through Java
10. Creation of XML DTD in Java
1. Simulation of ARP/RARP
2. Cyclic Redundancy Check
3. Develop a TCP client server chat
4. Transfer a file over RS232
5. Check sum
6. Bit stuffing
7. TCP Echo client Server
8. UDP Echo client Server
9. Date & Time from Server
10. DNS
Unit 1

Introduction to ERP: Evolution of ERP – Advantages of ERP – Business modeling – Business process engineering – Management Information systems – Decision support system – Executive information system – Data Warehousing – Data Mining – supply chain management

Unit II


Unit III


Unit IV

Commercial ERP Package: Description – Multi- client server solution- Open technology-User Interface-Application Integration.

Unit V

Architecture: Basic architectural Concepts- The system control interfaces- Services-Presentation interface – Database Interface.

Total Number of Periods:

45

Text Books:


Reference Book:

Unit-I
Introduction to Internetworking – Architectural Model- Internet Addressing – Address Resolution protocol (ARP) – Datagram format- Forwarding of IP Datagram – ICMP

Unit-II
Classless and Subnet address extensions – Protocol layering – UDP – TCP-IPV6

Unit-III
Routing Architecture – Routing between peers – Autonomous systems – Internet Multicasting

Unit-IV
Client server model- Socket Interface – DHCP –DNS – Telnet- File Transfer

Unit – V
Electronic mail- World Wide Web – Voice and Video over IP – Network Management – Internet Security and Fire wall design

Total Number of Periods: 45

Text Book:

Reference Books:
BCS012  ADVANCED JAVA PROGRAMMING  TECHNIQUES  3 0 0 3

UNIT I  9 0 0

UNIT II  9 0 0

UNIT III  9 0 0

UNIT IV  9 0 0
Web Based Java: Servlets, EJB, JBuilder, JNI, Struts

UNIT V  9 0 0

Total Number of Periods: 45

Text books:

Reference Books:
UNIT I 9 0 0

UNIT II 9 0 0
Genetic technology: steady state algorithm - fitness scaling – Inversion - Genetic programming – Genetic Algorithm in problem solving

UNIT III 9 0 0
Genetic Algorithm in engineering and optimization-natural evolution –Simulated annealing and Tabu search .Genetic Algorithm in scientific models and theoretical foundations.

UNIT IV 9 0 0
Implementing a Genetic Algorithm – computer implementation - low level operator and knowledge based techniques in Genetic Algorithm.

UNIT V 9 0 0
Applications of Genetic based machine learning-Genetic Algorithm and parallel processors, composite laminates, constraint optimization, multilevel optimization, real life problem.

Total Number of Periods: 45

Text Books:

Reference Books:
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<th>BCSE08</th>
<th>UNIX IN //ERALS</th>
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**UNIT I**

**UNIT II**
Buffers- Structures and Representator – Implementation of System Calls.

**UNIT III**
Structure – Context – Address Space – Creation – Scheduling – Thread implementation of System Call.

**UNIT IV**
Swapping – Segmentation – Demand Paging - implementation of System Call.

**UNIT V**
Drivers – Streams – Implementation of IPC Mechanism.

**Total Number of Periods:** 45

**Text Books:**

**Reference Books :**

49
<table>
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<th>BITE65</th>
<th>EMBEDDED SYSTEMS</th>
<th>3 0 0 3</th>
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</table>

**Unit I**

*Introduction To Embedded Systems:* 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**


**Unit III**


**Unit IV**

*Real Time Operating Systems – Part – 1*

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 – Function and IPCs – Exemplary Coding steps.

Total No of periods: 45

Text Book:

   First reprint Oct 2003

Reference Books:

2. David E.Simon, An Embedded Software Primer, Pearson Education Asia, First Indian Reprint 2000
<table>
<thead>
<tr>
<th><strong>BCSE46</strong></th>
<th><strong>REALTIME SYSTEM DESIGN</strong></th>
<th>3</th>
<th>0</th>
<th>0</th>
<th>3</th>
</tr>
</thead>
</table>

**Unit I**  
**Introduction:** Architecture of real time systems/embedded systems-operating systems issues-performance measures-estimating program run times

**Unit II**  
**Task Assignment And Scheduling :** Uniprocessor scheduling-IRIS tasks-task assignment mode charges -fault tolerance scheduling

**Unit III**  
**Programming Languages And Tools :** Desired characteristics based on ADA-data typing-control structures-packages-exception handling-overloading-multitasking-timing specification-task scheduling-just in time compilation-run time support.

**Unit IV**  
**Real Time Databases:** Basic networking principles-real time databases -transaction processing-concurrency control-disk scheduling algorithms-serialization and consistency.

**Unit V**  
**Fault Tolerance, Reliability And Syncornization:**  
Fault types-fault detection and containment-redundancy-data diversity-reversal checks-obtaining parameter values-reliability models for hardware redundancy-software error models-clocks-fault tolerance synchronization-synchronization and software.

**Total Number of Periods:** 45

**Text Book:**  

**Reference Books:**  
1. Raymond j.a. Buhr -an introduction to real time systems from design to networking c and c++, Prentice Hall 1999.  
2. Albert ,m.k.cheng “real time systems- scheduling, analysis and verification., wiley interscience 2002  
BITE11 SOFTWARE TESTING  3  0  0  3

Unit I

Unit II

Unit III

Unit IV

Unit V

Total No of periods: 45

Text Books:

UNIT-I  
**Fundamentals:** Introduction to distributed computing system, Evolution, Different models, Gaining popularity, Definition, Issues in design, DCE, Message passing-Introduction, Desirable features of a good message passing system, Issues in IPC, Synchronization, Buffering, Multidatagram, Process addressing, Failure handling, Group communication.

UNIT-II  
**RPC:** Introduction, RPC model, transparency of RPC, Implementing RPC mechanism, Stub generation, RPC messages, Marshalling arguments and results, Sever management, parameter-passing semantics, Call semantics, Communication protocols for RPCs, Complicated RPC, Client-server binding, exceptional handling, security, special types of RPC, RPC in heterogeneous environments, Lightweight RPC, Optimization for better performance, Case studies-Sun RPC, DCE, RPC.

UNIT-III  
**Distributed Shared Memory and Synchronization:** Introduction, General architecture of DSM systems, Design and implementation issues of DSM, Granularity, Structure of shared memory space, Consistency model, Replacement strategy, Thrashing, Different approaches to DSM, Advantages of DSM, Clock synchronization, Event ordering, Mutual exclusion, Deadlock, Election algorithm.

UNIT-IV  

UNIT-V  
**DFS and Security:** Desirable features of good DFS, File models, File accessing, models, File sharing semantics, File caching schemes, File replication, Fault tolerance, Atomic Transaction, Design principles, Case Study: DCE DFS, Potential attacks to computer system, Cryptography, Authentication, Access control, Digital signatures, Design principles, DCE security service.

**Total Number of Periods:** 45

**Text Book:**  

**Reference Books:**  
2. AJAY D. KSHEMKALYANI , MUKESH SINGHAL Distributed computing : principles, algorithms and systems – Cambridge University Press-2008
4. HAGIT ATTIYA AND JENNIFER WETCH ,Distributed computing fundamentals, simulations and Advanced Topics – 2nd Edition-2004
Unit I
Introduction: Introduction to artificial intelligence-foundations of AI-history of AI-agents and environments-Structure of intelligent agents

Unit II

Unit III
Knowledge Representation: Knowledge and reasoning—logical agents—the Wumpus problem—logic—prepositional logic—reasoning patterns—prepositional inference—agent based on prepositional logic-first order logic-syntax and semantics—using first order logic-knowledge engineering in first order logic— inference in first order logic-forward chaining—backward chaining-resolution

Unit IV
Planning: Planning—the planning problem—planning with state space search—partial order planning—planning and acting—simple re-planning agent—fully integrated planning and execution

Unit V
Reasoning with incomplete and uncertain knowledge: Uncertain knowledge and reasoning—acting under uncertainty—basic probability notations—the axioms of probability— inference using full joint distribution—Bayes rule—probabilistic reasoning—knowledge in uncertain domain—Bayesian networks—Bayesian networks—making simple decisions—making complex decisions.

Total Number of Periods: 45

Text Book:

Reference Books:
Unit I

Conventional Encryption: Conventional encryption model - DES - RC 5 Introduction to AE
5 - Random number generation.

Unit II

Number Theory And Public Key Cryptography: Modular arithmetic - Euler's theorem -
Euclid's algorithm - Chinese remainder theorem - Primary and Factorization - Discrete
logarithms - RSA algorithm - Diffie Hellmann key exchange.

Unit III

Message Authorisation And Hash Functions: Hash functions - Authentication requirements -
authentication function - Message Authentication codes - Secure Hash Algorithms. Digital
signature and authentication protocols - Digital Signature - Authentication protocols - Digital
Signature standard.

Unit IV

Security Architecture - Authentication Header - Encapsulating security payload - combining
security associations - key management, Web Security - web security considerations – SSL and
transport layer security – secure electronic transaction.

Unit V

System Security: Intruders- Intrusion Detection - password management, malicious software –
viruses and related threats – virus countermeasures, Firewalls – Firewall Design principles –
trusted systems

Total No of periods:

45

Text Book:

Hall, New Jersey, 1999.

Reference Books:

1) E. Biham and A. Shamir, "Diffential Crypt analysis of the data encryption standard",
Springer Verlag, 1993.


Unit I  

Unit II  
**OPEN GRID SERVICES ARCHITECTURE**  
**Infrastructure & Services:** OGSA-Some Sample Use Cases that Drive the OGSA –The OGSA Platform Components.  
**OGSI:** Grid Services-OGSI Specification-Service Data Concepts.  
**OGSA Services:** Common Management Model-Policy Architecture-Security Architecture.

Unit III  
**Globus GT3 Toolkit:** Architecture- Programming model –Implementation-High level services.

Unit IV  

Unit V  
**Cloud Computing Technology & Migration:** Hardware and Infrastructure –Accessing the Cloud-Cloud Storage-Standards-Migrating to the cloud.

**Total Number of Periods:** 45

**Text Books:**

**Reference Book:**
UNIT – I

Introduction: Cloud Computing Introduction, From, Collaboration to cloud, Working of cloud computing, pros and cons, benefits, developing cloud computing services, Cloud service development, discovering cloud services.

UNIT – II

Cloud Computing For Everyone: Centralizing email communications, cloud computing for community, collaborating on schedules, collaborating on group projects and events, cloud computing for corporation, mapping schedules, managing projects, presenting on road.

UNIT – III

Using Cloud Services: Collaborating on calendars, Schedules and task management, exploring online scheduling and planning, collaborating on event management, collaborating on contact management, collaborating on project management, collaborating on word processing, spreadsheets, and databases.

UNIT – IV

Outside The Cloud: Evaluating web mail services, Evaluating instant messaging, Evaluating web conference tools, creating groups on social networks, Evaluating online groupware, collaborating via blogs and wikis.

UNIT – V

Storing And Sharing: Understanding cloud storage, evaluating online file storage, exploring online book marking services, exploring online photo editing applications, exploring photo sharing communities, controlling it with web based desktops.

Total Number of Periods: 45

Text Book:
UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

Total Number of Periods: 45

Text Books :
2. Abdullah Uz Transelet-al, “Temporal databases”-Theory design and implementation”, Benjamin/Cummings publishing co,1993.(IV Unit)

Reference Books :
UNIT I  
Packet Switched Networks: OSI and IP models, Ethernet (IEEE 802.3), Token ring (IEEE 802.5), Wireless LAN (IEEE 802.11) FDDI, DQDB, SMDS: Internetworking with SMDS.

UNIT II  
ISDN And Broadband ISDN: ISDN - overview, interfaces and functions, Layers and services - Signaling System 7 (SS7)- Broadband ISDN architecture and Protocols.

UNIT III  
ATM and Frame Relay: ATM: Main features-addressing, signaling and routing, ATM header structure-adaptation layer, management and control, ATM switching and transmission. Frame Relay: Protocols and services, Congestion control, Internetworking with ATM, Internet and ATM, Frame relay via ATM.

UNIT IV  
Advanced Network Architecture: IP forwarding architectures overlay model, Multi Protocol Label Switching (MPLS), integrated services in the Internet, Resource Reservation Protocol (RSVP), Differentiated services

UNIT V  

Total No of periods: 45

Text Books:

Reference Books:
Unit I  
**Introduction:** An Introduction to Knowledge Management - The foundations of knowledge management including cultural issues- technology applications- organizational concepts and processes- management aspects and decision support systems. The Evolution of Knowledge management: From Information Management to Knowledge Management - Key Challenges Facing the Evolution of Knowledge Management - Ethics for Knowledge Management.

Unit II  
**Creating The Culture Of Learning And Knowledge Sharing:** Organization and Knowledge Management - Building the Learning Organization. Knowledge Markets: Cooperation among Distributed Technical Specialists - Tacit Knowledge and Quality Assurance.

Unit III  
**Knowledge Management-The Tools:** Telecommunications and Networks in Knowledge Management - Internet Search Engines and Knowledge Management - Information Technology in Support of Knowledge Management - Knowledge Management and Vocabulary Control - Information Mapping in Information Retrieval - Information Coding in the Internet Environment - Repackaging Information.

Unit IV  
**Knowledgemanagement-Application:** Components of a Knowledge Strategy - Case Studies (From Library to Knowledge Center, Knowledge Management in the Health Sciences, Knowledge Management in Developing Countries).

Unit V  
**Future Trends And Case Studies:** Advanced topics and case studies in knowledge management - Development of a knowledge management map/plan that is integrated with an organization's strategic and business plan - A case study on Corporate Memories for supporting various aspects in the process life -cycles of an organization.

**Total Number of Periods:** 45

**Text Books:**