# M.Sc. Information Technology: Syllabus (CBCS)

## THIRUVALLUVAR UNIVERSITY

### MASTER OF SCIENCE

### DEGREE COURSE

### M.Sc. INFORMATION TECHNOLOGY

### UNDER CBCS

(With effect from 2012-2013)

The Course of Study and the Scheme of Examinations

<table>
<thead>
<tr>
<th>Year / Semester</th>
<th>Subject</th>
<th>Paper</th>
<th>Title of the Paper</th>
<th>Ins. Hrs/Week</th>
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| | | | | | 30 | 30 | 220 | 480 | 700 |
# M.Sc. Information Technology: Syllabus (CBCS)

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PRINCIPLES OF COMMUNICATION SYSTEM

Objectives:

The aim of this course is to introduce the principles of communications, digital communications, and data communications.

UNIT-I


UNIT-II

Analog Modulation Systems: Basic principles of AM, FM, and PM - Spectra, power consideration, receiver’s characteristics and deduction of AM, FM and PM systems performance - Threshold effects reduction.

UNIT-III


UNIT-IV

Digital Modulation: Digital modulation - Coherent binary modulation techniques - Coherent quadrature modulation techniques - Non-coherent binary modulation - M-array modulations - Performance of digital modulation systems based on probability of error, bandwidth, and ISI.
UNIT-V

Spread Spectrum Techniques: Fundamental concepts - Direct sequence spread spectrum - Frequency hopping spread spectrum.

Text Books:


References Books:

PAPER – 2

OBJECT ORIENTED PROGRAMMING

Objectives:

The main goal is to acquire skills and knowledge in Object oriented programming.

UNIT-I

C++ Programming : Introduction to C++ - Tokens, Expressions and Control Structures –Functions in C++ - Classes and Objects – Constructors – Destructors – Operator overloading and Type conversion

UNIT-II


UNIT-III

Java Programming : Importance and features of java, Data types, Expressions, Declarations, Statements and Control Structures, Program Structures, String handling, Packages, Interfaces, Working with java.util Package, Object Class.

UNIT-IV

Exception Handling, I/O and JDBC: Fundamental exception types, uncaught exceptions, throw, throw final, built in exception, creating our own exceptions. Streams, Byte and Character stream, Predefined streams, Reading and Writing from Console and Files, Buffered Reader and Writer, Serialization. JDBC Basics, JDBC Drivers, Connecting to Database and accessing databases.

UNIT-V

Interfaces, Packages and Threads :Interface – Extending Interface – Implementation Interfaces – Accessing Interface variables – Java API packages – Creating Packages –Accessing and using packages – Creating Threads – Extending the thread class – Stopping and blocking a thread – Thread priority - Synchronization
Text Books:


References Books:


PAPER – 3

DATA BASE MANAGEMENT SYSTEM

Objectives:

The primary goal of this subject is to provide the complete knowledge on the object-oriented approach of databases. This serves the skill on Functional Dependencies, Normalization and data base design. It provides the complete set of administration tools on databases.

UNIT-I


UNIT-II


UNIT-III

UNIT-IV


UNIT-V


Basic interface Mechanisms for Logic Programs - Datalog - Programs and their Evaluation - Deductive Database Systems - Deductive Object-Oriented Databases - Applications of Commercial Deductive Database Systems.

Text Books:


References Books:

ELECTIVE

PAPER – 1

A. COMPUTER ARCHITECTURE

Objectives:

To understand the main components of a computer system and the considerations in their design. To understand performance measures, as well as their impact on system architecture. To understand the interplay among system components such as design trade-offs.

UNIT-I

Basic structure of computer hardware and software - Addressing methods and machine program sequencing - Computer arithmetic - logic design for fast adders - multiplication - Booth’s algorithm - Fast multiplication - integer division - floating point number representation- floating point arithmetic.

UNIT-II

Control unit - instruction execution cycle - sequencing of control signals - hardwired control - PLAs - micro programmed control - control signals - microinstructions - micro program sequencing - Branch address modification - Prefetching of micro instructions - emulation - Bit slices.

UNIT-III

Memory organization-Semiconductor RAM memories- internal organization-Bipolar and MOS devices - Dynamic memories - multiple memory modules and interleaving - cache memories - mapping functions - replacement algorithms - virtual memory - address translations - page tables memory management units - Secondary memory - disk drives - organization and operations - different standards.

UNIT-IV


UNIT-V

Introduction to parallel organizations - multiple processor organization - symmetric multiprocessors - cache coherence - non uniform memory access - vector computation - introduction to CISC and RISC - Architectures - Comparison.
Text Books:


References Books:

PAPER – 1

B. DISCRETE MATHEMATICS

Objectives:

To understand the concepts of sets, proposition, permutation and combinations.
To familiarize in relations, digraphs and functions, trees, groups and coding.
To help the students for developing the fundamental mathematical knowledge.

UNIT-I


Logic: Propositions and Logical operations - Conditional Statements - Methods of Proof - Mathematical Induction.


UNIT-II

Relations and Digraphs: Product Sets and Partitions - Relations and Digraphs - Paths in relations and Digraphs - Properties of relations - Equivalence Relations - Computer Representation of relations and Digraphs - Manipulation of Relations - Transitive Closure and Warshall’s Algorithm.

UNIT-III

Functions: Functions - Permutation Functions - Growth of Functions Topics in Graph Theory: Graphs - Euler Paths and Circuits - Hamiltonian Paths and Circuits - Coloring Graphs

UNIT-IV

Order Relations and Structures: Partially Ordered Sets - External Elements of Partially Ordered Sets - Lattices - Finite Boolean Algebras - Functions on Boolean Algebras - Boolean Functions as Boolean Polynomials.

UNIT-V

Semigroups and Groups: Binary Operations Revisited - semigroups - Products and Quotients of Semigroups - Groups - Products and Quotients of Groups. Groups and coding: Coding of Binary Information and Error Detection - Decoding and Error Correction
Text Books


References Books:

PAPER - 1

C. OPERATING SYSTEM

Objectives:

To learn what an operating system is, what its role in a computing system is, how operating systems have evolved over time, and what the various components of an operating system are and how they work. Several real operating system case studies help to understand how the principles studied are used in practice. The role of an operating system in a distributed system is also to be studied.

UNIT-I


UNIT-II


UNIT-III

Memory Management: Background - Swapping - Contiguous Memory Allocation - Paging - Segmentation - Segmentation with paging - Virtual Memory: Demand paging - Page Replacement - Thrashing.

UNIT-IV


UNIT-V

Text Books:

References Books:
CORE PRACTICAL – I

OBJECT ORIENTED PROGRAMMING LAB

Objectives:

The main aim is to familiarize the concepts learned in Object Oriented Programming. To write Programs for various object oriented concepts using C++ and Java.

Programs to implement

Function overloading in C++  
Simple class design and objects creations in C++  
Constructor and destructor in C++  
Operator overloading, friend functions  
Overloading assignment operator, type conversions  
Inheritance and polymorphism in C++  
Input/Output operation  
Simple class design and objects creation in Java  
String handling in Java  
Control Structures in Java  
Exceptions handling in Java  
Java I/O  
Multi-threaded programs in Java  
Connecting to Database and accessing databases
CORE PRACTICAL – II

RDBMS LAB

Objectives:

To familiarize the concepts learned in RDBMS and to develop various practical applications using SQL and PL/SQL.

Exercises

Study of various SQL commands
Implementation of the concept of Normalization
Inventory control system with a reorder level
Student Mark sheet processing
Pay roll processing
Electricity bill preparation
Telephone Directory Maintenance
Bank Transactions
Library Information processing
Personal Information system
CORE PRACTICAL – III

VISUAL PROGRAMMING LAB

Objectives:

The students will acquire knowledge on software development using the visual programming languages. This course concentrates on the development of software systems in Visual Basic and Visual C++.

Visual Basic

Write a VB project that receives a year number from a text box and month name from list box and displays number of days in the given month. Take care of leap years. Use Lost Focus event for list box.

Write a VB project that stores 10 employee records with fields EMPNO, NAME, AGE, SEX and SALARY, in an array. Display data fields in text boxes and provide command buttons to move to desired record.

Write a VB project that receives a foreign currency value selected from a list box and converts it into equivalent Indian rupees. (e.g. USD 42.45, Sterling 71.30, D.Mark 25.52, SW Franc 31.58, SaudiRiyal 11.40, French Franc 7.60, UAE Dhiram 11.55, Kuwait Dhinar 140.56)

Write a VB project using control array that creates a scientific calculator with appropriate command buttons. Include the following capabilities for the calculator: +, -, *, /, %, power, square root, square and log (base 10).

Write a VB project to create a screen saver that displays a list of pictures with 1 second pause in between successive pictures.

Write a VB project for commercial bank operations using SB account database, with the following features:

1. ADD NEW ACCOUNT
2. DEPOSIT AMOUNT
3. WITHDRAW AMOUNT (with minimum balance condition)
4. Calculate simple interest and update balance taking average of last 6 month balance in the account.
5. CLOSE ACCOUNT.

Write a VB project using built in Ax control (Rich Text Box), develop the windows NOTEPAD like editor with File and Edit menus and also display the floating menu whenever necessary.
Write a VB project for a Blood Bank that maintains a list of donors with address and their blood group. Provide the following reporting features:

i) Search and display the address of a particular donor, given the name in a text box.

ii) Display all the donors (using data report)
   a) in age group 20-30.
   b) in particular city.
   c) with particular blood group.
   d) male donors with particular blood group
   e) female donors with particular blood group.

Write a VB project using Ax DLL or EXE add a class module that would perform the following functions:

a) Test whether the given number is perfect or not
b) Whether the given number Armstrong or not
c) Find the factorial of the given number
d) sum of digits

Write a VB project using Activex control to create a Textbox that accepts only numeric value. Provide the following properties for the text box: BackColor, Forecolor and Text.

Visual C++

Write Visual C++ win32 application program using MFC that creates a new font.
Write Visual C++ win32 application program using MFC that displays a message "Hello Good Morning!" wherever the user clicks the mouse button on the client area.
Write Visual C++ win32 application program using MFC that allows the user to draw pictures with the help of mouse as a free hand drawing tool.
Write Visual C++ win32 application program using MFC that creates a list box and displays name of the states in India.
Write Visual C++ win32 application program using MFC that displays line, rectangle, rounded rectangle, ellipse and polygon filled with colors.
Write Visual C++ win32 application program using MFC that fills the background of the client area with a bitmap.
Write Visual C++ win32 application program using MFC that displays a menu. Choose the menu items using keyboard accelerator keys and display appropriate messages for the selected command, in message box.
Write Visual C++ win32 application program using MFC that displays the status of ALT, CTRL, SHIFT, NUM LOCK and SCROLL LOCK keys.
Write Visual C++ win32 application program using MFC that displays current mouse coordinates in status bar.
Write Visual C++ win32 application program using MFC that creates two push buttons OK and CANCEL on the client area. Buttons should respond to user click over them and display appropriate message.
SEMIESTER - II

PAPER – 4

VISUAL PROGRAMMING

Objectives:

To learn and understand Windows, Visual Basic and Visual C++ Programming

UNIT-I


UNIT-II


UNIT-III


UNIT-IV

Database Connectivity – Embedding Controls in view – Creating user defined DLL s – Dialog based applications – Dynamic data transfer functions – Database management with ODBC – communicating with other applications – Object linking and embedding.

UNIT-V


Text Books:


References Books:

PAPER – 5

COMPUTER NETWORKS

Objectives:

Understand the basics of Computer Networks. Understand the operation of the protocols that are used Computer Networks.

UNIT-I


UNIT-II

Data Link Layer: Data Link Layer design issues - Framing - Flow control - Error Detection and Correction – Data link protocols: Stop and Wait Protocol - Sliding window protocol - Medium access sub layer: Channel allocation –static and dynamic - Multiple access protocol – FDDI - Data Link Layer in the Internet – SLIP - PPP.

UNIT-III


UNIT-IV

Transport Layer : The Transport layer services - The concept of client and server in terms of socket addressing - Quality of service - Transport service primitives and buffering – Multiplexing - Crash Recovery - The Internet Transport Protocols (TCP/IP) – The TCP protocol, The TCP segment header, TCP connection management - TCP transmission policy - TCP congestion control - UDP.

UNIT-V

Presentation and Application Layer : Network Security – Traditional Cryptography - Two fundamental Cryptographic Principles – Symmetric and Asymmetric Key Algorithms - DNS - SNMP -E-mail.
Text Books:


References Books:

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ELECTIVE

PAPER – 2

A. SOFTWARE ENGINEERING

Objectives:

The objective of this subject is to make the student familiar with the principles, management and practical methodology followed in any software engineering project development, its implementation and maintenance.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V

Software Testing - Fundamentals White Box, Black Box, Control Structure Testing - Testing on Specialized Environments, Unit, Integration, Validation, System Testing - Art of Debugging - Software

**Text Books:**


**References Books:**

PAPER – 2

B. E- COMMERCE

Objectives:

By the end of the course the student should have:
A background in electronic commerce as it affects small and medium sized business (SMEs)
An understanding of how you can develop and implement an E-commerce strategy for your business
An E-commerce business plan based on the adoption of a selected E-commerce strategy.

UNIT-I

Introduction: Infrastructure for Electronic Commerce - Networks - Packet Switched Networks - TCP/IP
Internet protocol - Domain name Services - Web Service Protocols - Internet applications - Utility programs - Markup Languages - Web Clients and Servers - Intranets and Extranets - Virtual private Network.

UNIT-II

Core Technology: Electronic Commerce Models - Shopping Cart Technology - Data Mining - Intelligent
Agents - Internet Marketing - XML and E-Commerce

UNIT-III

Electronic Payment Systems: Real world Payment Systems - Electronic Funds Transfer - Digital
Payment -Internet Payment Systems - Micro Payments - Credit Card Transactions - Case Studies.

UNIT-IV

Security: Threats to Network Security - Public Key Cryptography - Secured Sockets Layer - Secure
Electronic Transaction - Network Security Solutions - Firewalls.

UNIT-V

Inter/Intra Organizations Electronic Commerce: EDI - EDI application in business - legal, Security and
Privacy issues - EDI and Electronic commerce - Standards - Internal Information Systems - Macro
forces - Internal commerce - Workflow Automation and Coordination - Customization and Internal
commerce - Supply chain Management.
Text Book:

Ravi Kalakota and Andrew B Whinston, Frontiers of Electronic commerce, Addison Wesley, 1996

Reference Books:

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PAPER – 2

C. TELECOMMUNICATION SWITCHING TECHNIQUES

Objectives:

The objective of the course is to impart theoretical and practical knowledge of the present day telecommunication switching systems and data networks. Topics ranging from the electromechanical switching systems to the voice and data integration systems will be covered. Design of space and time division switching systems will be discussed. The course also deals with data and ATM networks.

UNIT-I

Evolution of Telecommunication Switching And Circuit: Evolution of Public Switched Telecommunication Networks, Strowger exchange, Crossbar exchange, Stored program exchange, Digital exchange - Basic Telecommunication equipment - Telephone handset, Hybrid circuit, Echo suppressors and cancellers, PCM coders, Modems and Relays.

UNIT-II

Electronic Switching: Circuit Switching, Message switching, Centralized stored program switching, Time switching, Spare switching, Combination switching - Digital switching system hardware configuration, Switching system software, Organization, Switching system call processing software, Hardware software integration.

UNIT-III

Telecommunication Signaling and Traffic: Channel associated signaling, Common channel signaling, SS7 signaling protocol, SS7 protocol architecture, Concept of Telecommunication traffic, Grade of service, Modeling switching systems, Blocking models and Delay systems.

UNIT-IV

Integrated Digital Networks: Subscriber loop characteristics, Local access wire line and wire less PCM / TDM carrier standards transmission line codes, Digital multiplexing techniques, Synchronous, Asynchronous, Plesiocronous multiplexing techniques, SONET/ SDH, Integrated Digital Network (IDN) environment - Principles of Integrated Services Digital Network (ISDN) - Cellular Mobile Communication Principles.

UNIT-V

Text Book:

References Books:
SEMESTER III

PAPER – 6

INTERNET PROGRAMMING

Objectives:

Upon completion of the course the student will be able to:
Write client-side JavaScript programs for executing in a Web browser.
Do basic HTML design using colors, images, tables, frames, and GUI components such as text boxes, buttons, menus, checkboxes, and radio buttons and develop interactive Web applications that integrate HTML with JavaScript using event handlers.
Explain control structures, functions, and arrays, and illustrate how they are used to create JavaScript programs. Also discuss object-oriented programming and the Document Object Model, built-in and custom objects.
Create JavaScript applications that use cookies to track and save Web preferences.

UNIT-I


UNIT-II

Dynamic HTML: Dynamic HTML Object Model and Collections, Event Model, Filters and Transitions, Data Binding with Tabular Data Control, Dynamic HTML-Structured Graphics ActiveX Controls, Dynamic HTML-Path, Sequencer and Sprite ActiveX Controls.

UNIT-III

JavaScript: JavaScript, Introduction to Scripting, Control Statements, Functions, Arrays, Objects.

UNIT-IV

XML: Creating Markup with XML - Parsers and Well-formed XML Documents - Parsing an XML Document with msxml - Document Type Definition (DTD) - Document Type Declaration - Element Type Declarations - Attribute Declarations - Document Object Model - DOM Implementations - DOM Components - path - XSL: Extensible Stylesheet Language Transformations (XSLT)
UNIT-V

PERL, CGI AND PHP: Perl - String Processing and Regular Expressions - Form Processing and Business Logic - Server-Side Includes - Verifying a Username and Password - Using DBI to Connect to a Database - PHP - Form Processing and Business Logic - Connecting to a Database - Dynamic Content in PHP

Text Books:

References Books:
PAPER – 7

MOBILE COMPUTING

Objectives:

The objective is to provide the concepts of mobile computing including access control, digital mobile phone system, wireless LAN and the necessary protocols.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V


Text Book:


References Books:

PAPER – 8

COMPUTER GRAPHICS AND MULTIMEDIA

Objectives:

The objective is to provide complete understanding of the theoretical aspects of computer graphics and multimedia. To provide the details of algorithms which facilitate implementation of both 2D and 3D graphics. To provide a basic understanding of the fundamental issues and problems in the representation and manipulation of multimedia content such as images, audio and video.

UNIT-I

Introduction and Hardware: Representative uses of computer graphics - vector display and raster display architectures - display processor - interactive input devices - output primitives - software portability and graphics standards - conceptual framework for interactive graphics.

UNIT-II

2D graphics: Basic raster graphic algorithms for 2D primitives - scan converting lines - circles - ellipses - filling rectangle - character generation - 2D transformations - 2D clipping - windowing transformation.

UNIT-III

3D graphics: 3D representation methods - 3D transformations - viewing and projections - parallel and perspective projections - hidden line elimination - hidden surface elimination.

UNIT-IV


UNIT-V

Multimedia Building Blocks: Text - Images - Animation – Audio – Video – Animation – Image editing tools - Painting and drawing tools - Sound editing programs - Video formats - Presentation tools - Authoring tools.
Text Books:

References Books:
ELECTIVE

PAPER – 3

A. JSP AND EJB

Objectives:

To provide complete skills on Internet programming paradigm and also programming knowledge about J2EE such as JSP and EJB.

UNIT-I

JSP session – persistent connections – cookies and Java sessions – HTTPS and SSL

UNIT-II

Error Handling and Debugging: JSP Error Handling – types – JSP specific Exception classes - handling different types of errors – Debugging techniques.
Database connectivity – RDBMS - Driver types – coding with JSP and JDBC

UNIT-III

Tag extensions and libraries –simple tags – implementation of Body tag interface – Dynamic GUI – creation of web sites – co-branded model –web portal

UNIT-IV


UNIT-V

Session beans – Enterprise Bean class – Life cycle – Stateful Session Bean Example – Stateless Session Bean Example –session context – EJB Security

Text Books:

References Books:
Wrox Author Team, "Professional EJB", Wrox Press, July 2001
B. CLIENT SERVER COMPUTING

Objectives:

To familiarize the concepts of client/server computing and its characteristics and the Role of client and server components.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V

Text Books:

References Books:
PAPER – 3

C. IMAGE PROCESSING

Objectives:

To familiarize the concepts of Image Processing and its Applications

UNIT-I


UNIT-II

Image enhancement : point operations – contrast stretching, clipping and thresholding – Histogram modeling – Spatial operations – averaging and low pass filtering, smoothing filter, sharpening filter and median filtering - Image Enhancement in frequency domain – smoothing and sharpening filters – Homomorphic filter

UNIT-III


UNIT-IV


UNIT-V

Text Books:


References Books:

CORE PRACTICAL – IV

NETWORK LAB

Objectives:

To familiarize the concepts learned in Computer Network. Programs for various Network functions can be written using Java.

Network Programming

Retrieving data with URLs
Implementation of Socket Programming
Using TCP/IP
Using UDP
Implementation of FTP
Implementation of ECHO/PING/TALK
Implementation of Remote command Execution
Implementation of ARP
Implementation of RARP
Implementation of RMI / RPC
Implementation of Shortest Path Routing Algorithm
Implementation of Sliding Window Protocol
CORE PRACTICAL – V
INTERNET PROGRAMMING LAB

Objectives:

To implement the concept learned in internet programming and make familiarize with the creation of web based applications.

Creating a web page with cascading style sheets and Embedded style sheets.
Create a web page with the following.
Order form using HTML form elements
Validate the details in client side by using Java script
Design a web page to perform screen saver animations using Java script
Design a web page to display the text file contents using data binding concepts in DHTML.
Design a HTML Editor using Java applet.
Design a web page for library Management using Java applet and JDBC.
Write a Java RMI program to copy a text file from server to client.
Design a web page to conduct On-line Quiz using Java server pages.
Write a servlet program to do the following.
Set the URL of another server.
Display the header details during request of a page.
Display response header as well as contents during response from the server.
Design a web page to demonstrate session tracking Management using Java servlet.
CORE PRACTICAL – V

GRAPHICS AND MULTIMEDIA LAB

Objectives:

To make the students to understand practically various concepts learned in Computer graphics and Multimedia.

Program for Circle Drawing using Bresenham Circle Drawing Algorithms.
Program for Clipping Algorithm using Line Clipping
Program for 2D Transformations like Translations and Scaling and Rotations.
Program for 3D Transformations like Translations and Scaling and Rotations.
Performing various editing operations on an Image
Creating different Animations.
SEMESTER IV  

PAPER – 9  

SOFTWARE PROJECT MANAGEMENT  

Objectives:  
The goal of the course is to study about Software Process, Project Estimation, Project Scheduling and Quality Standards  

UNIT-I  

UNIT-II  

UNIT-III  
Project initiation – Project Planning and tracking – what, cost, when and how – organisational processes – assigning resources – project tracking – project closure – when and how.  

UNIT-IV  

UNIT-V  
Project Management in testing phase – in the maintenance phase – Impact on internet on project Management.  

Text Books:  

References Books:  
PAPER – 10

NETWORK SECURITY

Objectives:

The goal of the course is to provide students with a foundation allowing them to identify, analyze, and perhaps solve network-related security problems in computer systems. The course covers fundamentals of number theory, authentication, and encryption technologies, as well as the practical problems that have to be solved in order to make those technologies workable in a networked environment, in particular in the wide-area Internet environment.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V


Text Books:


References Books:

ELECTIVE

PAPER – 4

A. HIGH SPEED NETWORKS

UNIT-I

HIGH SPEED NETWORKS : Fast Ethernet technology, FDDI, SONET and SDh standards, Performance of HIGH speed LAN- throughput, delay and reliability. Wave length division multiplexed LANrouting and switching MDM networks, Gigabit LAN.

UNIT-II

ISDN and STANDARDS : Overview of ISDN – user interface, architecture and standards. Packet switched call over ISDN, B and D channels, link access procedure (LAPD) ISDN layered architecture, signaling. Limitations of Narrowband ISDN (N-ISDN) and evolution of broad band ISDN (B-ISDN).

UNIT-III

ASYNCHRONOUS TRANSFER MODE NETWORKS : ATM protocol architecture, ATM adaption layer, fast packet switching techniques and VP/VC encapsulation. ATM cells, ATM cell header interpretation, source characteristics.

UNIT-IV

ATM TRAFFIC MANAGEMENT : Traffic management issues in ATM-resource management, connection management, policing and reactive control principles. Discrete time queue analysis and application to CAC, leaky bucket and ECN/ICN.

UNIT-V

ATM SIGNALING AND DATA COMMUNICATION OVER ATM : ATM signaling fundamentals and meta-signaling. TCP/IP over ATM-challengers and proposal LAN emulation over ATM. Performance of Data Communication over ATM.

Text Books:

References Books:
B. OPTICAL AND SATELLITE COMMUNICATION

Objectives:

This course is devoted to the analysis and design of a general optical and satellite communication link. Students will understand hardware and performance capabilities and limitations of modern optical and satellite communications.

UNIT-I

Optical Fibers, Sources and Detector: Structure, wave guiding and characteristic modes and configuration, group velocity, dispersion, mode coupling, single mode fiber design – Laser Diodes, light emitting diodes, modal, partition and reflection noise, power coupling, splicing, connectors, PIN – Diode, avalanche photo-diodes. Detector response time.

UNIT-II


UNIT-III

Communication Satellite – Orbit and Description: Orbital period and velocity, effects of orbital inclination, coverage angle and slantrange, placement of satellite in a geo-stationary orbit, Satellite description – Communication subsystems, telemetry, command and ranging subsystems, attitude control and electrical power.

UNIT-IV

Earth Station: Earth station antenna types, gain and radiated power, pointing loss, noise temperature, G/T ratio, high power amplifiers, redundancy configurations, carrier and power combining, low noise amplifiers – redundancy configuration and non-linearity, up converter and down converter – conversion process, hopping and redundancy configurations.

UNIT-V

Text Books:

Reference Books:
PAPER – 4

C. COMPONENT TECHNOLOGY

Objectives:

Aim of this course is to provide the concepts of distributed objects and computing methodologies and CORBA

UNIT-I

INTRODUCTION : Objects – distributed objects – Historical perspective on Distributed objects and computing methodologies.

UNIT-II


UNIT-III


UNIT-IV

DCOM : Model and services – Objects and Object hierarchies – Location transparency – Configuration information – interface definition language (MIDL) – Applications.

UNIT-V


Text Books:

References Books:


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