

V Semester(B.Tech.) Information Technology

IT-351 (Web Design)

L	T	Theory	Sessional
3	1	100	40

UNIT-I

The World Wide Web as a Communication System:

The State of the world Wide Web, An Overview of the World Wide Web, The Role of the Web within Cyberspace, Information Spaces in the Web

A Developer's Tour of the Web:

An Overview of the Web's Potential, Web Functions, Web Development Phase, Developer's Tour Check Options for Web Connections : Choosing User Connections, Choosing Information Provider Connections, Accessing the Web, Connections Check

UNIT-II

Information Architecture:

Role of information architecture, Collaboration & Communication, organizing information,

Navigation System: Types of navigation systems, integrated navigation elements, Remote navigation elements, Designing element navigation systems

Web Development Principles and Methodology Overview:

The Web as a Medium for Expression, Web User Experience. Web Communication Processes, A Web Development Methodology, Web Principles and Methodology Check.

UNIT-III

Web Planning & Analysis-

Principles of Web Planning, Web-Planning Techniques, A Web Plan Example, Web Analysis Processes, Web Analysis Principles

Web Design & implementation- An Overview of Web Design, Principles of Web Design, Web Design State of the Art in Web Implementation, An Implementation Overview, Implementation Principles, Implementation Processes, Web Implementer's Check

Web Promotion & Innovation

Web Promotion Principles, Web Promotion Techniques, Web Business Models ,Web Promoter's Check, An Innovation Overview, Web Innovation Techniques, Web Innovator's Check

UNIT-IV

HTML

Structure of HTML document, HTML elements, Linking Basics, Linking in HTML, Image & Anchor tag their attributes, Image maps. List Frames, Table .Forms in HTML, Embedding of graphics through HTML

XML

Basic XML valid documents

Syntax, Elements & Attributes of XML, Document Type Definition.

V Semester(B.Tech.) Information Technology **IT-353 (Digital and Data Communication)**

L	T	Theory	Sessional
4	1	100	40

UNIT-I

Introduction:

A Communications model – Data Communication – Data Communication networking – Standards – Making organization – Data Transmission : concepts and terminology – Analog and Digital Transmission - Transmission impairments – Transmission media.

Data Encoding :

Digital data, digital signals: Encoding schemes NRZ-L, Manchester- Pseudo ternary – Bipolar- AMI, BBZS-HDB3- Evaluations factors—Digital data, analog signals: Encoding techniques- ASK- FSK- PSK- Performance comparison—Analog data signals: Quantization – Sampling theorem – PCM-Delta modulation – Errors- Comparison- Analog Data analog signals; Quantization- Sampling theorem- PCM- Delta modulation – Errors- Comparison – Analog Data, analog signals: Need for modulation methods – Amplitude modulation – angle modulation- Comparison

Unit-2

Digital data communication techniques: Asynchronous and Synchronous – Error techniques : Parity Checks – Cycle redundancy Checks –Checksum – Error Correcting codes : Forwards and backward error corrections DTE& DCE Interface:Characteristics of DTE- DCE interface, Interface: 232-C Rs.- 449/422, A/423 –A.

UNIT-III

Data link control:

Need for data link control – Line configurations: Topology, duplexity and line discipline – flow control : effect of propagation delay and transmission rate- sliding window protocol – Error Control ; Error detection – ARQ – Bit- oriented link control – Necessity – Protocols – HDLC, ADCCP, LAP- B, SDLC – Character – oriented link control – Binary synchronous – Their categories – Limitations, series Controller 85C30.

MultiplexingAdvantages – Types of multiplexing – FDM- Synchronous TDM- Statistical TDM or Asynchronous TDM, Study of their characteristics and carrier systems.

UNIT-IV

Satellite Communication System:Satellite parameters and configurations – Capacity allocation : Frequency Division FDMA ; Time Division TDMA-Fixed assigned multiple access(FAMA) ,Demand assign multiple access (DAMA) –The concept of spread spectrum FHSS, DSSS – CDMA – Transmission and reception.

Books Recommended :

1. Proakin, “ Digital Communications” , Mc Graw Hill.
2. W.Stalling “Wireless Communication And Networks” Pearson
3. Stallings, “Data & Computer Communications” , PHI.
4. Forouzan “Data Communication & Networking” Tata McGraw Hill.
5. Roden , “Digital & Data Communications” , PHI.
6. Miler , “Introduction to Digital & Data Communications”, HI
7. Pratt, “Satellite Communication” , John Wiley.

Note:- There will be 8 questions in all .Two questions will be set from each unit. Students are required to attempt five questions selecting at least one question from each unit.

V Semester(B.Tech.) Information Technology

IT-355 (Networking Programming)

L	T	Theory	Sessional
4	1	100	40

UNIT-I

Introduction to Java & Principles of object Oriented Programming:

Basic Concepts of OOP and it's Benefits, Application of OOP, The Creation of Java, Importance of Java for the Internet, Java's Magic: The Byte-Code, Features of Java, Object-Oriented Programming in Java, Java Program Structure.

Defining Classes:

Definition of a Class, Definition of Methods, Constructors, Creating Objects of a Class, Assigning Object Reference Variables, The Keyword "this", Defining and Using a Class, Automatic Garbage Collection.

Arrays and Strings:

Arrays, Arrays of Characters, String Handling Using String Class, Operations on String Handling Using String Buffer Class.

Extending Classes and Inheritance"

Using Existing Classes, Class Inheritance, Choosing Base Class, Access Attributes, Polymorphism, Multiple Levels of Inheritance, Abstraction through Abstract Classes, Using Final Modifier, The Universal Super class-Object Class.

UNIT-II

Packages & Interfaces:

Understanding Packages, Defining a Package, Packaging up Your Classes, Adding Classes from a Package to Your Program, Understanding CLASSPATH, Standard Packages, Access Protection in Packages, Concepts of Interface.

Exception Handling

The Idea behind Exceptions, Types of Exceptions, Dealing with Exceptions, Exception Objects, Defining Your Own Exceptions, Checked and unchecked Exceptions.

Multithreading Programming:

The Java Thread Model, Understanding Threads, The Main Thread, Creating a Thread: extending Thread and implementing Runnable, Creating Multiple Threads, Thread Priorities, Synchronization, Deadlocks Inter-thread communication, Deadlocks.

Input/Output in Java

I/O Basics, Byte and Character Structures, I/O Classes, Reading Console Input, Writing to Console Output, Reading and Writing on Files, Random Access Files, Storing and Retrieving Object from File, Stream Benefits.

UNIT-III

Creating Applets in Java:

Applet Basics, Applet Architectures, Applet Life Cycle, Simple Applet Display Methods, Requesting Repainting, Using The Status Window, The HTML APPLET Tag, Passing parameters to Applets.

Networking:

Basics, networking classes and interfaces, Using java.net package, doing TCP/IP and Datagram Programming by Server Socket and Socket classes.

Java Data Base Connectivity (JDBC)

Database Connectivity – Relation Databases, JDBC API Reusing Database Objects, Transactions, Advance Techniques.

Working with Windows:

AWT Classes, Window Fundamentals, Working with Frame, Creating a Frame Window in an Applet, Displaying Information within a Window

UNIT-IV

Event Handling :

Two Event Handling Mechanisms, The Delegation Event Model, The Event Handling Process, Event Classes, Sources of Events, Event Listener Interfaces, Using the Delegation Event Model, Adapter Classes.

Java Servlet Programming

Role and Advantages of Java Servlets in Web application development.

HTTP Servlets – introduction, page generation, server side includes, servlet chaining, java Server Pages.

Servlet Life Cycle – Servlet Alternative, Reloading, Init and Destroy, Single Thread Model, Background Processing, Last modified times, Synchronization, Persistent state capabilities.

Retrieving Information – Initialization Parameters , Methodsof receiving information about Client- server and clients request.

Sending HTML Information – Structure of Response, Sending a Normal Response, Using Persistent Connection, HTML generation, Status Codes, HTTP HEADERS, Errors Handling.

Books Recommended:

1. Java-2 The complete Reference by Patrick Naughton and Herbertz Schildt, TMH.
2. Beginning JAVA- (JDK1.3Edition), Ivor Horton, WROX Public.
3. Thinking in Java, Bruce Eckel.
4. JAVA-2 UNLEASHED, Tech Media Publications.
5. JAVA-2 (1.3) API Documentations.
6. “Programming with Java” ,by E Balaguruswamy.

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Bachelor of Technology (Information Technology)

Operating Systems (IT-357)

L	T	Theory	Sessional
4	1	100	40

UNIT-I

Introductory Concepts: Operating system functions and characteristics, historical evolution of operating systems , Real time systems, Distributed systems, Methodologies for implementation of O/S service, system calls, system programs, Interrupt mechanisms.

Processes: Processes model, Process states, process hierarchies, implementation of Processes , data structures used such as Process table, PCB creation of processes, context switching, exit of Processes.

Interprocess communication: Race conditions, critical sections, problems of mutual exclusion, Peterson's solution, producer- consumer problem, semaphores, binary semaphores, monitors, message passing.

UNIT-II

Process scheduling: objective, preemptive vs non-preemptive scheduling, comparative assessment of different algorithms such as round robin, priority based scheduling. FCFS, SJF, multiple queues with feedback

Deadlocks: Conditions, modeling, detection and recovery, deadlock avoidance, deadlock prevention.

Memory Management: Multiprogramming with fixed partition, variable partitions, virtual memory, paging, demand paging, design and implementation issues in paging such as page tables, inverted page tables, page replacement algorithms, page fault handling, working set model, local vs, global allocation page size, segmentation with paging.

UNIT-III

File systems: File type, attributes, access and security, file operations, directory structures, path names, directory operations, implementation of file systems, implementation of file and file operation calls, implementations of directories , sharing of files disk space management, block allocation, free space management , logical file system, physical file system.

Device management: Techniques for device management ,dedicated devices, shared devices, virtual devices; device characteristics- hardware considerations : input & output devices , storage devices: independent device operation, buffering, multiple paths, device allocation considerations.

UNIT-IV

Distributed Systems: Introduction to P2P and S/W concepts in distributed systems, Network operating systems and NFS, NFS architecture and protocol , client – Server model, distributed file systems, RPC Basic operations, parameter passing. RPC semantics in presence of failures threads and thread packages.

Case studies: Unix/Linux: Implementation of processes, memory model, file system, deadlock handling strategies, scheduling, IPC, system calls.

WINDOWS-NT: Layered structure, interpretability.

Books Recommended:

1. Peterson, J.L. & Silberschatz, A., "Operating System Concepts" Addison Wesley.
2. Brinch, Hansen, "Operating System Principles" , PHI.
3. Tanenbaum, A.S. "Operating System", PHI.

Note:- There will be 8 questions in all .Two questions will be set from each unit. Students are required to attempt five questions selecting at least one question from each unit.

V Semester(B.Tech.) Information Technology IT-357 (Multimedia & Virtual Reality)

L	T	Theory	Sessional
4	1	100	40

UNIT-I

Basics of Multimedia Technology

Computers, communication and entertainment; multimedia an introduction & emerging applications; framework for multimedia systems; multimedia devices; CD-Audio, CD-ROM, CD-I, multimedia presentation and a authoring professional development tools.

Audio, Video & Image:Digital representation of sound; transmission of digital sound, MPEG Audio; audio compression & decompression; brief survey of speech recognition and generation; audio synthesis; musical instrument digital interface; Evaluating A compression system- redundancy and visibility – video compression techniques – the IPEG image compression standard –the MPEG motion video compression standard – DVI technology.

UNIT-II

Multimedia File Systems and Information Models:

The case for multimedia information Systems – File Support for continuous media- data models for multimedia and hypermedia information ,Multimedia presentation and authoring : current state of industry – design paradigms and user interface- barriers to widespread use Multimedia System service architecture, media stream protocol ,services & window system, client control of continuous media, file system support.Hyper applications.

UNIT-III

Multimedia Communications Systems:Multimedia services over the public network: Requirements, Architecture and Protocols- Applications –Network services – network protocols – Multimedia interchange: Quick Time Movie File (QMF) format- MHEG (Multimedia and Hypermedia Information Encoding Expert Group)- format function and representation summary – real- time interchange – Multimedia conferencing: teleconferencing systems.

Animation:Introduction, Basic Terminology techniques ,Motion Graphics 2D& 3D animation. Introduction to MAYA(Animating Tool): Fundamentals, Modeling: NURBS, Polygon ,Organic, animation, paths & boxes, deformers, Working with MEL: Basics & Programming Rendering & Special Effects: Shading & Texturing Surfaces, Lighting, Special effects.

UNIT-IV

Virtual Reality:Applications of multimedia, intelligent multimedia system, desktop virtual reality, VR operating system, virtual environment displays and orientation making; visually coupled system requirements; intelligent VR software systems.

Books Recommended:

1. David Hilman, “Multimedia Technology & Applications” , Galgotia Pub.
2. John. F.Koegenbuford, Multimedia systems. AWP ,1994.
3. An introduction ,Villamil & Molina, Multimedia Mc Milan , 1997.
4. Multimedia: Sound & Video, Lozano, 1997 , PHI, (Que)

Reference Books:

1. Production ,planning and delivery, villamil & Molina, Que , 1997
2. Multimedia on the PC, Sinclair, BPB.

3. Multimedia in action by Jeff coate Judith , 1995 , PHI.
4. Multimedia System by Koegel, AWL.

Note:- There will be 8 questions in all .Two questions will be set from each unit.

Students are required to attempt five questions selecting at least one question from each unit.

V Semester B.Tech. (Information Technology)
Web Designing Lab (IT-361)

L T P
- - 3

Sessional : 40
Exam. 25

1. Design the following Form on WEB page:-
E\mployee Details of the Company

Type the Password

Employee Code Employee Name

City

Benefits Daily

Department

Sales
Accts.
Mkt.
HRD

Grade A B

2. Create a web page with four frames, first frame has picture, second frame has a table showing the details of students in your class, third frame has a list of syllabus of your semester and last frame a hyperlink to a different web page.
3. (a) Write a program in JAVASCRIPT to check that the string is palindrome or not.
(b) Write a program in JAVASCRIPT to shake the window.
4. Write a program in JAVASCRIPT to make a simple calculator.

5. (a) Write a program in JAVASCRIPT to display all the information about the browser, you are using in the lab.
(b) 1. Write a program in javaScript to display Count value, which counts the number of times mouse Over event occurred on placing mouse on a link.
2. Write a program in JAVASCRIPT, which will response to the mouse & keyboard events
6. (a) Write a program in JAVASCRIPT to display a digital clock.
(b) 1. Write a program in JAVASCRIPT which will show the current date & time.
2. Convert that date & time into another format.
7. (a) Write a program in JAVASCRIPT to make a personalize welcome page.
(b) Redirect the user to the e-mail form page after 20 seconds.
8. (a) Write a program in JAVA Script to make an email registration form.
(b) Validate all the input fields.
(C) Display all user details on a new page.
9. Create a page (open.html) with a link "open new window". On clicking the link, call a java Script function to open a page (new.html) in a new window with attributes no toolbar, no resize, no scroll bar, height = 200, width = 200. Take your name as input in this page & clicks submit. Display the name entered in the page "open.html".
10. (a) Design (college_year_branch_student.xml), which describes data about college students.
(b) Display the above xml page in an html page as data island.
11. (a) Create & use style – sheet (CSS) for login & display detail page.
(b) Create & use style-sheet (XSL) for xml page used in 10th practical.
12. Create web pages for an organization like College giving details about various Departments, Faculty Members, Its Foundation, various Achievements etc. using different features of web designing.

V Semester B.Tech. (Information Technology)
Network Programming lab (IT-365)

T	P	Sessional	:	40
-	3	Exam	:	25

1.(a) Write a program for the following:

- To implement an integer stack. Which can hold 10 values.
- To convert an integer to its binary equivalent.

2. (a) Write a program to implement the concept of inheritance having a base class representing a person, derived from this class make two classes, one about the students and other about employees. Input & output this information about students & employees.
(b) Implement Function overloading concept.
3. Write a program to copy the contents of source file into destination file, handling the exceptions.
4. Write a program to implement the buffering concept in which producer products the data and consumer consumes it using the threading concept
5. Create an applet which create another thread which will move a string message continuously.
6. Write a program for the following:
- To demonstrate mouse event handlers.
 - To demonstrate key event handlers.
7. Create a frame window in which there are two text boxes to input integers and another text box for their sum. The sum is displayed on the click of a button.
8. Write a program for Client and Server AND establish communication between them.
9. Write a program using servlets and a web page using HTML so as to print the dynamic response from the servlets when the web page is submitted.
10. Create a database using MS-Access and access this database in your program using JDBC.

V Semester B.Tech. (Information Technology)
Digital & Data Communication Lab (IT-363)

L	T	P	Sessional	:	25
-	-	2	Exam	:	25

1. Perform amplitude modulation/ demodulation and calculate modulation index and percentage (%age) modulation.
2. Perform frequency modulation for calculating frequency deviation (DF) and modulation index.
3. Prove and perform sampling theorem for various bit rate (eg. 8kbps,16 kbps, 3 kbps, 64 kbps.)
4. Convert analog signal into digital using delta modulation / demodulation.
5. Prove and perform “adaptive delta modulation / demodulation” to reduce the quantization voice.
6. Perform and verify the following A/D converting modulation / demodulation Technique using:
 - (i) PAM
 - (ii) PPM
 - (iii) PWM
7. Analyze the pulse code modulation (PCM) system and perform A/D conversion using PCM
8. Prove and perform multiplexing using time division multiplexing technique.
9. Analyze and establish a PC To PC communication using RS.-232 DTE-DCE interface.
10. Establish a transmitter and receiver link using optical fiber.

V Semester B.Tech. (Information Technology)
Multimedia & Virtual Reality Lab (IT-367)

L	T	P	Sessional	:	25
-	-	2	Exam	:	25

1. Perform the following using Movie Star:
 - Video Capturing
 - Video Editing and
 - Creating Video CD.

2. Animate a ball by changing its color, size, shape & position using frame and tweened animation in Flash
3. Using Adobe Deluxe Photoshop edit a digital photo by changing the background color, changing the theme, changing the part of the photo , creating the different parts of the photo and edit them.
4. Animate the following using GIF animator:
 - Image
 - Banner Text

5. Write a program to simulate the game of Pool Table.
6. Transform a alphabetical string into circle and then change it again in to alphabetical string.
7. Perform the following using Multimedia Software:
 - Clip a portion of an audio wave file
 - Add another audio file to the above clipped file.

8. Perform the following using multimedia software.
 - Extract audio from video file like .avi / .dat / mpeg and save it in mp3
 - Change the format of above audio file into midi / wav / asf / wm / cda

9. Perform the following using multimedia software:

- Capture video with web camera
- Add the required audio
- Synchronize the Audio and Video

10. Create a documentary film of your Department which includes audio , video, graphics, images and Animation.