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Course : US06CBCA01
(Server-side Web Programming)

Credits : 4
Lectures per week : 4

All units carry equal weightage.

1. Introduction
   - ASP.NET – Introduction, overview of ASP.NET framework
   - Understanding ASP.NET controls
   - Understanding ASP.NET pages
   - Advantages of ASP.NET
   - Web Servers – introduction and role
   - Internet Information Server (IIS) – introduction
   - ASP.NET application - introduction
   - Creating ASP.NET page, understanding the ASP.NET page execution
   - The Page class

2. ASP.NET Standard Controls and Validation Controls
   - Using standard controls : Label, TextBox, CheckBox, Button, RadioButton, LinkButton, ImageButton
   - Client side validation vs. server side validation
   - Overview of the validation controls
   - Using RequiredFieldValidator control, RangeValidator control, CompareValidator control, RegularExpressionValidator control, CustomValidator control, ValidationSummary control
   - Overview of various rich controls

3. State Management and Advanced Concepts
   - Introduction
   - View State : example, making view state secure, retaining member variables, storing custom objects
   - Transferring information, custom cookies, session state, session state configuration, application state
   - The Global.asax Application file
   - Login Controls
   - Site Navigation and Site Maps

4. Database Processing and Security
   - ADO.NET Architecture - connected and disconnected
   - ADO.NET basics – data provider, connection, command, DataReader, DataSet, DataAdapter
   - Data Binding
   - Introduction to data controls – GridView, DetailsView, FormView, Repeater, DetailsView
   - Website Security
MAIN REFERENCE BOOKS:
2. Stephen Walther: ASP.NET 2.0 Unleashed by Sams Publication
3. Scott Mitchell: Teach Yourself ASP.NET 2.0 in 24 Hours by Sams Publication

BOOKS FOR ADDITIONAL READING:
1. Steven Holzner: VB.NET Black Book by Dreamtech publication
**Course : US06CBCA02**  
*(Computer Networks)*

Credits : 4  
Lectures per week : 4  

All units carry equal weightage.

1. **Introduction**  
   - Computer networks: definition and advantages  
   - Classification of computer networks  
   - Introduction and differences among Local Area Networks (LANs), Metropolitan Area Networks (MANs), Wide Area Networks (WANs)  
   - Uses of Computer Networks  
   - Meaning of the basic terms: topology, data rate, modulation rate, spectrum, bandwidth, server, host

2. **Data Communication Fundamentals**  
   - Various types of transmission media - guided transmission media: magnetic media, twisted pair, coaxial cables, fiber optics  
   - Introduction to the concept of modulation, types of modulation, serial transmission vs. parallel transmission, synchronous transmission v/s asynchronous transmission, circuit switching, packet switching  
   - The concept of multiplexing, Frequency Division Multiplexing (FDM) vs. Time Division Multiplexing (TDM)

3. **Layered Protocols and Satellite Communication**  
   - Protocol significance and hierarchies  
   - Design issues for the layers  
   - The OSI Reference model  
   - Examples of protocols for different layers of the OSI model  
   - Introduction to wireless networks  
   - Communication satellites  
   - Introduction to geosynchronous satellites

4. **Local Area Network Technology and Networking Devices**  
   - Types and characteristics of Local Area Networks  
   - LAN Topologies: Bus, Star, Ring, Tree, Complete (Mesh)  
   - Introduction to Carrier Sense Multiple Access (CSMA) protocol for LAN  
   - Functions of various networking components: modems, amplifiers, repeaters, hubs, switches, bridges, routers, gateway

**MAIN REFERENCE BOOKS :**
Course : US06CBCA03
(Business Information Systems)

Credits : 4
Lectures per week : 4

All units carry equal weightage.

1. Introduction to Information Systems and Information Technology
   - Introduction to Information Systems, Information as a Corporate Scenario
   - Managerial effectiveness and Information, Information needs and managerial levels, Process of generation of information
   - Introduction and meaning of Information Technology
   - Role of IT in a Business, IT infrastructure and Resources
   - Issues involved in IT Implementation
   - Advantages and disadvantages of IT in a business
   - Quality of Information

2. Business Information Systems
   - Introduction
   - The evolution and types of Information Systems, Users of Business Information Systems, Components of a Business Information Systems
   - IT support at different Organizational Levels
   - Managing Information Technology in Organizations

   - Basic business functions
   - Marketing function and information needs, Finance function and information needs, Production function and information needs, Human resource function and information needs
   - Information Management as business function
   - Integration of Business functions
   - DSS : introduction, objectives, advantages and disadvantages
   - Enterprise Decision Support

4. Advanced Information Systems
   - Group DSS, Global Positioning System (GPS) and Geographical Information System (GIS)Business Portals – introduction, architecture, advantages and disadvantages
   - Data visualization technologies
   - Knowledge Management and Organizational Knowledge Bases
   - Knowledge Discovery and Analysis

MAIN REFERENCE BOOKS :
Course: US06CBCA04
(Practicals)

Credits: 6
No. of laboratory hours per week: 12

University examination duration: 4 Hours

Part-I: Weightage-50%
   In-house project development
Part-II: Weightage-50%
   Practical based on US06CBCA01: ASP.NET
Course: US06FBCA01  
(System Software)

Credits: 4  
Lectures per week: 4

All units carry equal weightage.

1. Language Processors and Compilers
   - Introduction to language processing
   - Language processing activities: program generation, program execution, program interpretation
   - Meaning of analysis and synthesis in language processing
   - Introduction to compilers
   - The analysis-synthesis model of compilation
   - The phases of a compiler

2. Fundamentals of Assembly Language and Assemblers
   - Elements of assembly language programming
   - Description of a simple assembly language
   - Description of different types of assembly language statements: imperative statements, declaration statements, assembler directives
   - Advantages of assembly language
   - A simple assembly scheme: design specification of assemblers, phases and data structures
   - Design of a two pass assembler

3. Editors, Linkers and Loaders
   - Editors: line editors, stream editors, screen editors, word processors, structure editors, design of editors
   - Translated, linked and load time addresses
   - Relocation and linking concepts: program relocation, performing relocation
   - The process of linking
   - The concept of loading

4. System Software Tools
   - List of software tools for program development and their description
   - Debug monitors
   - Producing debug information
   - Programming environments
   - User interface tools

MAIN REFERENCE BOOKS:
Course: US06EBCA01
(Network Security)

Credits: 2
Lectures per week: 2

All units carry equal weightage.

1. Introduction
   - Attacks, services and mechanism
   - Security attacks
   - Security services
   - A model for network security

2. Cryptography
   - Introduction
   - Conventional encryption principles
   - Basic terms: plaintext, ciphertext, cryptography, cryptanalysis
   - Substitution ciphers vs. transposition ciphers
   - Types of attack on encrypted messages
   - Introduction to public key cryptography
   - Applications for public key cryptosystems

3. System Security
   - Intruders
   - Viruses and related threats: trap doors, logic bombs, trojan horses, viruses, worms, bacteria
   - The nature of viruses
   - Types of viruses
   - Antivirus approaches: detection, identification and removal

4. Network Security
   - Digital signatures
   - Firewalls: introduction, design principles, characteristics, types, configuration

Main Reference Books:
Course: US06EBCA02  
(Multimedia Application Development)

Credits: 2  
Lectures per week: 2  

All units carry equal weightage.

1. Introduction  
   - Multimedia: meaning  
   - Various facets of multimedia: audio, text, graphics, animation, video  
   - Classification of multimedia technology  
   - Multimedia: hardware/software essentials, different categories of multimedia software.

2. Working with Audio, Text and Graphics  
   - Multimedia audio: introduction, digital audio and sound card fundamentals, sound card functionalities, audio jacks, connectors, digital audio playback, audio editing  
   - Multimedia text: introduction, designing text for multimedia, hypermedia, hypertext  
   - Multimedia graphics: introduction, basic concepts of colour displays, monitor video modes, colour monitors and their parameters, graphics in multimedia projects

3. Working with Video and Animation  
   - Multimedia video: introduction, video in multimedia projects, digital video fundamental, full motion and full screen videos, digital video files sizes, digital video production techniques – video production in multimedia, shooting the sequences, video capture techniques, video capture boards, video capture software, editing video, embedding sound clips  
   - Multimedia Animation: introduction, classifications, two-dimensional animation and three dimensional animation technology, animation development process, names of animation software tools for 2D and 3D

4. Multimedia Project  
   - Multimedia project design concepts – introduction, concept and design, various facets, media content design and development, interface design and development process,  
   - Multimedia authoring: introduction, multimedia programming vs. multimedia authoring, selection between authoring and programming tool, authoring methodologies, characteristics of authoring tools

MAIN REFERENCE BOOKS:  