SARDAR PATEL UNIVERSITY

PGDCA

(Under Choice Based Credit Scheme)

Semester - II

(Syllabus with effect from June 2020)

COURSE NO: PS02CDCA31 *w.e.f. June 2020*

MULTIMEDIA TECHNOLOGY

(3 Lectures & 1 Seminar/Tutorial per Week Total Marks: 100)

COURSE CONTENT:

1. **Multimedia Technology - I**
   - Introduction to Multimedia with its applications
   - Multimedia facets
   - Multimedia hardware & software
   - Introduction of digital medium
   - Digital audio, multimedia texts & hypermedia
2. **Multimedia Technology - II**
   - Graphics
   - Animation: two-dimensional and three-dimensional animation
   - Digital video and basic concept for color display
   - Multimedia project design / development concepts
   - Multimedia authoring, characteristics of authoring tools, authoring methodologies and multimedia programming
3. **Working with Audio and Video**

- Introduction digital audio, characteristic of digital audio, various audio file formats, application of digital audio, popular software for creating digital audio

- Working with digital audio software : components, producing digital audio, various audio effect, mixing multiple audios, etc.

- Introduction digital video, characteristic of digital video, various video file formats, application of digital video, popular software for creating digital video

- Working with digital video software : components, producing digital video, various operations on digital video

4. Animation Software Tool

- Introduction to animation software tool, examples of animation software tools

- Application and features of animation software tool

- Environment of tool : components, menus, canvas, toolbox, drawing facility, shapes, objects, texts, color

- Creating simple animation, creating effective animation using layers, gradients, filters, distortions, transformations

MAIN REFERENCE BOOKS:

1. S. Gokul: Multimedia Magic, BPB Publication, 1998
2. Manuals of Audio & Video Software

ADDITIONAL REFERENCE BOOKS:

1. Tay Vaughan: Multimedia Making it Work , McGrawHill, Eight Edition, 2011
2. Prabhat K. Andeigh, Kiran Thakrar : Mulitmedia Systems Design, Pearson, 2015

COURSE NO: PS02CDCA32 *w.e.f. June 2020*

NETWORK FUNDAMENTALS

(3 Lectures & 1 Seminar/Tutorial per Week Total Marks: 100)

COURSE CONTENT:

1. Introduction And Data Communication Fundamentals

1. Computer Networks – definition and advantages
2. Transmission Technology in Broadcast Networks and Point-to-Point Networks
3. Introduction to Local Area Networks, Metropolitan Area Networks, Wide Area Networks
4. Transmission Media – Guided and Unguided
5. The Theoretical basis for data communication

2. Protocol Hierarchies, Reference Models and Transmission Techniques

6. Protocol Hierarchies, Design Issues for the Layers
7. The OSI Reference Model
8. The TCP/IP Reference Model
9. Multiplexing
10. Circuit Switching, Message Switching, and Packet Switching Techniques

1. 3. Local Network Technology

11. Local Area Network Topologies and Characteristics
12. Carrier Sense Multiple Access Protocols
13. The IEEE Standard 802.3 and Ethernet
14. Network devices

1. 4. The Internet

15. Introduction to World Wide Web
16. Electronic Mail – Architecture and Services
17. Domain Name System(DNS), The DNS Name Space, Name Servers, URL
18. Introduction to Satellite Networks , Geosynchronous Satellites , Medium-orbit satellites,

Low-Orbit Satellite

MAIN REFERENCE BOOKS:

1. Tanenbaum A. S.: Computer Networks, 5th Edition, Prentice-Hall of India Pvt. Ltd., New Delhi, 2016.
2. Forouzan B. A.: Data Communications and Networking, 4th Edition, Tata McGraw-Hill, 2017.

BOOKS FOR ADDITIONAL READING:

1. Stallings W.: Data and Computer Communications, Pearson Education India; 9th Edition (2013)

COURSE NO: PS02CDCA33 *w.e.f. June 2020*

OBJECT ORIENTED PROGRAMMING

(3 Lectures & 1 Seminar/Tutorial per Week Total Marks: 100)

COURSE CONTENT:

1. Object Modeling

1.Key concepts of Object Modeling

2.Introduction to UML, Types of UML diagrams - structural and behavioral

3.Structural UML Diagrams - Class diagram, Object diagram

4.Behavioral UML Diagrams – Use case diagram, Activity diagram, Sequence diagram

2. Basic Java Programming Concepts

- Structure of Java Program
- Concept of Bytecodes and platform independence
- Primitive Data Types, Variable Names, Scope, Operators, Expressions,
- Control Flow Statements
- Arrays

3. Classes, Objects and Methods:

5.Class, Object, Object reference, Constructor, Constructor Overloading,

6.Method Overloading, Passing and Returning object form

7.Method, new operator, this and static keyword, finalize() method, Access

8.Control Modifiers, Nested class, Inner class

4. Inheritance, Interfaces and Exception handling

9.Use of Inheritance, Inheriting Data members and Methods, constructor in

10. inheritance, Multilevel Inheritance

11. Creation and Implementation of an interface, Interface reference

12. Introduction to the Concept of Exception Handling

MAIN REFERENCE BOOKS:

1. Patrick Naughton and Herbert Schildt, The Complete Reference Java 2, Seventh, Tata McGraw Hill Pub., 2007
2. Ram Baugh J., etc., Object Oriented Modeling and Design, Prentice Hall of India, 1996.
3. Mary Campione, Kathy Walrath and Alison Huml, Java Tutorial, third edition, Addison Wesley Pub., 1998.

COURSE NO: PS02CDCA34 *w.e.f. June 2020*

.NET TECHNOLOGY

(3 Lectures & 1 Seminar/Tutorial per Week Total Marks: 100)

COURSE CONTENT:

1. The .NET Technology

4. Introduction to .NET Framework
5. Architecture of .NET framework – BCL (Base Class Library), CLR (Common Language Runtime), etc.
6. Types of applications supported by .NET Technology
7. .NET Languages - introduction

2. C# .NET-I

8. C#.NET – Introduction and features
9. General structure of C#.NET program
10. User interface development using Windows Forms
11. C#.NET – basic data types, variable, constant
12. C#.NET – statements (conditional and looping)
13. Type conversion - Boxing and Unboxing

3. C# .NET-II

14. Class fundamentals, OOPS concepts
15. Arrays, Lists, Collections and iterating over them, Exception handling,
16. Database programming – ADO.NET (architecture, connected and disconnected mode)
17. Generating reports

4. ASP.NET

- Introduction to ASP.NET
- ASP.NET Web Application Project – introduction, creation
- ASP.NET Web form - introduction, creating web forms
- ASP.NET Page – layout, lifecycle
- ASP.NET Controls - adding server controls to a Web Form, adding event procedures to Web Server Controls, Implementing code-behind pages
- Creating Master Pages, themes and skins

MAIN REFERENCE BOOKS:

1. C# 2010 Programming covers .NET 4.0, Black Book, Dreamtech Press.
2. Beginning Microsoft Visual C# 2008, Wrox Publication.
3. C# 4.0 in a Nutshell, Authors: Joseph Albabari & Ben Albabari, O'Reilly.
4. Documentation of relevant software packages

COURSE NO: PS02CDCA35 *w.e.f. June 2020*

WEB TECHNOLOGY

(3 Lectures & 1 Seminar/Tutorial per Week Total Marks: 100)

COURSE CONTENT:

1. Web Browsers and HTML Editors

5. Introduction to web browsers, Client server technology
6. Basics of HTTP, HTML, URL and IP Addresses.
7. HTML editors (Macromedia Dreamviewer, Microsoft Visual studio, Net beans etc.) with their different styling tools and uses.
8. Creation of sample HTML document using different HTML editors.

2. Web Page Designing-I

9. HTML Generator,
10. HTML Documentation, Tag, Links and Examples
11. Manipulating Header, footer, Colours, Comments, Alignment, Paragraph, Tab, Images and Pictures
12. Order and Unordered Lists, Nested Lists

3. Web Page Designing-II

13. Tables Formatting and Editing Features
14. Defining different Styles, In-line, Internal, External Style Sheets, Linking of Sheets in HTML Documents, Working with Multiple Styles.
15. Definition of Frames, Framesets, Nested Framesets
16. Action, Method, Enctype attributes of Forms, Drop down lists and examples.

4. JavaScript

1. Introduction to JavaScript, uses and applications
2. Syntax, functions, comments, variables, operators with examples
3. Dates, string and array with example.
4. Case study (Creation of sample web site with JavaScript and DHTML)

MAIN REFERENCE BOOKS:

1. Xavier C : World Wide Web Design With HTML, Tata McGraw Hill Publication, 2000
2. Beginning JavaScript Fifth Edition by Jeremy McPeak and Paul Wilton, Wrox Publication, 2017.

BOOK FOR ADDITIONAL READING :

1. Douglas E Commerce: The Internet, PHI, Second Edition, May 2000
2. Manuals of Suitable Packages

COURSE NO: PS02CDCA36 *w.e.f. June 2020*

Practicals