DEPARTMENT OF COMPUTER APPLICATIONS

B.C.A. - SECOND YEAR
(2015-2016 REGULATION)

FOURTH SEMESTER

LESSON PLAN

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

FACULTY OF SCIENCE AND HUMANITIES

SRM NAGAR, KATTANKULATHUR – 603 203

Semester	Course Code	Course Title	L	T	P	Total of LTP	C
III	UCA15401	COMPUTER NETWORKS	3	2	0	5	4

UNIT – I (15 Hours)

History and Need for Networking - Service Description – Connectionless and Connection-Oriented Services – Circuit and Packet Switching – Access Networks and Physical Media – Wireless Links and Characteristics – OSI Reference Model - Service Models –Ad-hoc network, GPS, Sensor network.

UNIT – II (15 Hours)

Principles of Network Applications – The Web and HTTP – FTP – Electronic Mail – SMTP – Mail Message Formats and MIME – DNS – Socket Programming with TCP and UDP. multimedia Networking: Internet Telephony – RTP – RTCP – RTSP. Network Security: Principles of Cryptography – Firewalls – Application Gateway – Attacks and Counter measures.

UNIT – III (15 Hours)

Transport Layer Services – Multiplexing and Demultiplexing – UDP – Reliable Data Transfer – Go-Back-N and Selective Repeat. Connection-Oriented Transport: TCP – Segment Structure – RTT estimation – Flow Control – Connection Management – Congestion Control – TCP Delay Modeling – SSL and TLS. Integrated and Differentiated Services: Intserv – Diffserv.

UNIT – IV (15 Hours)

Forwarding and Routing – Network Service Models – Virtual Circuit and Datagram Networks – Router – Internet Protocol (IP) – IPv4 and IPv6 – ICMP – Link State Routing – Distance Vector Routing – Mobile IP

UNIT – V (15 Hours)

Layer Services – Error Detection and Correction Techniques – Multiple Access Protocols – Link Layer Addressing – ARP – DHCP – Ethernet – Hubs, Bridges, and Switches –PPP. Ring Topology - Physical Ring – Logical Ring.

TEXT BOOK :

1. James F. Kurose and Keith W. Ross (2006), “Computer Networking: A TopDown Approach Featuring the Internet”, Pearson Education, 3rd edition,.

REFERENCES:

1. Andrew S. Tanenbaum (2003), “Computer Networks”, Prentice-Hall of India, 4th edition.

2. Larry L. Peterson and Bruce S. Davie (2007), "Computer Networks: A Systems Approach", Elsevier, 4th edition.

LESSON PLAN

Subject Code : UCA15401

Subject Name : COMPUTER NETWORKS

UNIT - I		
Lecture Hour	**Description**	**Reference with Chapter**
1	History of networks	TB1, Ch1
2	Need for Networking	TB1, Ch1
3	Service Description	TB1, Ch1
4	Connection less Services	TB1, Ch1
5	Connection Oriented Services	TB1, Ch1
6	Circuit Switching	TB1, Ch1
7	Packet Switching	TB1, Ch1
8	Access Networks in Physical Media	TB1, Ch1
9	Wireless Links and Characteristics	TB1, Ch1
10	Wireless Links and Characteristics	TB1, Ch1
11	OSI Reference Model	TB1, Ch1
12	Service Models	TB1, Ch1
13	Adhoc Network	TB1, Ch1
14	GPS	TB1, Ch1
15	Sensor Network	TB1, Ch1

UNIT - II		
Lecture Hour	**Description**	**Reference with Chapter**
16	Principles of Network Applications	TB1, Ch 2
17	The Web	TB1, Ch 2
18	HTTP	TB1, Ch 2
19	FTP	TB1, Ch 2
20	Electronic Mail	TB1, Ch 2
21	SMTP	TB1, Ch 2

22	Mail Message Formats and MIME	TB1, Ch 2
23	Domain Naming Services (DNS)	TB1, Ch 2
24	Socket Programming with TCP	TB1, Ch 2
25	Socket Programming with UDP	TB1, Ch 2
26	Multimedia Networking	TB1, Ch 6
27	Internet Telephony, RTP, RTCP, RTSP	TB1, Ch 6
28	Network Security, Firewalls	TB1, Ch 7
29	Application Gateway	TB1, Ch 8
30	Attacks and Counter measures	TB1, Ch 8

UNIT - III		
Lecture Hour	**Description**	**Reference with Chapter**
31	Transport Layer Services	TB1, Ch 3
32	Multiplexing	TB1, Ch 3
33	Demultiplexing	TB1, Ch 3
34	UDP, Reliable Data transfer	TB1, Ch 3
35	Go-Back-N and Selective Repeat	TB1, Ch 3
36	Connection Oriented transport, TCP	TB1, Ch 3
37	Segment Structure	TB1, Ch 3
38	RTT Estimation	TB1, Ch 3
39	Flow Control	TB1, Ch 3
40	Connection Management	TB1, Ch 3
41	Congestion Control	TB1, Ch 3
42	TCP Delay Modeling	TB1, Ch 3
43	SSL and TLS	TB1, Ch 3
44	Integrated and Differentiated Services	TB1, Ch 3
45	Intserv and Diffserv	TB1, Ch 3

UNIT - IV		
Lecture Hour	**Description**	**Reference with Chapter**
46	Forwarding and Routing	TB1, Ch 4

47	Forwarding and Routing	TB1, Ch 4
48	Network Service Models	TB1, Ch 4
49	Network Service Models	TB1, Ch 4
50	Virtual Circuit	TB1, Ch 4
51	Virtual Circuit	TB1, Ch 4
52	Datagram Networks	TB1, Ch 4
53	Router	TB1, Ch 4
54	Internet Protocol	TB1, Ch 4
55	IPv4	TB1, Ch 4
56	IPv6	TB1, Ch 4
57	ICMP	TB1, Ch 4
58	Link State Routing	TB1, Ch 4
59	Distance Vector Routing	TB1, Ch 4
60	Mobile IP	TB1, Ch 4

UNIT - V		
Lecture Hour	**Description**	**Reference with Chapter**
61	Layer Services	TB1, Ch 5
62	Error Detection and Correction Techniques	TB1, Ch 5
63	Error Detection and Correction Techniques	TB1, Ch 5
64	Multiple Access Protocols	TB1, Ch 5
65	Link Layer Addressing	TB1, Ch 5
66	ARP	TB1, Ch 5
67	DHCP	TB1, Ch 5
68	Ethernet	TB1, Ch 5
69	Hubs	TB1, Ch 5
70	Bridges	TB1, Ch 5
71	Switches	TB1, Ch 5
72	PPP	TB1, Ch 5
73	Ring Topology	RB1, Ch 1
74	Physical Ring	RB1, Ch 1

75	Logical Ring	RB1, Ch 1

Semester	Course Code	Course Title	L	T	P	Total Of LTP	C
IV	**UCA15402**	**WINDOWS PROGRAMMING USING VB .NET**	**4**	**1**	**0**	**5**	**4**

UNIT -I **(15 Hours)**

.NET FRAMEWORK AND VB.NET: Evolution of the .NET Framework–Overview of the .Net Framework –VB.NET –Simple VB.Net Program. VARIABLES, CONSTANTS AND EXPRESSIONS: Value Types and Reference Types –Variable Declarations and Initializations –Value Data Types –Reference Data Types –Boxing and Unboxing – Arithmetic Operators –Textbox Control –Label Control –Button Control.

UNIT -II **(15 Hours)**

CONTROL STATEMENTS: If Statements –Radio Button Control –CheckBox Control – GroupBox Control –ListBox Control –CheckedListBox Control –ComboBox Control – Select Case Statement –While Statement –Do Statement –For Statement. METHODS AND ARRAYS: Types of Methods–One Dimensional Array –Multi Dimensional Arrays – Jagged Arrays. CLASSES: Definition And Usage of a Class –Constructor Overloading – Copy Constructor –Instance and Shared Class Members –Shared Constructors.

UNIT –III **(15 Hours)**

INHERITANCE AND POLYMORPHISM: Virtual Methods –Abstract Class and Abstract Methods –Sealed Classes. INTERFACES, NAMESPACES AND COMPONENTS: Definition of Interfaces –Multiple Implementations of Interfaces –Interface Inheritance – Namespaces –Components –Access Modifiers. DELEGATES, EVENTS AND ATTRIBUTES: Delegates –Events–Attributes –Reflection

UNIT-IV **(15 Hours)**

EXCEPTION HANDLING: Default Exception Handling Mechanism –User Defined Exception Handling Mechanism –Throw Statement –Custom Exception.

MULTITHREADING: Usage Of Threads –Thread Class –Start(), Abort(), Join(), and Sleep() Methods –Suspend() And Resume() Methods –Thread Priority – Synchronization. I/O STREAMS: Binary Data Files –Text Files -Data Files –FileInfo and DirectoryInfo Classes.

UNIT -V **(15 Hours)**

ADDITIONAL CONTROLS: Timer –ProgressBar –LinkLabel –Panel –TreeView – Splitter –Menu –SDI & MDI –Dialog Boxes –Toolbar –StatusBar. DATABASE CONNECTIVITY: Advantages Of ADO.NET –Managed Data Providers –Developing a Simple ADO.NET Based Application–Creation of Data Table –Retrieving Data From Tables –Table Updating –Disconnected Data Access Through Dataset Objects

TEXT BOOK

1. Muthu C.(2008), ”Visual Basic.NET”, 2nd Ed., Vijay Nicole Imprints Pvt.Ltd.,.

REFERRENCES

1. Jeffrey R.Shaprio(2002),“Visual Basic .NET The Complete Reference”, Mac Graw Hill
2. Michael Halvorson (2010), “Visual Basic 2010 Step by Step”, Microsoft Press.
3. Harold Davis(2002),“Visual Basic.NET Programming”, Sybex.

LESSON PLAN

Subject Title : WINDOWS PROGRAMMING USING VB .NET

Subject Code: UCA15402

UNIT I		
Lecture Hour	**Description**	**Reference with chapter**
1	Evolution of the .NET Framework	TB1, Ch1: 1.1, 1.2
2	Overview of the .Net Framework	TB1, Ch1: 1.3
3	VB.NET Language	TB1, Ch1: 1.5
4	Development of Simple VB.Net Program	TB1, Ch1: 1.6
5	Value Types and Reference Types	TB1, Ch3: 3.1, 3.2
6	Variable declaration and Initialization	TB1, Ch3: 3.3
7	Value Data Types	TB1, Ch3: 3.4
8	Reference Data Types	TB1, Ch3: 3.5
9	Boxing and Unboxing	TB1, Ch3: 3.6
10	Arithmetic Operators	TB1, Ch3: 3.7
11	TextBox Control	TB1, Ch3: 3.8
12	Label Control	TB1, Ch3: 3.9
13	Button Control	TB1, Ch3: 3.10

UNIT II		
Lecture Hour	**Description**	**Reference with chapter**
14	Control Statements: If Statement	TB1, Ch4: 4.1, 4.2
15	RadioButton Control	TB1, Ch4: 4.3

16	CheckBox Control	TB1, Ch4: 4.4
17	GroupBox Control	TB1, Ch4: 4.5
18	ListBox Control	TB1, Ch4: 4.6
19	CheckedListBox Control	TB1, Ch4: 4.7
20	ComboBox Control	TB1, Ch4: 4.8
21	Select … Case Statement	TB1, Ch4: 4.9
22	While Statement	TB1, Ch4: 4.10
23	Do Statement	TB1, Ch4: 4.11
24	For Statement	TB1, Ch4: 4.12
25	Methods, Types of methods	TB1, Ch5: 5.1, 5.2
26	Arrays, One-dimensional Arrays	TB1, Ch5: 5.3, 5.4
27	Multidimensional Arrays	TB1, Ch5: 5.5
28	Jagged Arrays	TB1, Ch5: 5.6
29	Definition and Usage of a Class	TB1, Ch6: 6.1, 6.2
30	Constructor Overloading	TB1, Ch6: 6.3
31	Copy Constructor	TB1, Ch6: 6.4
32	Instance and Shared Class Members	TB1, Ch6: 6.5
33	Shared Constructors	TB1, Ch6: 6.6

UNIT III		
Lecture Hour	**Description**	**Reference with chapter**
34	Virtual Methods	TB1, Ch7: 7.1, 7.2
35	Abstract classes and Abstract Methods	TB1, Ch7: 7.3
36	Sealed Classes	TB1, Ch7: 7.4

37	Definition and Usage of an Interface	TB1, Ch8: 8.1, 8.2
38	Multiple Implementation of an Interface	TB1, Ch8: 8.3
39	Interface Inheritance	TB1, Ch8: 8.4
40	Namespaces	TB1, Ch8: 8.5
41	Components	TB1, Ch8: 8.6
42	Access Modifiers	TB1, Ch8: 8.7
43	Delegates	TB1, Ch9: 9.1, 9.2
44	Events	TB1, Ch9: 9.3
45	Attributes	TB1, Ch9: 9.4
46	Reflection	TB1, Ch9: 9.5

UNIT IV		
Lecture Hour	**Description**	**Reference with chapter**
47	Exception Handling, Default exception handing mechanism	TB1, Ch:10: 10.1, 10.2
48	User defined exception handling mechanism	TB1, Ch:10: 10.3
49	The Throw Statement	TB1, Ch:10: 10.5
50	Custom Exception	TB1, Ch:10: 10.6
51	Usage of Threads	TB1, Ch:11: 11.1, 11,2
52	Thread Class	TB1, Ch:11: 11.3
53	Start(), Abort(), Join() and Sleep() Methods	TB1, Ch:11: 11.4
54	Suspend() and Resume() Methods	TB1, Ch:11: 11.5
55	Thread Priority	TB1, Ch:11: 11.6

56	Synchronization	TB1, Ch:11: 11.7
57	I/O Streams	TB1, Ch:12: 12.1, 12.2
58	Binary Data Files	TB1, Ch:12: 12.3
59	Text Files	TB1, Ch:12: 12.4
60	Data Files	TB1, Ch:12: 12.5
61	FileInfo and DirectoryInfo Classes	TB1, Ch:12: 12.6

UNIT V		
Lecture Hour	**Description**	**Reference with chapter**
62	Timer Controls, ProgressBar Control	TB1, Ch:14: 14.3
63	LinkLabel Control, Panel Control	TB1, Ch:14: 14.5, 14.7
64	TreeView Control	TB1, Ch:14: 14.8
65	Splitter Window	TB1, Ch:14: 14.9
66	Menu Control	TB1, Ch:14: 14.10
67	SDI and MDI	TB1, Ch:14: 14.11
68	Dialog Boxes	TB1, Ch:14: 14.12
69	ToolBar Control, StatusBar Control	TB1, Ch:14: 14.13, 14.14
70	Database Connectivity – Introduction	TB1, Ch:15: 15.1
71	Advantages of ADO.NET, Managed Data Providers	TB1, Ch:15: 15.2, 15.3
72	Developing a Simple Ado.NET Based Application	TB1, Ch:15: 15.4
73	Creation of a Data Table, Retrieving Data from Tables	TB1, Ch:15: 15.5, 15.6
74	Table Updating	TB1, Ch:15: 15.7
75	Disconnected Data Access through Dataset Object	TB1, Ch:15: 15.8

Semester	Course Code	Course Title	L	T	P	Total Of LTP	C
IV	UCA15E54	WEB TECHNOLOGY	2	0	1	3	3

UNIT I – CSS **(9 Hours)**

Cascading Style Sheet: HTML CSS-Inline styles- Creating style sheets with the style elements- Building a web page.

UNIT II – DOM **(9 Hours)**

DOM model: Understanding DOM model. Objects in HTML, Browser, object, window, history, location, navigator, document object.

UNIT III – INTRODUCTION TO JAVA SCRIPT **(9 Hours)**

Java Script: Introduction to scripting-Operators: logical-Increment and decrement operators- control structures.

UNIT IV - FUNCTIONS, ARRAYS AND OBJECTS **(9 Hours)**

Functions: Definition-scope rules-recursion-Arrays: Declaring arrays- passing array to function-sorting arrays- object: math object-string object-data object- boolean object and number object, Handling event using java script.

UNIT V - INTRODUCTION TO XML **(9 Hours)**

XML-XML overview-features-HTML XML-processing instructions-application of XML-COMMENTS-XML names space – schema-Document Type Definition (DTD) – Extensible style language (XSL).

TEXT BOOKS

1. Ivan Bayross,(2005), ”Web enabled commercial application development using HTML, DHTML java script, peal CGI”, 3 rd Edition, BPB Publications, New Delhi.(Unit I & II)

2. H M Deitel, T.R. Nieto, (2011) ”Internet and world wide web How to program”, Fifth Edition, Prentice Hall of Indian Pvt. Ltd, New Delhi.(Unit III, IV,V)

LESSON PLAN

Subject Title : WEB TECHNOLOGY

Subject Code: UCA15E54

Unit I

Cascading Style Sheet: HTML CSS-Inline styles- creating style sheets with the style elements- Building a web page.

Lecture Hour	Description	Reference with chapter
1	Cascading Style Sheet	TB:II Chapter 5
2	HTML CSS	TB:II Chapter 5
3	Inline styles	TB:II Chapter 5
4	External style sheet	TB:II Chapter 5
5	Embedded style sheet	TB:II Chapter 5
6	Creating style sheets with the style elements	TB:II Chapter 5
7	Building a web page	TB:II Chapter 5

Unit II

DOM model: Understanding DOM model. Objects in HTML, Browser, Object, Window, History, Location, Navigator, Document object.

Lecture Hour	Description	Reference with chapter
8	DOM model	TB:IIChapter 12
9	Understanding DOM model	TB:IIChapter 12
10	Objects in HTML	TB:IChapter 9
11	Browser	TB:IChapter 9
12	Window	TB:IChapter 9
13	History	TB:IChapter 9
14	Location	TB:IChapter 9
15	Navigator	TB:IChapter 9
16	Document object	TB:IChapter 9

Unit III

Java Script: Introduction to scripting operators: Logical-Increment and decrement operators- Control structures.

Lecture Hour	Description	Reference with chapter
17	Java Script	TB:IIChapter 6
18	Introduction to scriptingoperators	TB:IIChapter 7.11
19	Logical	TB:IIChapter 8.9
20	Increment and decrement operators	TB:IIChapter 7.12
21	Control structures	TB:IIChapter 7.4

Unit IV

Functions: Definition-Scope rules-Recursion-Arrays: Declaring arrays- Passing array to function-Sorting arrays- Object: Math object-String object-Data object- Boolean object and Number object, Handling event using java script.

Lecture Hour	Description	Reference with chapter
22	Functions	TB:I Chapter 22.1
23	Definition	TB:I Chapter 22.2
24	Scope rules	TB:I Chapter 22.4
25	Recursion	TB:I Chapter 33.2
26	Arrays	TB:I Chapter 33.4
27	Declaring arrays	TB:I Chapter 33.6
28	Passing array to function	TB:I Chapter 33.7
29	Sorting arrays	TB:I Chapter 33.8
30	Object	TB:I Chapter 33.9
31	Math object	TB:I Chapter 33.10
32	String object	TB:I Chapter 33.11
33	Data object	TB:I Chapter 20.2
34	Boolean object	TB:I Chapter 20.3
35	Number object	TB:I Chapter 20.4
36	Handling event using java script	TB:I Chapter 20.5-20.7

Unit V

XML-XML Overview-Features-HTML XML-Processing Instructions-Application of XML-COMMENTS-XML namespace – Schema-Document Type Definition (DTD) – Extensible Style Language (XSL).

Lecture Hour	Description	Reference with chapter
37	XML overview	TB:I Chapter 36.1
38	Features	TB:I Chapter 36.2
39	HTML XML	TB:I Chapter 36.3
40	Processing instructions	TB:I Chapter 36.4
41	Applications of XML, COMMENTS	TB:I Chapter 36.5
42	XML namespace	TB:I Chapter 36.6
43	Schema	TB:I Chapter 36.7
44	Document Type Definition (DTD)	TB:I Chapter 36.7
45	Extensible style language (XSL)	TB:I Chapter 37.1