

- 3 -

**Dr. Babasaheb Ambedkar Marathwada University,
Aurangabad**

Revised Syllabus of
B.Sc. Computer Science
(Optional)
Semester – V and VI

Effective from 2016-17

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Curriculum Structure and Scheme of Evaluation: B.Sc. Computer Science (Optional)

Sr. No.	Course Code	Name of the Subject	Scheme of Teaching		Scheme of Evaluation(Marks)			Total Marks	
			T Hrs/ Week	P Hrs/ Week	University Theory Exam.	University Practical Exam.	Duration		
Semester V									
1	CSO15	Software Engineering	3		3	50	-	2	50
2	CSO16*	Web Designing	3		3	50	-	2	50
3	CSO16*	VB.Net	3		3	50	-	2	50
4	CSO17	Case Study	-	3	3	-	50	3	50
5	CSO18	Pr. Based on CSO16	-	3	3	-	50	3	50
Total of Semester – V			6	3	9	100	100		200

Semester VI										
1	CSO19	Data Communication and Networking	3		3	50	-	2	50	
2	CSO20*	Ethics and Cyber Low	3		3	50	-	2	50	
3	CSO20*	E-Commerce	3		3	50	-	2	50	
4	CSO21	Seminar	-	3	3	-	20	3	50	
5	CSO22	Project		3	3		80			
Total of Semester – VI			6	3	9	100	100		200	

* Indicate optional paper (any one from 2 and 3)

Semester V

Paper No.: CSO15
Paper title: Software Engineering

Comp. Sci. (Gen.) Semester : V

Unit –I

Software and Software Engineering

What is Software, Characteristics of software, categories of Software, attributes of WebApps, software Engineering, Software Process, Essence Software Engineering Practice, General Principles, Software Myths

Unit –II

Software Process and Process Models

Software process Model Process Flow, Process Models, Waterfall model, Incremental Process Model, Evolutionary Process Models, Concurrent Models, Specialized Process Models, The Unified Process, Personal and Team Process Models, Product and Process **Agile**

Introduction to Agility, Agility and the Cost of Change, Agile Process, Agility Principles, Human Factors, Extreme Programming (XP), XP Values, XP Process, Industrial, Critics of XP

Unit –III

Principles That Guide Practice

Principles That Guide Process, Principles That Guide Practice, Communication Principles, Planning Principles, Modeling Principles, Construction Principles, Deployment Principles

Books:

- 1) Software Engineering a Practitioner's Approach By Roger S. Pressman (Seventh Edition) McGraw Hill.
- 1) An Integrated Approach to Software Engineering, Pankaj Jalote, Narosa

Comp. Sci. (Gen.) Semester : V

Paper No.: CSO16*
Paper title: Web Designing

Unit -I**Introducing HTML5**

Understanding HTML, XHTML, and HTML5, Introducing semantic markup, Syntax, Attributes, Working with elements, Creating an HTML document
 Embedding content, Embedding HTML by using inline frames, Working with hyperlinks,
 Adding images to your HTML document, Embedding plug-in content

Advances of HTML5

HTML5 Layout container
 Format using <div> element
 Working with Tables: creating regular and irregular tables, heading, columns and rows, captions, header, footer.

Unit -II**Introducing JavaScript**

Basic of JavaScript
 JavaScript Variables, Operators & Its Precedence, Special Values,
 Predefined Built-In functions, Functions Declaration & Call
 String Functions

Conditions and looping structure,
 Inline JavaScript & External JavaScript

Advances in JavaScript

Object in JavaScript, Concept of array, how to use it in JavaScript, types of an array, array methods

DOM Concept in JavaScript, DOM Objects, DOM Search Methods

Event handling in JavaScript: Capturing & Bubbling, Subscribing, Unsubscribing and
 Cancelling Event, Windows Event, Keyboard and Mouse Events.

Unit -III**Cascading Style Sheet**

Introduction to CSS3

Defining and Applying a Style, Inline, Embedded and External Style Sheet.

Selectors: element, id and class selector, grouping selector, attribute,

Specificity and cascading

CSS properties: Color, box Model, border, padding, margin, float, clear

Books and References:

- 1) Programming in HTML5 with Javascript and CSS3 , Glenn Johnson
 (http://www.daoudisamir.com/references/vs_ebooks/html5_css3.pdf)
- 2) Beginning HTML5 and CSS3 By Richard Clark, Oli Studholme, Christopher Murphy and Divya Manian. (http://www.alvinisd.net/cms/lib03/TX01001897/Centricity/Domain/1077/beginning_html5_and_css3.pdf)
- 3) A Definitive Guide to HTML5 , By Adam Freeman

Paper No.: CSO16*
Paper title: VB.NET

Comp. Sci. (Gen.) Semester : V

Unit –I

Introduction: Introduction to .NET and .NET Framework, Difference between CUI & GUI, Event Driven Programming, the VB IDE, Operators, Conditional statements and looping statements. Sub Procedure, functions and exception handling

Unit –II

Windows Forms : General Properties, Events handling events like mouse, keyboard, Types of forms MDI, adding removing controls at run time.

Controls : The control class, Text Box, Rich Text Box, Label, Buttons, Checkbox, Radio Button, Panels, Group Boxes, List Box, Combo Box, Picture Box, Scroll Bars, Splitters, Track Bars, Pickers, Timer.

Unit –III

Object-Oriented Programming : Class and Object, Class Vs. Object Members, Creating Classes, Objects, Structures, Modules, Constructors, Data Members, Methods, Properties, Event

Books and References:

- 1) Visual Basic .NET Programming Black Book” by Steven Holzner, Dreamtech Press
- 2) “Mastering in Visual Basic .NET” by Evangelos Petroustos, Sybex Publication.

Paper No.: CS017
Paper title: Software Engineering Case Study
Comp. Sci. (Gen.) Semester : V

Using any Software engineering model case study on development of a software.

Paper No.: CS018
Syllabus of Computer Science (General), w.e.f.: 2014-15

Comp. Sci. (Gen.) Semester : V

Paper title: Web Designing if Selected

1. Create a simple website by using Visual Studio Express
2. Create additional pages
3. Embedding Content
4. Create a webpage using `<table>` and `<div>` elements
5. Create a webpages using conditional and looping statements.
6. Create a calculator webpage
7. Create a Webpage to introduce National Bird/Animal/Emblem/Flower
8. Learn more about positioning by adding more `<div>` elements to the webpage to define a header and footer for the page. Use CSS style rules to set the position.
9. Learn more about CSS selectors by adding more elements to the page and try setting the format by selecting the elements without using an id.
10. Learn more about colors by changing the color scheme, using RGB values.

Paper No.: CS018

Comp. Sci. (Gen.) Semester : V

Paper title: VB.NET if Selected

Minimum 12 Practical to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

Semester VI

Paper No.: CS019

Paper title: Data Communication and Networking

Unit - I

Introduction

Communication System, Components of communication system, Computer network Advantages and applications of computer n/w. point-to-point and multipoint line configuration, LAN, MAN and WAN. Analog and Digital signals, Data Transmission: Parallel and Serial, Synchronous and Asynchronous transmission, Transmission Mode: Simplex, half-duplex and full-duplex.

Network Topologies

Mesh, Star, Tree, Bus and Ring and Hybrid Topology (Advantages and disadvantages of each)

Unit - II

Transmission media

Guided and unguided media, Twisted-pair, UTP and STP cable, coaxial cable, Optical Fiber cable, Radio waves, Microwaves, Satellite Communication (*Transmission characteristics and advantages of each type*)

Modulation & Multiplexing

Concept of modulation and demodulation, Digital-to-analog conversion, Amplitude Shift Keying (ASK)/AM, Frequency Shift Keying (FSK)/FM, Phase Shift keying (PSK)/PM.

Unit - III

The Mobile Telephone System:

First Generation(1G), Second Generation(2G), Third Generation(3G), Internet over cable. Spectrum Allocation, cable Modem, ADSL Versus Cable.

Books:

- 1) Introduction to Digital and Data Communications, Michal A Miller, JAICO, publishing.
- 2) Data Communication and Networking: C.S.V. Murthy, Himalaya Publishing House
- 3) Data Communication and Networking :: Behrouz A. Forouzan; Mc-Graw Hill Pub.
- 4) Computer Networks by A. S. TANENBAUM, DAVID J. WETHERALL PRENTICE HALL Publication Software

Paper No.: CS020*

Paper title: Ethics and

Basic Concepts of Technology and Law, Understanding the Technology of Internet, Scope of Cyber Laws, Cyber Jurisprudence. Law of Digital Contracts The Essence of Digital Contracts.

Unit –II

The System of Digital Signatures. The Role and Function of Certifying Authorities. The Science of Cryptography, E-Governance, Cyber Crimes and Cyber Laws. Introduction to Intellectual Property.

Unit –III

Information Technology Act 2000 Cyber Law

Issues in E-Business Management. Major issues in Cyber Evidence Management, Cyber Law Compliancy Audit, The Ethics of Computer Security. Relevant Rules Notifications, Information Technology (Amendment) Act, 2008.

Books and References:

- 1) Godbole, "Information Systems Security", Willey
- 2) Merkov, Breithaupt, "Information Security", Pearson Education
- 3) Yadav, "Foundations of Information Technology", New Age, Delhi
- 4) Schou, Shoemaker, "Information Assurance for the Enterprise", Tata McGraw Hill
- 5) Sood, "Cyber Laws Simplified", Mc Graw Hill
- 6) Furnell, "Computer Insecurity", Springer A Definitive Guide to HTML5, By Adam Freemans

Paper No.: CS020*

Paper title: E-Commerce

Unit -I

Introduction, IT and business, E-commerce: Concepts Electronic Communication, PCs and Networking, E-mail, Internet and intranets. EDI to E-commerce, EDI, UN/EDIFACT

Unit -II

Concerns for E-commerce Growth, Internet bandwidth, Technical issues, Security issues. India E-commerce Readiness, Legal issues, Getting started. Security Technologies: Encryption, Symmetric key Encryption, Public key encryption, Public key encryption using digital Signatures. Hashing techniques, Certification and key Distribution, Cryptographic.

Unit -III

The elements of E-commerce. SSL-Secure Socket Layer, SET-Secure Electronic Transaction Protocol for Credit card payment, E-Cash, E-check, Smart cards. Electronic Payment System: Digital Cash, Digital Wallets, Digital checking payment systems, Electronic Billing, Wireless payment systems. Software Package: PGP e-mail encryption software

Books and References:

- 1) E-Commerce: The Cutting Edge of Business, Kamlesh K. Bajaj & Debjani Nag, Tata McGraw Hill.
- 2) E- Commerce Strategy , Technologies and Applications, David Whiteley, McGraw Hill Edition
- 3) E- Security, Electronic Authentication and Information Systems Security Sundeep Oberoi, TMG
- 4) E-Commerce Concepts, Models , Strategies by - G.S.V Murthy
- 5) E-Commerce- Kenneth C.Laudon and Carol Guercio Traver
- 6) Internet marketing and E-commerce-Ward Hanson and Kirthi Kalyanam

Student should prepare and present a seminar on any latest topic should be related to Computer Science. - 15 -

Paper No.: CS022

Paper title: Major Project

Comp. Sci. (Gen.) Semester : VI

Students group (maximum 3 students) should design and develop a project.

S*/-170516/-
