DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO. SU/Sci./B.Sc. Syllabi/100/2016

It is hereby notified for information to all concerned that, on the recommendation of the Ad-hoc Board in Computer Science and I.T. the **Academic Council at its meeting held on 01 & 02 June, 2016** has accepted the following revised syllabi as mentioned against their names under the Faculty of Science :-

Sr. No.	B.Sc. III Year Revised Syllabus		Semester
[1]	B.Sc. Computer Science	Degree Course	V & VI
[2]	B.Sc. Information Technology	Degree Course	V & VI
[3]	B.C.A. Science	Degree Course	V & VI
[4]	B.Sc. Animation	Degree Course	V & VI
[5]	B.Sc. Computer Science	Optional	V & VI
[6]	B.Sc. Information Technology	Optional	V & VI
[7]	B.C.A. Science	Optional	V & VI
[8]	B.Sc. Computer Maintenance	Optional	V & VI

This is effective from the **Academic Year 2016-2017** and onwards.

These **syllabi are also available on the University Website www.bamu.ac.in**

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO.SU/B.Sc./2016/2389-639
A.C.M.A.I.No.10

Date:- 07-06-2016.

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Director,
Board of College and
University Development.

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Copy forwarded with compliments to :-

1] The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.

Copy to :-

1] The Controller of Examinations,

2] The Section Officer, [B.Sc. Unit],

3] The Section Officer, [B.C.S. Unit],

4] The Programmer [Computer Unit-1] Examinations,

5] The Programmer [Computer Unit-2] Examinations,

6] The In-Charge, E-Suvidha Kendra, [Professional Unit], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University,

7] The Record Keeper,
Dr. Babasaheb Ambedkar Marathwada University.

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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)			
			T Hrs/ Week	P Hrs/ Week	Total Hrs/ Week	University Theory Exam.	University Practical Exam.	Duration	Total Marks
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 **Comp. Sci. (Gen.) Semester : V**
Paper title: Software Engineering

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

Paper No.: CSO16* **Comp. Sci. (Gen.) Semester : V**
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 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-Infunctions, 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 andCSS3 By Richard Clark, OliStudholme,Christopher Murphy and DivyaManian.(http://www.alvinisd.net/cms/lib03/TX01001897/Centricity/Domain/1077/beginning_html5_and_css3.pdf)
3) A Definitive Guide to HTML5 , By Adam Freemans

Paper No.: CSO16* **Comp. Sci. (Gen.) Semester : V**
Paper title: VB.NET

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 Petroutsos, Sybex Publication.

Paper No.: CSO17 Comp. Sci. (Gen.) Semester : V
Paper title: Software Engineering Case Study

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

Paper No.: CSO18 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 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 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.: CSO18 **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.: CSO19 Comp. Sci. (Gen.) Semester : VI
Paper title: Data Communication and Networking

Unit –I	
	Introduction Communication System, Components of communication system, Computer network Advantage 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 PublicationSoftware

Paper No.: CSO20* Comp. Sci. (Gen.) Semester : VI
Paper title: Ethics and Cyber Law

Unit –I

	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", SpringerA Definitive Guide to HTML5 , By Adam Freemans

Paper No.: CSO20* **Comp. Sci. (Gen.) Semester : VI**
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

Paper No.: CSO21 **Comp. Sci. (Gen.) Semester : VI**
Paper title: Seminar

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

Paper No.: CSO22 **Comp. Sci. (Gen.) Semester : VI**

Paper title: Major Project

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

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