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:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>B.Sc. III Year Revised Syllabus</th>
<th>Semester</th>
</tr>
</thead>
</table>

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.

Director,  
Board of College and University Development.
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.
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)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Course Code</th>
<th>Name of the Subject</th>
<th>Scheme of Teaching</th>
<th>Scheme of Evaluation(Marks)</th>
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</thead>
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<tr>
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<td>T Hrs/ Week</td>
<td>P Hrs/ Week</td>
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<td>Semester V</td>
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</tr>
<tr>
<td>1</td>
<td>CSO15</td>
<td>Software Engineering</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>CSO16*</td>
<td>Web Designing</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>CSO16*</td>
<td>VB.Net</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>CSO17</td>
<td>Case Study</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>CSO18</td>
<td>Pr. Based on CSO16</td>
<td>-</td>
<td>3</td>
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<tr>
<td>Total of Semester – V</td>
<td></td>
<td></td>
<td>6</td>
<td>3</td>
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<tr>
<td>Semester VI</td>
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<tr>
<td>1</td>
<td>CSO19</td>
<td>Data Communication and Networking</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>CSO20*</td>
<td>Ethics and Cyber Law</td>
<td>3</td>
<td>3</td>
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<td>3</td>
<td>CSO20*</td>
<td>E-Commerce</td>
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<td>3</td>
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<tr>
<td>4</td>
<td>CSO21</td>
<td>Seminar</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>CSO22</td>
<td>Project</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total of Semester – VI</strong></td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>100</td>
</tr>
</tbody>
</table>

* 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**

- Unit –II

**Software Process and Process Models**

- Unit –III

**Principles That Guide Practice**

Books:


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 <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-Infuunctions, 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
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 <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.: CSO18

Paper title: VB.NET if Selected

Comp. Sci. (Gen.) Semester: V

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
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
Syllabus of Computer Science (General), w.e.f.: 2014-15

**Unit – II**

**Unit – III**
**Information Technology Act 2000 Cyber Law**

**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
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

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.
Software Package: PGP e-mail encryption software

Books and References:
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.

**Paper No.: CSO22**

**Paper title: Major Project**

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