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. Information Technology (Optional)

Semester V & VI

[Effective from 2016-17]

Curriculum Structure and Scheme of Evaluation: B.Sc. Information Technology (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	ITO15	Software Engineering	3		3	50	-	2	50
2	ITO16*	PHP-I	3		3	50	-	2	50
3	ITO16*	Core Java	3		3	50	-	2	50
4	ITO17	Case Study	-	3	3	-	50	3	50
5	ITO18	Pr. Based on CAO16	-	3	3	-	50	3	50
Total of Semester – V			6	3	9	100	100		200
Semester VI									
1	ITO19	Ethics and Cyber Low	3		3	50	-	2	50
2	ITO20*	PHP-II	3		3	50	-	2	50
3	ITO20*	Advance Java	3		3	50	-	2	50
4	ITO21	Seminar	-	3	3	-	20	3	50
5	ITO22	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.:ITO15 **Info.Tech. (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 and References:

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.: ITO16* **Info.Tech. (Gen.) Semester : V**
Paper title:PHP-I

Unit –I

Introduction
What is PHP? Why PHP? Evolution of PHP.

Installation
PHP on windows and Linux, Configuring: Apache & PHP, Running & Testing PHP Script, Combining PHP with HTML.

PHP Language Basics
Building blocks of PHP: Variables, Data Types, Operators and Expressions and Constant.

Decision within PHP
if , if... else, if... elseif ... else, switch, Ternary Operator

Unit –II

Looping within PHP
while, do...while, for, Break & *Continue* statement

Functions in PHP
What is function, why functions, Calling function, Returning Value from function, Recursive function.

Arrays in PHP
What & Why Array, Creating Array, Associative Array, Multidimensional Arrays, Accessing Array, Manipulating Arrays, Sorting Arrays, Merging Arrays.

Unit –III

Objects in PHP
Whatis Class & Object, Creating a Class & Object, Object properties, object methods, Overloading, inheritance, Constructor and Destructor.

String in PHP
Creating and Accessing String, formatting String, Searching String, Manipulating String.

Date and Time
Understanding TimeStamp, Getting Date and time, Extracting values of date-time, Formatting date-time.

Books and References:

1) **Beginning PHP 5.3 ,** Author: Matt Doyle**,** Wiley Publishing, Inc.
2) **SAMS Teach yourself PHP in 24 hours,** Author:Matt Zandstra, Sams Publishing.
3) **"PHP, MySQL and Apache All in One"** , Author: Juliea C. Meloni, SAMS series.

Paper title: Java-I

Unit –I

Object Oriented Paradigm

Basic concepts of Object oriented programming: class & object, data abstraction and encapsulation, inheritance, polymorphism, dynamic binding, message communication. Benefits and applications of OOP. History and features of Java. Java Vs. C++. Java and Internet, Java and www. Java environment. Structure of java program, symbolic constants. Data types.

Arrays, Classes and Objects

Declaration and initialization, one and multidimensional arrays Defining a class, adding variables and methods, creating objects, static fields and static methods. Method overloading, Constructors: types and multiple constructors in class. Command line arguments.

Unit –II

Inheritance

Super and sub class, defining a subclass. Single inheritance, multilevel inheritance and hierarchical inheritance. Subclass constructors. Super keyword, Visibility controls, Method overriding, Dynamic method dispatch, Abstract methods and class.

Interfaces, String and Vector Class

Defining interfaces, implementing interfaces, extending interfaces, accessing interface variables. String class and its methods, Vectors

Unit –III

Packages

Introduction, Java API packages, Naming conventions, creating and accessing user defined package, using a package, adding a class to a package, importing classes from package.

Exception handling and Multithreading

Exceptions, syntax of exception handling code, multiple catch statements, throw: throwing own exceptions, throws and finally Introduction to multithreading, creating threads by extending the Thread class and by implementing Runnable interface, implementing the run() method, Life cycle of a thread, Thread methods and thread priority.

Books and References:

1. Prgramming with JAVA: E. Balagurusamy, Tata Mc-Graw Publishing Company Ltd.
2. The Complete Reference J2SE: Herbert Schildt, Tata Mc-GrawPub. Comp.Ltd.
3. Core Java-2 Vol-I &Vol-II - Cray S. Horstmann, Gray Corneel; Pearson Education, Low Price edition

Paper No.: ITO17 **Info.Tech. (Gen.) Semester : V**

Paper title:Software Engineering Case Study

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

Paper No.: ITO18 **Info.Tech. (Gen.) Semester : V**
Paper title:PHP-I if Selected

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

Paper No.: ITO18 **Info.Tech. (Gen.) Semester : V**
Paper title:Java-I 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.: ITO19 **Info.Tech. (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.: ITO20* **Info.Tech. (Gen.) Semester : VI**
Paper title:PHP-II

Unit –I	
	Forms Handling HTML Forms in PHP, Creating HTML Form, Capture Data Sent, Handling Empty form data, Multi-Value fields, Validating Form Data, Difference between GET and POST, Global and Environment Variables, Generating Web-form in PHP, Create Multi-step Form, Hidden fields, Redirecting the user.
Unit –II	
	Cookies Cookies and user sessions in PHP, State and Stateless Webpage, Anatomy of cookies, Setting a cookies with PHP, Deleting a cookies, Creating Session Cookies **QueryString** Working with QueryString, Creating QueryString. **Session** Using PHP Session to Store Data: Creating a Session, Reading & Writing Session Data, Destroying a Session, Create a User Login System.
Unit –III	
	Introducing Database and SQL Basics of MySql, Connecting to the Database Server, Creating Database, Creating Table. Retrieving data: Limit the number of results returned, Order and group results, Query multiple tables at once, Use various MySQL functions and other features to build more flexible queries, **Manipulating data from SQL with PHP** Inserting new records into tables using INSERT statements, changing field values within records with UPDATE statements, deleting records using DELETE statements.

Books and References:

1) **Beginning PHP 5.3 ,** Author: Matt Doyle**,** Wiley Publishing, Inc.
2) **SAMS Teach yourself PHP in 24 hours,** Author:Matt Zandstra, Sams Publishing.
3) **"PHP, MySQL and Apache All in One"** , Author: Juliea C. Meloni, SAMS series

Paper No.: ITO20* **Info.Tech. (Gen.) Semester : VI**
Paper title:Java-II

Unit –I	
	Stream Byte stream, Character stream**,** InputStream ,OutputStream,Working with Reader classes , InputStreamReader, BufferedReader , FileInputstream , FileOutputStream, Writer classes. **Applets** Introduction to Applet , Types of Applet, Applet vs Application , Applet class, advantages of Applet , Applet Lifecycle, My First Applet, Applet tag, Passing Parameters to Applet.
Unit –II	
	Swing Introduction to JFC (Java Foundation Classes) , Swing ,Swing Features , JComponent, JApplet, JFrame, JPannel, JButtons, Jcheckboxes and JRadiobuttons,JTextField,JMenu, JMenuBar, JMenuItem , JOptionPane **Java Database Connectivity (JDBC)** Designof JDBC, JDBC configuration, ExecutingSQL statement, QueryExecution, Scrollable and updatable resultsets, row sets, metadata, Transaction Processing
Unit –III	
	Servlets Servlet Overview and Architecture, Interface Servlet and the Servlet Life Cycle, HandlingHTTP get Requests, Handling HTTP post Requests,Redirecting Requests to Other Resources, Session Tracking, Cookies, Session Tracking with HttpSession **JavaServer Pages (JSP)** Introduction, JavaServer Pages Overview,First JavaServer Page Example, Implicit Objects, Scripting, Standard Actions, Directives, Custom Tag Libraries

Books and References:

1. Java Complete Reference, Herbert Schildt, Seventh Edition, Tata McGraw Hill.
2. Java EE 6 for Beginners, Sharanam Shah, Vaishali Shah, Shroff Publishers and Distributors
3. Advanced Java™ 2 Platform How to Program by H. M. Deitel , P. J. Deitel,S. E. Santry Prentice Hall publication.

Paper No.: ITO21 **Info.Tech. (Gen.) Semester : VI**
Paper title:Seminar

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

Paper No.: ITO22 **Info.Tech. (Gen.) Semester : VI**
Paper title:Major Project

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