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.

★ ★ ★ ★ ★ ★ ★
******

Director,
Board of College and
University Development.

..2..

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.

-=**=-

S/-0070616/-*

NAAC Re-accredited with Grade 'A'

Dr. Babasaheb Ambedkar Marathwada University

Aurangabad-431004

REVISED SYLLABUS OF

B. Sc. (Information Technology)
Three Year Degree Course
Semester – V and VI
(With Effective From: 2016-17)

हे ज्ञानिची पवित्रता | ज्ञानीचि आथि ||

Dr. Babasaheb Ambedkar Marathwada University
Aurangabad-431004.
Tel.No. : 0240-2403400/431, Fax:0240-2403113
Website : www.bamu.ac.in, http://bamua.digitaluniversity.ac.in

Curriculum Structure and Scheme of Evaluation: B.Sc.(I.T.)

Sr. No.	Paper Number	Name of the Paper Titles	Scheme of Teaching	Scheme of Evaluation(Marks)		
			Theory / Practical (Lect./week)	Theory / Practical (Marks)	Exam Duration (in hrs.)	Total Mark
V Semester						
1	**IT501-T**	Software Project Management II	**3**	**50**	**2**	**50**
2	**IT502-T**	Data Communication & Networks	**3**	**50**	**2**	**50**
3	**IT503-T**	Beginners Programming with PHP	**3**	**50**	**2**	**50**
4	**IT504-T**	Ethical Hacking	**3**	**50**	**2**	**50**
5*	**IT505-T**	Data Warehousing	**3**	**50**	**2**	**50**
6*	**IT506-T**	Computer Graphics	**3**	**50**	**2**	**50**
7#	**IT507-T**	Core Java-II	**3**	**50**	**2**	**50**
8#	**IT508-T**	eXtended Markup Language (XML)	**3**	**50**	**2**	**50**
9	**IT509-P**	**Pr. Based on DCN**	**4**	**100**	**2**	**100**
10		**Pr. Based on PHP**	**4**		**2**	
11	**IT510-P**	**Pr. Based on DW/ CG**	**4**	**100**	**2**	**100**
12		**Pr. Based on Core Java-II / XML**	**4**		**2**	
VI Semester						
1	**IT601-T**	Software Testing & Quality Assurance	**3**	**50**	**2**	**50**
2	**IT602-T**	Wireless Networking	**3**	**50**	**2**	**50**
3	**IT603-T**	Advanced Programming with PHP	**3**	**50**	**2**	**50**
4	**IT604-T**	Cyber Law and Security	**3**	**50**	**2**	**50**
5*	**IT605-T**	Data Mining	**3**	**50**	**2**	**50**
6*	**IT606-T**	Cloud Computing	**3**	**50**	**2**	**50**
7#	**IT607-T**	C# Programming	**3**	**50**	**2**	**50**
8#	**IT608-T**	AJAX	**3**	**50**	**2**	**50**
9	**IT609-P**	**Pr. Based on PHP**	**4**	**100**	**2**	**100**
10		**Pr. Based on C# / AJAX**	**4**		**2**	
11	**IT610-P**	**Major Project**	**8**	**100**	**3**	**100**
12						

*** and #: Any one paper is to be opted from the group**

PATTERN OF QUESTION PAPERS

Note : 1) All questions carry equal marks.

2) All questions are compulsory.

Q. No.	Format	Marks
1.	Multiple Choice/Fill in the blank/Match the pair/ one line answer. 1) 2) • • 10)	1 x 10 = 10
2.	a) b) OR a)	5 * 2 =10 10
3.	a) b) OR a)	5 * 2 =10 10
4.	a) b) OR a)	5 * 2 =10 10
5.	Write Short Notes On: (Any Two) a) b) c)	5 * 2 =10
	Total	**50**

B.Sc.(Information Technology)

Semester –V

Course: B.Sc(I.T.) **Semester-V**

Topic: Software Project Management II **Paper No.: IT 501-T**

Unit - I

- **Software Efforts estimation**

  Introduction, where estimates done, problems with over and under estimates done, basics for software estimating, estimation techniques, function point analysis, COCOMO model.

- **Activity Planning**

  Objectives, project schedule, projects and activities, sequence and schedule, adding time dimension, identifying the critical path.

Unit – II

- **Risk Management:**

  Risk, category of risk, frame work for dealing with risk, risk identification, risk assesment, risk planing, risk management, PERT Technique.

- **Resource Allocation**

  Nature of resources, identificying resource requirement, scheduling resources, counting the cost, scheduling sequence.

Unit – III

- **Monitoring and control**

  Framework creation, data collection, visualizing progress, monitoring of cost and prioritizing.

- **Software Quality**

  Importance, defining software quality, product versus process quality management, Quality plan.

Books for Study:

1. Bob Hughes and Mike Cotterell - Software project management – fourth edition - McGraw Hill
2. Walker Royce - Software Project Management - Addison Wesley.

B.Sc. (I.T.) **Semester V**

Topic: Data Communication and Networks **Paper Code: IT502-T**

Unit -I

Introduction : Data Communication System and its components, Computer network and its goals. Protocols, Standards, Standards Organizations , Data Flow, broadcast and point to point networks, Network topologies.

Data and Signals: Analog and Digital Data, Analog and Digital Signals, Periodic and Nonperiodic Signals, periodic analog signals, Sine Wave, Phase, Wavelength, Time and Frequency Domains, Composite Signals, Bandwidth, Digital Signals, Bit Rate, Bit Length, Digital Signal as a Composite Analog Signal, Transmission of Digital Signals. Transmission of impairment :Attenuation, Distortion, Noise.

Transmission Media: Guided Media : Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable, Unguided Media : Radio Waves, Microwaves, Infrared.

Unit -II

Digital Transmission: Line Coding, Line Coding Schemes, Block Coding, Scrambling, Pulse Code Modulation, Delta Modulation, Transmission modes: Parallel & Serial Transmission.

Analog Transmission: Aspects of Digital to Analog Conversion, Amplitude Shift Keying, Frequency Shift Keying, Phase Shift Keying, Quadrature Amplitude Modulation, Amplitude Modulation, Frequency Modulation, Phase Modulation.

Unit -III

Multiplexing: Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Synchronous Time-Division Multiplexing, Statistical Time-Division Multiplexing.

Switching: Circuit switching: Circuit switching networks switching concepts, Datagram networks, Virtual circuit networks, Routing in circuit switched networks, Packet switching principles, - Routing in packet switching,

Text Book

1) Data Communication & Networking (Forouzan), Tata McGraw-Hill Education.

Additional Reference

1) Computer Networks and Internets - Douglas Comer, Prentice Hall

2) Computer Networks - Andrew Tanenbaum, Prentice Hall

3) William Stallings, Data and Computer Communications Fifth Edition, Prentice Hall of India, 1997.

Course: B.Sc.(IT) **Semester : V**

Topic : Beginners Programming with PHP **Paper Code: IT-503-T**

Unit-1:

Introduction to PHP: 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 – 2:

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 -3:

Objects in PHP: What is 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.

Reference Books:

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

Course: B.Sc.(IT) **Semester : V**

Topic: Ethical Hacking **Paper code: IT 504-T**

Unit -I

Concept of Ethical Hacking

Introduction

What is hacking, Hackers, types of hackers, why hackers hack? Prevention from hacker, steps performed by hackers, working of ethical hacker

Email Hacking

How email works? Email service protocol's, Email Security, email spaoofing, Methods to send fake Emails, email spaming, phishing, prevention from phishing, email tracing, keystroke loggers

Unit -II

Trojans

Introduction, types of Trojans, components of Trojan, mode of Transmission for Trojans, detection and Removal, Counter measures.

Mobile Hacking

Introduction, Call Spoofing/forging, SMS Forging, Bluesnarfing.

Sniffers

What is Sniffers? Defeating Sniffers, Ant Sniff

Unit -III

What is Penetration Testing?

Introduction, Setting the Stage, Introduction to Kali and Backtrack Linux: Tools. Lots of Tools, Working with Your Attack Machine: Starting the Engine, The Use and Creation of a Hacking Lab, Phases of a Penetration Test

Reference Books

1. "Hacking for Beginners" by Manthan Desai
2. "The Basics of Hacking and Penetration Testing: Ethical Hacking and Penetration Testing Made Easy" second Edition by Patrick Engebretson, ELSEVIER.

Course: B.Sc.(IT) **Semester : V Sem**

Topic: Data Warehousing **Paper Code: IT 505-T**

Unit -1

Concept of Data Warehousing(DW): Need for Data Warehousing, Need & Characteristics of Strategic Information, Decision Support System: History Features & disadvantageous, Differentiation of Operational & informational System. Data warehousing: Definition & Advantage.

Data warehouse Building blocks: Features, Data warehouse Applications, Types of Data warehouse, Differentiate DW and operational DB, Data Warehouses and Data Marts: Approaches, Overview of the Components, Metadata in Data Warehouse.

System Process: Process Flow in Data Warehouse,

Unit -2

Architecture: Business Analysis Framework, 3 – tier DW Architecture, DW Models, Load Manager, Warehouse Manager, query Manager.

Multidimensional Data Models: Data cube, Dimensional Modeling, Lattice of cuboids, DW schemas: Star schema, Snowflake schema, Fact Constellation, Schema Definition.

Unit - 3

OLAP: Definition, types of OLAPs, OLAP operations: roll-up, drill-down, slice and dice, pivot.

Relational OLAP: Feature, Architecture, pro & cons.

Multidimensional OLAP: Feature, Architecture, pro & cons.

Data Warehousing and the Web: Web-Enabled Data Warehouse, Web-Based Information Delivery, OLAP and the Web, Building a Web-Enabled Data Warehouse.

Reference Books:

1) DATA WAREHOUSING FUNDAMENTALS: A Comprehensive Guide for IT Professionals, By, PAULRAJ PONNIAH, Wiley-Interscience Publication.
2) Data mining Techniques, By Arun K. Pujari, Universsities Press.
3) Mastering Data Warehouse Design, By, Claudia Imhoff, Nicholas Galemmo, Jonathan G. Geiger, Wiley Publishing.
4) DWH tutorial from Tutorial Points.
   Weblink: http://www.tutorialspoint.com/dwh/

Course: B.Sc. (IT) **Semester : V**

Topic: Computer Graphics **Paper Code : IT506-T**

Unit-I

Basics Concept in Computer Graphics

Introduction to Computer Graphics, Application of Computer Graphics, Classification of Computer Graphics, Types of Graphics Devices, Video Display Devices, Input Devices, Display File and its Structure, Display file Interpreter, Display Processor, Graphics file Format.

Graphics in C:

Introduction to graphics in C : initgraph(), detectgraph() and closegraph() function, Drawing object in C , Line, Circle, Rectangle, Ellipse, Changing foreground & background colors, Filling object by color function.,drawpoly, fillpoly, floodfill, getcolor, settext, outtext,style,fonts,coloring.

Unit-II

2-D Transformation

Translation, Rotation, Scaling, Homogenous Coordinates for Translation, Homogenous Coordinates for Rotation, Homogenous Coordinates for Scaling, Composogation from 2D Transformation, Other TransformationReflection, Shear, and Inverse Transformation.

Unit-III

Line, Circle and Character Generation

Basics concept in line Drawing, Line Drawing Algorithm, Digital Differential Analyzer, Bresenham's Line Algorithm, Antialiasing of Lines, Method of Antialiasing, Increasing Resolution, Unweighted Area Sampling, Pixel Phasing, Representation of Circle ,Polynomial Method, Trigonometric Method, Circle Drawing Algorithm, DDA Circle Drawing Algorithm, Bresenham's Circle Drawing Algorithm, Character Generation, Stroke Method, Starbust Method, Bitmap Method.

Text Books:

1. Procedural Elements for Computer Graphics: D.F.Rogers
2. Mathematical Elements for Computer Graphics: D.F.Rogersand J.A.Adams
3. Computer Graphics : A.P.Godse, (IIIrd Edition) ,Technical Publication

Reference Books:

1. Computer Graphics by M. Pauline Baker, Donald Hearn, (2ndEdition) PHI Publication
2. Principles of Interactive Computer Graphics By. William. M. Newman. (IInd Edition) Mc.Graw Hill Publication.
3. Computer Graphics by V.K. Pachghare, (II nd Edition), Laxmi Publication

B.Sc. (I.T.) **Semester: V**
Topic: Core Java-II **Course : IT 507-T**

Unit – I

Input/Output Stream: File, Directories, FilenameFilter, Byte stream, Character stream**,** InputStream ,OutputStream ,Working with Reader classes, InputStreamReader, BufferedReader , FileInputstream , FileOutputStream, Writer classes

Utilities: Simple Type Wrapper: Number**,** Character, Boolean,

Enumerations: Dictionary and StringTokenizer, Date,Math :Tramsendentals, Exponential, Rounding function,

Unit -II

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 .

Graphics:Basic Shapes: drawLine, drawArc, fillArc, drawPolygon, fillPolygon, Color & Color Methods, Fonts.

Unit III

Java Database Connectivity (JDBC): Design of JDBC, JDBC configuration, Executing SQL statement, QueryExecution, Scrollable and updatable resultsets, row sets, metadata, Transaction Processing.

Networking: InetAddress, Datagrams, Socket for client and Server, URL, URL Connection.

Reference Books:

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

Course: B.Sc. (IT) **Semester: V**

Topic: eXtended Markup Language **Paper Code: IT508-T**

Unit -1

Introduction to XML: XML history & origin, XML Syntax, Components of XML, CDATA & PCDATA, State of XML, Modeling Data, XML Declaration, XML first program, XML namespace.

Dcoument Type Definition (DTD): Fundamental, Internal & External DTDs, Valid & well-formed document,

Elements of Document type Definition, types of Element: empty, element-only, mixed element, ANY.

Attributes of DTD, types of Attributes: String, Enumerated, Tokenized.

Creating a valid document from a DTD.

Schema: XML Schema & W3c Schema, Benefits of Schema,

XML Schema Vocabulary: Schema Element, datatype Element, ElementType Element, element Element, group Element, AttributeType Element, attribute Element, description Element.

XML Data types, Conversion of DTD to Schema.

Unit- 2

Formatting XML documents: Style sheets Basics, Evolution of CSS & XSL,Comparing XSL & CSS.

CSS: Introduction, CSS Style Properties, Creating CSS Style Sheets, Formatting XML with CSS.

XSL: Processing an XSL style sheet, Architecture of XSL, XSL Style Sheet: Templates and Patterns, XSLT template Constructs, Develop XSL Style Sheet.

Unit – 3 **XSLT Transformation:**What is XSLT, XLST Processor work, Source Tree, Foundational XLST Elements <xsl:output> element, Conditional Processing: <xsl:if> & <xsl:choose>, <xsl:for:each>, <xsl:sort> ,

XSLT Modes, XSLT Variables and Parameters, Named template and the <xsl:call-template> elements.

XSLT Functions.

Reference Books:

1) "XML Unleashed", by Michael Morrision, Techmedia Publication.
2) "Beginning XML", By, David Hunter and ed. Al, Wrox Publication.
3) "XML Bible", By Elliotte Rusty Harold, IDG Books Worldwide Publication.

Topic: Practical Based on DCN **Paper No.: IT509P (A)**

1. Study of Networking Devices & tools
2. Study of IP Address with Class
3. Virtual Setup of Practical setup of Intra-Network.
4. Installation of Server & Client System
5. Peripheral Device Sharing of Devices in LAN
6. Proxy Network Setting.

Note : Any Five Addition practical Assignment as per faculty directive.

Course: B.Sc.(I.T.) **Semester : V**

Topic: Practical Based on PHP **Paper No.: IT509P (B)**

Minimum 10 Practicals to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

Course: B.Sc.(I.T.) **Semester : V**

Topic: Practical Based on DW/C.G. **Paper No.: IT510P (A)**

Minimum 10 Practicals to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

Course: B.Sc.(I.T.) **Semester : V**

Topic: Practical Based on Core Java-II / XML **Paper No.: IT510P (B)**

Minimum 10 Practicals to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

B.Sc.(Information Technology)

Semester –VI

Course : B.Sc. (I.T.) **Semester: VI**

Paper: Software Testing and Quality Assurance **Paper No. : IT601-T**

Unit-I

Introduction:

Software Quality, Role of testing, verification and validation, objectives and issues of testing, Testing activities and levels, Sources of Information for Test Case Selection, White.

Unit-II

Unit Testing:

Concept of Unit Testing , Static Unit Testing ,Dynamic Unit Testing , Outline of Control Flow Testing, Overview of Dynamic Data Flow Testing, Data Flow Graph, Data Flow Terms, Data Flow Testing Criteria, Comparison of Data Flow Test Selection Criteria, Feasible Paths and Test Selection Criteria, Comparison of Testing Techniques.

Unit-III

System Integration Testing:

Concept of Integration Testing, Different Types of Interfaces and Interface Errors, Test Plan for System Integration, System Test Categories: Basic Tests, Functionality Tests, Robustness Tests, Interoperability Tests, Performance Tests, Reliability Tests, and Documentation Tests.

Text books:

1. “Effective methods for Software Testing “William Perry, Wiley.

2. “Software Testing and Quality Assurance: Theory and Practice”, Sagar Naik, University of Waterloo, Piyu Tripathy, Wiley , 2008

Reference Books:

1. “Software Testing - A Craftsman’s Approach”, Paul C. Jorgensen, CRC Press, 1995.

2. “The Art of Creative Destruction”, Rajnikant Puranik, SPD.

3. “Software Testing”, Srinivasan Desikan and Gopalaswamy Ramesh - Pearson Education 2006.

Course : B.Sc. I.T. **Semester VI**

Topic : Wireless Networking **Paper Code : IT 602T**

Unit 1

Wireless Communication: Growth, History, Mobile Communications Fundamentals, Wireless Migration
First Generation (1G) : 1G System Architecture, MTSO Configuration, Cell Site Configuration, Handoff, Frequency reuse, Spectrum Allocation, 1G Systems.
Second Generation (2G) : Enhancements over 1G Systems, GSM, IS-136 System Description, IS-95 System Description, iDEN, CDPD
Third Generation (3G) : UMTS Services, UMTS Air Interface, 3GPP Release 1999 Network Architecture, #GPP Release 5 All-IP Network Architecture, CDMA 2000

Unit 2

UTMS : UTMS Basic, WCDMA Air Interface, UTRAN Architecture, Handover, UTMS Core Network
CDMA2000: Radio and Network Components, Network Structure, Packet Data Transport Process Flow, Radio Network
Voice-over-IP Technology: VoIP, Basic of IP Transport, VoIP Challenges, SIP, SS7, Quality Service
GSM/GPRS/EDGE, TDMA, AMPS, LMDS, WiMAX, WiFi, PtP and PSCS : Network Design, Advantages and disadvantages of each.

Unit 3

Network Design Considerations: Traffic Forecasts, Build-ahead, Network Node Dimensioning
Antenna System Selection : Base Station Antennas, Performance Criteria, Diversity, Installation Issues, dBi and dBd, Intelligent Antennas
UTMS System Design: Network Design Principles, CDMA200 Design methodology, Development Guidelines, Radio Elements, Requirements, Traffic Model
Communication Sites: Types, Installation, Towers, In-building, Intermodulation, Isolation, Communication Site, 4G Cellular

Books

1. 3G Wireless Network by: Clint Smith, Daniel Collins McGraw-Hill
2. Wireless Network by P. Nicopolitidis M. S. Obaidat, Wiley India Pvt. Lts
3. Introduction to Wireless Systems by Bruce A. Black, Philip S. DiPiazza , Bruce A. Ferguson, David R. Voltmer, and Frederick C. Berry
4. Wireless Telecommunications Systems and Networks, by Gary J. Mullett. ISBN-10: 1401886590; Publisher: Thomson Delmar Learning; 1 edition (September 6, 2005)

Web Sites

1. http://www.wirelesscommunication.nl/about.htm
2. http://www.pdfdrive.net/wireless-communication-fundamentals-introduction-aspects-of-mobility-e3310152.html
3. https://www.ukessays.com/essays/computer-science/fundamentals-of-cellular-communications-computer-science-essay.php

Course: B.Sc.(IT) **Semester –VI**

Topic : Advanced Programming with PHP **Paper Code: IT 603-T**

Unit-1:

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 – 2:

Cookies and user sessions in PHP: State and Stateless Webpage,

Cookies: 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 – 3:

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.

Reference Books:

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

Course: B.Sc (I.T.) **Semester: VI**

Topic: Cyber Law and Security **Paper No.:IT 604 -T**

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. The System of Digital Signatures the Role and Function of Certifying Authorities. E-Governance Cyber Crimes and Cyber Laws

Unit-II

Introduction: Cyber Security and its problem-Intervention Strategies: Redundancy, Diversity and Autarchy. The Ethics of Computer Security

Intellectual Property & Security : Piracy, Insider Threat.

Defensive Information; Computer Network Security, Computer Break-Ins, Cryptographic Techniques.

Unit-III

Information Technology Act 2000 Cyber Law

Issues in E-Business Management Major issues in Cyber Evidence Management Cyber Law Compliancy Audit.

Text books:

1. Godbole,“ Information Systems Security”, Willey
2. Mark F Grady, FransescoParisi, “The Law and Economics of Cyber Security”, Cambridge University Press, 2006
3. Merkov, Breithaupt,“ Information Security”, Pearson Education
4. Yadav, “Foundations of Information Technology”, New Age, Delhi
5. Schou, Shoemaker, “ Information Assurance for the Enterprise”, Tata McGraw Hill
6. Sood,“Cyber Laws Simplified”, Mc Graw Hill
7. Furnell, “Computer Insecurity”, Springer

Course: B.Sc.(IT) **Semester VI**

Topic: Data Mining **Paper Code: IT 605-T**

Unit -1

Data Mining Introduction:

What is Data Mining?, Definition, DBMS Vs Data Mining, DM Techniques, Issues and Challenges in DM, DM Application Areas, DM Applications-Case Studies, Current Trends Affecting DM, Basic Data Mining Task.

Unit – 2

Association Rule:

What is an Association rule?, Method to discover Association Rule, A Priori Algorithm, Partition Algorithm.

Clustering Techniques: Clustering Paradigm, Partitioning Algorithm, Similarity and Distance Measure, Hierarchical Algorithm.

Unit – 3

Decision Tree: What is a decision tree? Tree Construction Principle, Best Split, Splitting indices, Splitting Criteria

Web Mining: Introduction, Web Content Mining, Web Structure Mining, Web Usage Mining.

Reference:

1. **Data Mining Techniques :** Arun K. Pujari ,
2. **Data Mining: Introductory and Advanced Topics:** M.H.Dunham Pearson Education.
3. **Data Mining: Concepts & Techniques,** Morgan Kaufman. 2006

Course : B.Sc.(IT) **Semester : VI**

Topic : Cloud Computing **Paper Code : IT 606-T**

UNIT I

Cloud Computing Fundamentals: Introduction, Layers of Cloud Computing,
Types of Cloud Computing: Public, Private, Hybrid cloud.
Cloud Services: Infrastructure as a Service(IAAS), Platform As a Service(PAAS), Software As a Service (SAAS).
Enabling Technologies, Cloud Computing Features, Cloud Computing platform, Cloud Computing Challenges, First movers in the cloud, When you use the cloud computing, Benefits, Limitations.

UNIT II

Cloud Computing Technologies and Applications: Cloud Computing: IT as a Service, Cloud Computing Security, Cloud Computing Model Application Methodology, Cloud Computing in Development/Test,
Key Enabling Technologies for Virtual Private Clouds: Virtual Private Clouds, Virtual Data Centers and Applications.

UNIT III

Role of Networks in Cloud Computing: Introduction, Cloud Deployment Models and the Network, Network Architectures for Clouds: Data Center Network & Data Center **Interconnect Network, Foundation:** Virtualization, Automation and Standards,
Data-Intensive Technologies for Cloud Computing: Data-Intensive Computing Applications, Data-Parallelism, The “Data Gap”,
Characteristics of Data-Intensive Computing Systems: Processing Approach, Grid Computing
Data-Intensive System Architectures: Google MapReduce & Hadoop

Text Book:

1. Handbook of Cloud Computing, Editors: Borko Furht · Armando Escalante, Springer
2. Cloud Computing A Practical Approach, Anthony T. Velte, Toby J.Velte, Robert Elsenpeter, McGraw Hill Education (India) Private Limited.

References:

1. Cloud Computing Bible , Barrie Sosinsky, WILAY India Pvt. Ltd
2. . CLOUD COMPUTING, Miichael Miller, PEARSON Publication.
3. ClOUD COMPUTING Principles and Paradigms, Rajkumar Buyya, James Broberg, Andrzehj Goscinski, WILAY India Pvt. Ltd.
4. Hybrid Cloud for DUMMIES, Judith Hurwitz, Marcia Kaufman, Dr. Fern Halper, Danies Kirsch, WILAY India Pvt. Ltd

Course : B.Sc. (IT) **Semester : VI**

Topic : C# Programming **Paper Code : IT 607-T**

UNIT I :

Introduction: Basic Concepts, Features, Common Language Specification

C# Types: Simple type, Struct type, Object type Class type, Interfaces, String type, Arrays , Boxing & unboxing Conversions , Implicits , Explicits , Standard & User Defined Conversions.

UNIT II :

Control Statements: Selection Statements – if , Switch, Iteration Statements – For, For-Each, While , Do statements.

Classes & Methods: Constructors & Destructors ,Methods- Parameters, Overriding, Hiding class properties , Indexes , Modifiers, Class member Access, Multi cast deligates

Inheritance & Polymorphism: Inheritance- Basic class & Derived Class, Polymorphism , Base class with Virtual method, Derived class with override methods

UNIT III :

Interfaces : Base, , body , members , methods , properties , events, indexes , mapping , implementation

Exception Handling : Checked & Unchecked statements, compiler settings for overflow checking , Programmatic overflow checking , Exception handling statements – try & catch , try & finally , try- catch- finally , throwing exception & rethrowing exception

Reference Books :

1 . C# : A Beginners Guide – Childt , Herbert (Tata Mcgraw Hill , New Delhi)

2. C# The basics , Vijay Mukhi (BPB Publications)

3. C# Programming (Wrox Publications)

4. C# Programming Black Book – Matt Telles (DreamTech Publications)

Course : B.Sc. (IT) **Semester : VI**

Topic : AJAX **Paper Code : IT 608-T**

Unit-I

Introduction

Evolution of web applications, Problems in web Applications, Ajax web Application model, Creating an Ajax Application.

JavaScript for Ajax

Basics of JavaScript, DOM, DOM Levels, JavaScript and Ajax,

Unit-II

Asynchronous data transfer

XMLHttpRequest Object, XMLHttpRequest vs IFrames, reading a file, performing validation, reading response header, Loading Dynamic List Boxes, Auto Refreshing page, Dynamic Progress bar, Providing Auto Complete, Using IFrames,

Unit-III

Ajax Frameworks

Overview of Ajax Frameworks, Jquery Framework, Prototype Framework, Script.aculo.us Framework, Dojo Toolkit Framework, DWR Framework, JPSpan Framework, Rico Framework, Spry Framework, Commonly used Framework, Implementation of all frame works.

Creating Maps in Ajax

Yahoo! Maps and Google Maps API, Map Types, Limitations of Yahoo! Maps and Google Maps. Handaling Yahoo! Maps and Google Maps Control.

Reference Books:

1. “Ajax Black Book” Kogent Solutions Inc. Published by Dreamtech press
2. “Head First Ajax” by Rebecca M. Riordan O’REILLY SPD pvt.ltd.

Course: B.Sc.(I.T.) **Semester : VI**

Topic: Practical Based on PHP **Paper No.: IT609P (A)**

Minimum 10 Practicals to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

Course: B.Sc.(I.T.) **Semester : VI**

Topic: Practical Based on C# /AJAX **Paper No.: IT609P (B)**

Minimum 10 Practicals to be performed as per the guidelines of teaching Faculty depending upon all theory units of concerned subject.

Course: B.Sc.(I.T.) **Semester : VI**

Topic: Major Project **Paper No.: IT610P**

Note:

1) It is expected that concerned Faculty is to introduce and make the students aware about the Project Development Environment as well as distribute all the students in group with minimum 2 and maximum 4 student's strength.

Minimum contents of Project Report

1. Introduction
2. Problem definition.
3. System Requirement Specification
   - 3.1. User Interview
   - 3.2. Current System flow diagram
   - 3.3. Proposed System.
4. E-R Diagram
5. DFD
6. Sample Screens
7. Conclusion

-==-**

S*/-170516/-