DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO.ACAD/SU/Sci./B.Sc. & M.Sc. Syll./5/2015

It is hereby notified for information to all the concerned that, on the recommendation of the Faculty of Science the Academic Council at its meeting held on 30-05-2015 has accepted the **revised semester-wise syllabi as mentioned against their names in the Faculty of Science as under :-**

Sr. No.	Name of the Subject	Semester
[1]	B.Sc. Computer Science Degree Course	III & IV
[2]	B.Sc. Information Technology Degree Course	III & IV
[3]	B.C.A. Science Degree Course	III & IV
[4]	B.Sc. Animation Degree Course	III & IV
[5]	B.Sc. Bioinformatics Degree Course	III & IV
[6]	B.Sc. Computer Science [Optional]	III & IV
[7]	B.Sc. Information Technology [Optional]	III & IV
[8]	B.Sc. Computer Applications [Optional]	III & IV
[9]	B.Sc. Computer Maintenance [Optional]	III & IV
[10]	B.Sc. Environmental Science [Optional]	V & VI
[11]	B.Sc. Bio-Chemistry [Optional]	V & VI
[12]	B.Sc. Forensic Science Degree Course	V & VI
[13]	B.Sc. Industrial Chemistry [Optional]	V & VI
[14]	B.Sc. Electronics [Optional]	V & VI
[15]	B.Sc. Zoology [Optional]	V & VI
[16]	B.Sc. Microbiology [Optional]	V & VI
[17]	B.Sc. Instrumentation Practice [Optional]	V & VI
[18]	B.Sc. Statistics [Optional]	V & VI
[19]	B.A. Statistics [Optional]	V & VI
[20]	B.A. / B.Sc. Mathematics [Optional]	V & VI
[21]	B.Sc. Home Science Degree Course	V & VI
[22]	B.Sc. Textile Interior Decoration Degree Course	V & VI
[23]	B.Sc. Fishery Science [Optional]	V & VI
[24]	B.Sc. Dairy Science & Technology [Optional]	V & VI
[25]	B.Sc. Botany [Optional]	V & VI
[26]	B.Sc. Physics [Optional]	V & VI
[27]	M.Sc. Computer Science	III & IV
[28]	M.Sc. I.T.	III & IV

This is effective from the Academic Year 2015-16 & onwards as appended herewith.

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

University Campus,
Aurangabad-431 004.
REF.NO.ACAD/SU/SCI./
2015/3761-4160
Date:- 16-06-2015.

★
★
★
★
★
******

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 Director, [E-Suvidha Kendra], in-front of Registrar's Quarter,
Dr. Babasaheb Ambedkar Marathwada University,
3] The Superintendent, [B.Sc. Unit],
4] The Superintendent, [M.Sc. Unit],
5] The Programmer [Computer Unit-1] Examinations,
6] The Programmer [Computer Unit-2] Examinations,
7] The Record Keeper.

-=**=-

S*/-160615/-

M.Sc. (Information Technology)

Semester III & IV

(at college level)

effective from 2015-16

M.Sc. – III Semester

Paper No.	Title of the Paper	Teaching Load (Lect./ week)	Max. Marks	Examinations (Hours)
13.	Programming in Java	04	50	03
14.	Software Engineering & Testing	04	50	03
15.	Database Administrator (DBA)	04	50	03
16.	Elective-1 1.1 Mobile Computing 1.2 Data Warehousing and Mining 1.3 Network Security	04	50	03
17.	Practical-3 based on theory paper-13 and -14	08	50	04
18.	Practical-4 based on theory paper-15 and 16	08	50	04
	Total Marks		**300**	

M.Sc. – IV Semester

Paper No.	Title of the Paper	Teaching Load perweek (Lect.)	Max. Marks	Examinations (Hours)
19.	Cyber Law & Cyber Crime	04	50	03
20.	Elective-2 2.1 C Sharp (C#) Programming. 2.2 ASP.Net 2.3 Android Programming	04	50	03
21.	Major Project	06	70	04
22.	Seminar	03	30	04
	Total Marks		**200**	

Paper No.:13 **M.Sc.(IT) Semester : III**

Topic: Paper title: Programming in Java

Unit –I		
	Introduction: History and features of Java, Difference between C, C++ & JAVA. JAVA and Internet, WWW, Web Browsers, java supports system, Java Environment. JDK, JVM, Byte code **Java Programming Basics:** Structure of Java program, JAVA tokens and Statements, Constants & Variables, Data types, Operators, Command line arguments. **Java Statements & Arrays:** Condition and Looping statement: if, if..else, switch, while, do-while and for. Introduction to arrays, types of arrays, new operator, Strings: String class & its methods, Vectors: Vector Class & its Methods. **Classes & Objects:** Specifying classes, Methods and fields, creating objects, Passing objects to methods, returning objects, static fields & methods, Constructors, Garbage collection, Overloading methods & constructors, this keyword.	
Unit –II		
	Inheritances: Specifying sub class, types of inheritance, visibility control: public, private, protected, package. super keyword, Overriding methods, Dynamic method dispatch, Abstract methods and classes, final methods & classes, **Packages & Interfaces :** Introduction to packages, naming conventions, package statement, creating packages, import statement, accessing package, use of CLASSPATH, adding class to package, hiding classes. Interface, implementing interfaces, multiple interfaces. **Multithreading:** Creation threads, Extending Thread class, implements Runnable interface, stopping and blocking thread, Thread life cycle, thread priorities & Thread synchronization, using Thread methods.	
Unit –III		
	Exception Handling: Managing errors, types of errors, exceptions, syntax of exception handling code. try, catch, throw, throws and finally statements, multiple catch & nested try statements. **Java Input Output:** Java I/O package, Byte/Character Stream, Buffered reader / writer, File reader / writer, File Sequential / Random. Reading numeric, character & strings data from keyboard. **Applet programming**: Applet Vs. Application, Creating applets, life cycle, local & remote applets. <APPLET> tag & its attributes, adding applet to HTML file, Running applet.	
Unit –IV		
	Abstract Windows Toolkit (AWT): Components and Graphics, Containers, Frames and Panels, Layout Managers, Border layout, Flow layout, Grid layout, Card layout, AWT components. Event delegation Model, Event source and handler, Event categories, Listeners, Interfaces, Controls such as text box, radio buttons, checkboxes, lists, choice, command buttons, text area etc. **JDBC:** Java database connectivity, Types of JDBC drivers, Writing JDBC applications, Types of statement objects(Statement, PreparedStatement and CallableStatement), Types of resultset, Inserting and updating , records, JDBC and AWT.	
Unit –V		

	Networking with Java : Networking basics, Sockets, port., Internet addressing, java.net – networking classes and interfaces, Implementing TCP/IP based Server and Client **Servlets:** Introduction Servlet API Overview, Writing and running Simple Servlet, Servlet Life cycle, Generic Servlet, HTTPServlet, ServletConfig, ServletContest, Writing Servlet to handle Get and Post methods.	

Books:

1) The complete Reference J2SE: Herbert Schildt, Tata Mc-Graw Hill Publication.
2) Programming with Java: E.Balaguruswamy.
3) Core Java-2: Cray s.Horstmann, Gray Corneel, Pearson Education.
4) Java Handbook: Patrick Naughton, Tata Mc-Graw Hill Publication.
5) Core Java An integrated Approach: R.Nageswara Rao
6) Java 6 Programming. Black Book : Dreamtech Press.

Paper No.:14 **M.Sc.(IT) Semester : III**

Topic: Paper title: Software Engineering and Testing

Unit –I		
	S/w Engineering Fundamentals: Definition of Software, The birth of s/w engineering, s/w Product:, Software development paradigms, software Characteristics and Application. Software Development life cycle, water fall model, Prototyping, Incremental & Spiral model, 4th Generation Techniques. **Project Management:** Concepts, Software Process and Project Metrics; Software Measurements; Software Projects Planning: Objectives, Scope and Resources. Software Project Estimating, Decomposition Techniques. Empirical Estimation Models: COCOMO Model, Software Equation. Project Scheduling and Tracking.	
Unit –II		
	Software Requirements and Analysis: System Engineering, Product Engineering: Characteristics of a Good SRS, Requirement analysis, Principal, Software prototyping,, Specification and its review. Analysis modeling: datamodeling, mechanics for structured analysis, system analysis tools and techniques, DFD, ER-Diagrams. Data Dictionary (DD). **System Design:** Design concept and principles and its elements, effective modular design, Cohesion & Coupling, Feature of modern graphics interface (GUI). **Design Methods:** data design, interface design guidelines, procedural design.	
Unit –III		
	Software Quality Assurance: Definition of Quality and factors, QA, SQA, Software Quality Metrics, Process and Product Quality, The SEI Process Capability Maturity Model (CMM), ISO ,Six-Sigma. Software Quality Assurance, Need for SQA, SQA Activities, Building blocks of SQA, SQA Planning & Standards, Software Reliability, Reliability Measures. **Introduction to Software Testing:** Need of s/w testing, Error, fault and failure. s/w Testing fundamentals, Testing objectives, test information flows, Testing lifecycle, Test Cases – Test case designing (Concept & introduction should be covered here)	
Unit –IV		
	Levels of Testing Unit Testing, Integration Testing, System Testing,	

	Acceptance Testing, Alpha testing & Beta testing, Static vs. Dynamic testing, Manual vs. Automatic testing, Testers workbench, 11 steps of testing process (Only steps should be covered) **Different types of Testing:** Installation Testing, Usability testing, Regression testing, Performance testing, Load testing, stress testing, Security testing, Static & Dynamic testing, Static testing techniques, Review types : Informal Review, Technical or peer review, Walkthrough, Inspection, static analysis, Review meeting and reporting , Review guidelines & Review checklist, Data flow analysis, Control flow analysis, Cyclometric Analysis, Dynamic testing – need & Advantages	
Unit –V		
	Black Box & White Box Testing (Test Case Design Techniques): *Functional Testing (Black Box)*, Equivalence partitioning, BVA, Decision table based testing, Cause-Effect graphing, Syntax testing (Concept & Test case generation only), *Structural Testing (White Box)*, Coverage testing, Statement coverage, Branch & decision coverage, Path coverage, Validation testing Activities, Low level testing, High level testing, Black box Vs. White Box **Object Oriented Testing:** Issues in OO testing, class testing, GUI testing, Object Oriented Integration & system testing. **Computer Aided Software testing tools (CAST):** Static Testing Tools, Dynamic Testing Tools, Characteristics of Modern Tools. e.g. WinRunner, LoadRunner, Rational ROBO.	

Books:

1. Computer Graphics by M. Pauline Baker, Donald Hearn, PHI.
2. Mathematical Element for Computer Graphics By. David F. Roger., J. Alan Adams, Tata McGHill.
3. Principles of Interactive Computer Graphics By. William. M. Newmann. Mc. Graw Hill.

Paper No.:15 **M.Sc.(IT) Semester : III**

Topic: Paper title: Database Administrator (DBA)

Unit –I		
	Database Architecture Databases and Instances, Logical Storage Structures, Logical Database Structures, Physical Storage Structures, Memory Structures, Backup/Recovery Overview, Security Capabilities	
Unit –II		
	Planning and Managing Tablespaces Tablespace Architecture, Installation Tablespaces, Automatic Storage Management	
Unit –III		
	Tuning by Design: Best Practices, Resource Management and Stored Outlines, Managing Package Development, Common Space Management Problems, Segments, Extents, and Blocks	
Unit –IV		
	Transaction Basics, Undo Basics, Flashback Features, Migrating to Automatic Undo Management	
Unit –V		
	Non-Database Security, Database Authentication Methods, Database Authorization Methods, Logical Backups, Physical Backups	

Books & Referances:

1. **Oracle Database 11g DBA Handbook, by Bob Bryla and Kevin Loney, Oracle Press**
2. *docs.oracle.com/cd/E11882_01/server.112/e25494.pdf*

Paper No.:16 (Elective-1.1) **M.Sc.(IT) Semester : III**

Topic: Paper title: Mobile Computing

Unit –I		
	Mobile Computing Architecture: Internet – The ubiquous network; Schematic representation of mobile computing environment; The Three-Tier mobile computing architecture; Design considerations for mobile computing; Mobile computing through Internet; Making existing applications mobile-enabled.	
Unit –II		
	Mobile Communications: Introduction; The GSM architecture; Call routing in GSM; Network aspects in GSM; GSM frequency allocation; Authentication and security; GPRS system architecture and routing.	
Unit –III		
	Mobility Management: Mobility management; Location Management Principles and Techniques; Location Management Case studies: PCS, Mobile IP.	
Unit –IV		
	Mobile Middleware: Introduction; Adaption: The spectrum of adaption, Resource monitoring, Characterizing adaption strategies, Odyssey-An application aware adaption architecture, Sample Odyssey application; Mobile Agents: Agent architectures, Migration strategies, Communication strategies.	
Unit –V		
	Device Operating System: Introduction to Symbian Operating System; Symbian OS architecture; Applications for Symbian; Special feature:- Event Driven Multitasking using Active objects; Client-Server framework model on Symbian OS.	

Books:

1. Asoke K Talukder and Roopa R. Yavagal; Mobile Computing – Technology, Applications and Service Creation; TMH Publication, New Delhi, 2006
2. Frank Adelstein et.al.; Fundamentals of Mobile and Pervasive Computing; TMH Publication, New Delhi, 2005

Paper No.:16 (Elective-1.2) **M.Sc.(IT) Semester : III**

Topic: Paper title: Data Warehousing and Mining

Unit –I		
	Data Warehousing Introduction - Definition-Architecture-Warehouse hema-Wareho use server-OLAP operations. Data Warehouse technology - Hardware and operating system- Warehousing Software - Extraction tools - Transformation tools - Data quality tools - Data loaders - Data Access and retrieval tools - Data M odeling tools - Fact tables and dimensions Data warehousing case studies : Data warehousing in Government.	
Unit –II		
	Data Mining definition - DM Techniques - current trends in data mining - Different forms of Knowledge - Data selection, cleaning, Integration , Transform ation, Reduction and Enrichment . Data: Types of data - Data Quality - Data Prepro cessing - Measures of similarity and dissimilarity. Exploration : Summary statistics - Visualization.	
Unit –III		
	Association rules: Introduction, Methods to discover association rule, Apriori algorithm Partition Algorithm - Pincher search algorithm - Dynamic Item set algorithm - FP Treegrowth algorithm. Classification: Decision Tree classification- Bayesian Classification - Classificatio n by Back Propagation.	
Unit –IV		
	Clustering Techniques: Introduction - Clustering Paradigms - Paritioning Algorithms K means & K Mediod algorithms - CLARA - CLARANS - Hierarchical clustering D BSCAN - BIRCH - Categorical Clustering algorithms - STIRR - ROCK - CACTUS.	
Unit –V		
	Introduction to machine learning - Supervised learning - Unsupervised lear ning - Machine learning and data mining. Neural Networks : Introduction Use of NN - Working of NN Genetic Algorithm : Introduction - Working of GA	

TEXT BOOKS:

1. Arun k Pujari , "Data Mining Techniques", University press , edition 2001.
2. Jaiwei Han, Michelinne Kamber , "Data Mining : Concepts and Techniques "
3.
Pang-Ning Tan, Michael Steinbach, Vipin Kumar,"Introduction to Data Mining", 20 07.
4.
T.Sushmita mitra, Tir ku Acharaya , "Data Mining Multimedia , Softcomputing & Bioinfor matics", Wiley Interscience publications , 2004.
5.
Michal J A Berry , Gordon Linoff , "Mastering Data Mining" , John Wiley & Sons ,2 000.
6.
Alex Berson , Stephen J.Smith , "Data Warehousing , Data Mining & OLAP ", Tata McGra whil
7.
C S R Prabhu, "Data Warehousing - concepts , techniques and applications ", Pr entice Hall of India, 2nd edition , 2002.

REFERENCE BOOKS :
1.
David Hand, Heikki Mannila , Padhraic smyth, "Principles of Data Mining", the MIT Press, Massachusetts Institute of Technology , Cambridge.
2. Usama M Fayyad, Gregory Piatskey Sharpio, Padhr Smyth, Ramasamy Uthurusamy , "Advances in Knowledge discovery and data mining".
3. Mehmed Kantardzix,"Data Mining : Concepts Models,methods and algorithms".
4.
Mark Humphries , Michal W Hawkins & Michelle C dy, "Data warehousing arch itecture and implementation", Prentice hall of India,1999.
5. Margaret H.Dunham ,"Data Mining introductory and advanced topics".
6.
Sumathi, S.N. Sivanandam, "Introduction to Data Mining and its Applications ",Sp ringer.

Paper No.:16 (Elective-1.3) **M.Sc.(IT) Semester : III**

Topic: Paper title: Networks Security

Unit –I		
	Introduction, Security Concepts, Threats and Risks, Attacks – Passive and Active, Security Services, Confidentiality, Authentication, Non-Repudiation, Integrity, Access Control, Availability, Model for Internetwork Security, Internet Standards and RFCs Access Control Mechanisms ,Access Matrix, HRU, TAM, ACL and capabilities	
Unit –II		
	Access Control Models, Chinese Wall, Clark-Wilson, Bell-LaPadula, Non-Interference and Role Base Model. Cryptography, Secret Key and Public Key Cryptosystems, Symmetric Ciphers, Block Ciphers and Stream Ciphers, DES, IDEA and Key Escrow, RSA and ElGamal	
Unit –III		
	Secure Hash and Key management, Digital Signature and Non-repudiation, cryptanalysis. Network Security, Objectives and Architectures, Internet Security Protocols, IP encapsulating Security Protocol, Network and Transport Layer Security	
Unit –IV		
	Network Security Applications, Authentication Mechanisms: a) Passwords, b) Cryptographic authentication protocol, c) Smart Card, d) Biometrics,e) Digital Signatures and seals, f) Kerberos, g) X.509 LDAP Directory. Web Security : a) SSL Encryption b) TLS, SET	
Unit –V		
	E-mail Security, PGPs / MIME, IP Security, Access and System Security , Intruders, Intrusion Detection and Prevention, Firewall a) Hardware Firewall b) Software Firewall c) Application Firewall d) Packet Filtering. e). Packet Analysis , Proxy Severs, Firewall setting in Proxy, ACL in Proxy	

Reference:

1 William Stallings, "Network Security Essentials", Prentice-Hall. 2 Edward Amoroso, "Fundamentals of Computer Security Technology",

Prentice-Hall. 3 Dorothy E. Denning, "Cryptography and Data Security", Addison-Wesley. 4 Peter J. Denning, "Computers under Attack", Addison-Wesley. 5 Douglas R. Stinson, "Cryptography: Theory and Practice", CRC Press. 6 D. Brent Chapman and Elizabeth D. Zwicky, "Building Internet Firewalls",
O'Reilly and Associates

Paper-17: Practical based on Paper-13 and Paper-14

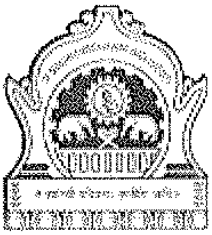
List of Practical: Programming in Java

1 Program that demonstrate use of Arrays.
2 Program to demonstrate constructors.
3 Program to demonstrate method overloading.
4 Program that demonstrate static fields and static methods of class.
5 Program that demonstrate inheritance and its types
6 Program to demonstrate use of method overriding.
7 Program to demonstrate the use of abstract method and abstract class.
8 Program that demonstrate String operations (String class methods)
9 Program that demonstrate package creation and use in program.
10 Program to demonstrate interface.
11 Program to handle exceptions in program (system generated & user defined exceptions)
12 Program that demonstrate multithreading. (Creating thread using Thread class and implementing Runnable interface)
13 Program for Thread synchronization.
14 Program using Byte Stream & Character Stream classes.
15 Program for reading input from keyboard.
16 Program that demonstrate Applet programming.
17 Program that demonstrate 2D shapes on frames.
18 Write a program that demonstrate use of various controls and Layouts
19 Program that demonstrate text and fonts.
20 Program that demonstrate event handling for various types of events.
21 Program to demonstrate JDBC (Inserting, displaying & updating records)
22 Program to demonstrate socket programming. (Client & Server)
23 Program to demonstrate Servlets.

SE and Testing: Implementation of any SE model by selecting any real life problem (team size maximum 2 students).

Paper-18: Practical based on Paper-15 and Paper-16

At least 15 practical should be conducted on each paper



M.Sc. (Information Technology)

Semester IV

Paper No.:19 **M.Sc.(IT) Semester : IV**

Topic: Paper title: Cyber Law & Cyber Crime

Unit –I		
	Cyber Law: What is Cyber Law, Need of Cyber Law, Jurisprudence of Indian Cyber Law, Evolution of Key Terms and Concepts: Computer, Data, Computer Software, Computer System, Computer Network; Evolution of Cyber Crime Computer and Web Technology, Fundamentals of Cyber Law, Scope of Cyber Law, Conceptual and theoretical perspective of cyber law, Cyber Jurisprudence	
Unit –II		
	Digital Signature & its Authorities Digital Signature, Digital Signature Certificate, Certifying Authorities & Liability in the Events of Digital Signature Certification. Law of digital contracts, the system of digital signatures, The Role and Function of Certifying Authorities, Data Protection, Cyber Security, Legal recognition of Digital Evidence	
Unit –III		
	The Science of Cryptography, E-Governance, Cyber Crimes and Cyber Laws, Information Technology Act 2000.	
Unit –IV		
	Cyber Crime & Criminal Justice Concept of "Cyber Crime" & I.T. Act 2000: Hacking, Teenage Web Vandals, Cyber Fraud and Cyber Cheating, Virus on the internet, Defamation, Harassment & E-mail Abuse, Cyber pornography, Other IT Act Offences Monetary Penalties, Adjudication & Appeals under IT Act 2000. Jurisdiction & Cyber Crimes, Nature of Cyber Criminality, Strategies to tackle cyber crime & trends, Criminal justice in India & Implication on cyber crime.	
Unit –V		
	Protection of Cyber Consumers in India: Consumer Protection Act, Goods and Services under CPA, Consumer Complaints Defects in Goods & Deficiency in services. Restrictive & unfair trade practices. Consumer Foras, Jurisdiction & Implication on cyber consumers in India. Applicability of CPA	

Books:

1) Cyber Laws Simplified, Sood,McGraw Hill Publication
2) Information Systems Security, Godbole Willey Publication
3) Website : www.asianlaws.org

Paper No.:21 (Elective 2.1) **M.Sc.(IT) Semester : IV**

Topic: Paper title: C Sharp (C#)

Unit –I		
	Introduction: Basic concepts, features, visual object system, .NET, common language specification, Next Generation Windows Services, IL & metadata. **C# Types:** Value Types -Simple type, struct type, enumeration type. Reference Type -object type, class type, interfaces, delegates, string type, arrays. Boxing and unboxing conversions. Implicit, explicit, standard and 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, multicast delegates.	
Unit –II		
	Inheritance & Polymorphism: Inheritance -Basic class and derived class. Polymorphism, base class with a virtual method, derived class with override methods. **Interfaces:** Interfaces -Base interface, interface body, interface members, interface methods, interface properties, interface events, interface indexes, interface mapping, interface implementation.	
Unit –III		
	Inheritance & Polymorphism: Inheritance -Basic class and derived class. Polymorphism, base class with a virtual method, derived class with override methods. **Interfaces:** Interfaces -Base interface, interface body, interface members, interface methods, interface properties, interface events, interface indexes, interface mapping, interface implementation.	
Unit –IV		
	Exceptional Handling: Checked & unchecked statement, compiler setting for overflow checking, programmatic overflow checking. Exceptional handling statement -try & catch, try & finally, try-catch-finally. Throwing exception, re-throwing exception.	
Unit –V		
	Exceptional Handling: Checked & unchecked statement, compiler setting for overflow checking, programmatic overflow checking. Exceptional handling statement -try & catch, try & finally, try-catch-finally. Throwing exception, re-throwing exception. **Configuration & Deployment:** Conditional compilation -Processor usage, the conditional attribute. Documentation comments in XML -Describing an element, adding remarks and lists, examples, describing parameters, describing properties, documentation compiling, NGWS components. **Security:** Code Access Security, verification of type security, permissions, standard permissions, identity permissions, role based security.	

References:

Paper No.:21 (Elective 2.2) **M.Sc.(IT) Semester : IV**

Topic: Paper title: ASP.Net

Unit –I		
	HTML Basics: Introduction to Internet, Applications, Web designing, web browser, web pages, home page, web site, web servers, www. Concepts of hypertext, hypermedia, versions of HTML, elements of HTML, syntax, sections of HTML, building & executing html documents, Various tags of HTML: Headings & Title, Text-level elements, Changing Colors font, size using FONT> Tag, Text alignment & paragraph Creating links with <A Href> tag, Inserting image using <IMG> tag, Creating Table with <TABLE> tag, rowspan, colspan attributes. <FRAMESET> & <FRAME> tag, <FORM> tag, creating text boxes, buttons, checkboxes, radio buttons, hidden control, password, lists & dropdown list, textarea. Submitting a form, get & post method. ASP & HTML forms. Working with Cascading Style Sheet (CSS).	
Unit –II		
	ASP.NET Controls: Overview of dynamic web page, introduction & features of ASP.NET, understanding ASP.NET controls, applications, web servers, installation of IIS. Web fors, web form controls, server controls, client controls, adding controls to web form, buttons, text box, labels, checkbox, radio buttons, list box. Adding controls a runtime, Running a web application, creating a multiform web project, Form validation: client side and server side validation, Validation controls: required field comparison range, Calendar control, Ad rotator control, Internet Explorer control.	
Unit –III		
	ADO.NET: Overview of ADO.NET, from ADO to ADO.NET, ADO.NET architecture, Accessing data using data adapters and datasets, using command and data reader, binding data to data bind controls, displaying data in data grid.	
Unit –IV		
	XML in .NET: XML basics, attributes, fundamentals of XML classes: Document, text writer, text reader, XML validations, XML in ADO.NET, Data document	
Unit –V		
	Web Services: Introduction, State management, view state, session state, application state, service description language, building & consuming a web service. Web application development, Caching, Threading concepts, Creating threads in .NET, Managing threads, Thread Synchronization, features of .NET, role based security & code access security, permissions	

References:

1. The Completer Reference ASP.NET – Mathew Macdonald (TMH)
2. Professional ASP.NET – Wrox publication
3. VB.NET Programming Black Book – Steven Holzner (Dreamtech pub.)
4. Introduction to .NET framework – Wrox publication.
5. ASP.NET Unleashed - bpb publication.
6. Learn HTML in a weekend – Steven E. Callihan (TMH)
7. Using HTML – Lee Anne Philips (PHI)

Paper No.:20 (Elective-2.3) **M.Sc.(IT) Semester : IV**

Topic: Paper title: Android Programming

Unit –I		
	Android Fundamentals & Environment What is Android , History and Version, Features of Android, Android Application **Environment Setup:** Setup Java Development Kit (JDK), Android SDK, Eclipse IDE, Android Development Tools (ADT) Plugin, Create Android Virtual Device. **Architecture**: Linux kernel, Libraries, Android Runtime, Application Framework. **Application Components:** Activities, Services, Broadcast Receivers, Content Providers. Create Android Application, Anatomy of Android Application, The Main Activity File, The Manifest File, The Strings File, The R File, The Layout File, Running the Application.	
Unit –II		
	Activity and Intent • Activity LifeCycle • Implicit Intent & Explicit Intent **Android UI Widgets** • UI Widgets : Working with Button , Toast, Custom Toast • ToggleButton, CheckBox, AlertDialog, Spinner • AutoCompleteTextView, RatingBar & ProgressBar • DatePicker & TimePicker **Menus in Android** • Option Menu, Context Menu and Popup Menu	
Unit –III		
	Service in Android • Android Service • Data Storage: Internal Storage, External Storage, • SQLite Database: SQLite Example with GUI by Spinner **XML and JSON Parsing** • XML Parsing SAX, XML Parsing DOM • XMLPullParser & JSON Parsing	
Unit –IV		
	Android Multimedia • Playing Audio and Video in android, Example • Android Speech API: Android TextToSpeech Tutorial , TextToSpeech Example with Speed option **Telephony API** • TelephonyManager: Get Call State, Call State BroadcastReceiver • How to make a Phone Call, Send SMS & Send Email	
Unit –V		
	Device Connectivity & Android Sensor • Bluetooth Tutorial & List Paired Devices • Andriod Sensor: motion sensor, position sensor and environmental sensor. **Android Animation** • Animation:Rotate, Slide and Flip images and text.	

Reference:

1. Android Tutorial, Simply Easy Learning by tutorialspoint.com.
Link:http://www.tutorialspoint.com/android/android_tutorial.pdf

Books:

1) Professional Andriod 4 Application Development : Reto meier, Wrox publication.
2) Andriod Apps for Absolute beginners : Wallace Jadson, Apress.
3) The Complete Andriod Guide: Kevin Purdy
4) Javapoint Tutorial : http://www.javapoint.com/andriod-tutorial

Paper-21

Major Project

Team size : maximum 2 students
Project Work : 40

Project Report : 20

Viva Voce : 10

Total : 70

Paper-22

Seminar: 30 marks