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Syllabus for B.Sc., Computer Science effective from the Batch 2015-2016

Year: III Year Subject Code : **U15MCS501** / U15MCA501 Semester : V

Major - 5 Title: **Database Management System**

Credits: 3 Max. Marks. 75

Objective:

- To understand difference between storing data in File Management System & DBMS and advantages of DBMS.
- To understand conceptual and physical design of a database.
- To understand RDBMS and queries to design database and manipulate data in it.
- To know basic database backup and recovery.

Unit: 1

Introduction of DB system-Database system architecture [Chapter 1 & 2]

Unit: 2

The Relational Algebra & Calculus, Relational Query Languages [Chapter 4 & 5]

Unit: 3

ER Model, EER Model, Introduction to Database design, Functional dependency & decomposition [Chapter 6, 7 ,8 & 9]

Unit: 4

Normalization, Query Processing and optimization, database recovery system, database security [Chapter 10, 11, 13 & 14]

Unit: 5

Oracle-Features-Advantages-PL/SQL Block-PL/SQL procedure- PL/SQL Function-Cursor Management-Triggers-Exception Handling

TEXT BOOKS:

1. Singh,"DB Systems-Concepts,Design and Applications" Pearson Education [Units 1 to 4]
2. Micheal Abbey and Micheal J.Corey,"Oracle-A Beginners Guide", TMH [Units 5]

REFERENCE BOOKS:

1. R. Elmarsi and SB Navathe, "Fundamentals of Database Systems", Pearson Education
2. Ramakrishnan and Gherke, "Database Management Systems", TMH.
3. Jim Melton, Alan Simon, "Understanding the new SQL: A complete Guide", Morgan Kaufmann Publishers
4. A. K. Majumdar, P. Battacharya, "Data Base Management Systems', TMH
5. Bipin Desai, "An Introduction to database Systems", Galgotia Publications.
6. Abraham Silberschatz,H.F.Korth and S.Sudarshan, "Database System Concepts"-Mc Graw Hill Publications
7. Gerald V.Post,"DBMS" Mc Graw Hill Publications
8. Micheal Abbey and Micheal J.Corey,"Oracle-A Beginners Guide", TMH
9. Alexis Leon and Mathews Leon, "Essential of DBMS",Vijay Nicole Publications
10. Atul Kahate,"Introduction to DBMS",Pearson Education

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Syllabus for B.Sc., Computer Science effective from the Batch 2015-2016

Year: III Year Subject Code : **U15MCS502** / U15MCA502 Semester : V

Major - 6 Title: **Programming with Java**

Credits: 3 Max. Marks. 75

Objective:

- To make students well versed with programming in java.

Unit: 1

OOP and Java-The Primaries-Control Statement [Chapter 1, 2 & 3]

Unit: 2

Arrays and Methods, Classes and Objects-Inheritance and Polymorphism [Chapter 4, 5 & 6]

Unit:3

Interfaces and Packages-Applets-Abstract Windowing Toolkit-I [Chapter 7,8 & 9]

Unit:4

Abstract Windowing Toolkit-II - Exception Handling – Multithreading [Chapter 10,11 & 12]

Unit:5

I/O streams – Networkiong – The Java.lang Package [Chapter 13,14 & 15]

TEXT BOOKS:

1. C.Muthu, “Essentials of Java Programming”, Vijay Nicole Publications

REFERENCE BOOKS:

1. Patrick Naughton and Herbert Schildt, “Java-2 The Complete Reference”, TMH.
2. Y. Daniel Liang, “Introduction to Java Programming, Comprehensive Version” Pearson.
3. Krishnamoorthy. R, & Prabhu S ,”Internet and Java Programming”, New Age Intl.
4. David Flanagan, Jim Farley, William Crawford and Kris Magnusson, “Java Enterprise in a Nutshell”, O’Reilly.
5. Deitel and Deitel,”Java how to program”,PHI Publications
6. E.Balagurusamy,” Programming In Java”,TMH Publications
7. Peter Norton,”Peter Norton Guide to Java Programming”,Techmedia Publications

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Syllabus for B.C.A., effective from the Batch 2015-2016

Year: III Year Subject Code : U15ECA501 Semester : V

Elective -1 Title: B. Computer Graphics (Elective - I)

Credits: 3 Max. Marks. 75

Objective:

To understand the graphics applications and its use.

Unit: 1

Introduction to Computer Graphics- Video Display Devices- Raster Scan Systems- Random Scan System- Interactive Input Devices-Hard Copy Devices-Graphics Software-Output Primitives-Line Drawing algorithms-Initializing Lines-Line Function-Circle Generating Algorithms

Unit: 2

Attributes of Output Primitives-Line Attributes-Color and Grayscale Style-area filling algorithms-Character Attributes-Inquiry Functions-Two dimensional transformation-basic transformation-composite transformation-matrix representation-other transformations

Unit: 3

Two dimensional Viewing-Window to viewport co-ordinates transformation-Clipping Algorithm-Interactive input methods-Physical input devices- Logical Classification of input devices-interactive picture construction methods

Unit: 4

Three dimensional concepts- 3D display methods-Parallel projection-Perspective Projection-Depth Cueing-Visible line and Surface identification- 3D transformations

Unit : 5

3D Viewing-Projection-Viewing transformation-Implementation of viewing operations-Hidden Surface and Hidden Line removal-Back face Removals

TEXT BOOKS:

1. D.Hearn and M.P.Baker," Computer Graphics",Pearson Education

REFERENCE BOOK:

1. Foley, Van Dam, Feiner, Hughes, Computer Graphics Principles & Practice, Pearson
2. Chennakesava R. Alavla "Computer Graphics", PHI Learning Pvt. Limited
3. W.M.Newman and R.F.Sproull, " Principles of Interactive Computer Graphics", MGH editions
4. Malay K.Pkhira,"Computer Graphics, Multimedia and Animation",PHI edition

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Syllabus for B.Sc., Computer Science effective from the Batch 2015-2016

Year: III Year Subject Code : **U15SCS501** / U15SCA501 Semester : V

Skill Based -3 Title: **Visual Programming (SBS - III)**

Credits: 3 Max. Marks. 60

Objective:

- To know more about Visual Basic Codings

UNIT: 1

Getting Started-The VB environment and help system-Customizing a form and writing simple programs [Chapter 1 to 3]

UNIT:2

First steps in building the user interface-first step in programming-displaying information [Chapter 4 to 6]

UNIT:3

Controlling program flow – built in function – writing functions and procedures [Chapter 7 to 9]

UNIT:4

Organizing information via code – Organizing information via Controls – Building large projects [Chapter 10 to 12]

UNIT:5

VB Objects and an introduction to OOP-Finishing the interface-Tools and Techniques for testing, debugging and optimization [Chapter 13 to 15]

TEXT BOOKS:

1. VB 6 from the ground up, Gary Cornell-MGH

REFERENCE BOOKS:

1. VB 6 Programming-CDG TMH publications
2. VB 6 –Content Development Group-TMH
3. VB 6 How to program,Deitel and Associates-Pearson Education.

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Syllabus for B.Sc., Computer Science effective from the Batch 2015-2016

Year: III Year Subject Code : **U15MCS601** / U15MCA601 Semester : VI

Major - 7 Title: **Open Source Software**

Credits: 3 Max. Marks. 75

OBJECTIVE:

To equip the students with basic programming skill in web programming

UNIT I: HTML

Introduction to HTML-tags-structure-title & footers-text formatting-text styles-list-adding graphics to HTML documents-tables-linking documents-frames-DHTML: Cascading Style Sheet-Class: External Style Sheet

UNIT II: VB Script

VB Script-Basics-Working with Arrays-Constants-The Scope and lifetime of a Variable-VB Script Operators-Flow control-Subroutines and Functions Procedures-Coding Conventions

UNIT III: JAVA SCRIPT

Introduction to JavaScript –Advantages-Writing java script into HTML –Data types-variable-array-operator-functions-Dialog boxes-java script document object model

UNIT IV: MYSQL & PHP

MYSQL–introductions-Benefits-Instruction for installing MYSQL-instruction for setting up-MYSQL user account-Creating a database in MYSQL

PHP: PHP & HTML-Basics of PHP-data types-variables-constant-operators-arrays-Conditional statement-looping

UNIT V: PHP

PHP functions: user defined functions-built in functions-PHP server variable-working with date & time-performing mathematical operations- Working with string functions-working with forms-debugging and errors

TEXT BOOKS:

1. I. Bayross, Web Enable Commercial Application Development Using HTML,DHTML, Javascript, Pen CGI, BPB Publications

2. VB Script Basics-Dani Vainstain, BPB

REFERENCE BOOKS:

1. T. A. Powell, Complete Reference HTML (Third Edition),TMH
2. J. Jaworski, Mastering Javascript, BPB Publications
3. Internet Programming with VB Script and Java Script, Thomson Learning , HathleenKalata
4. Powel, Thomas Schneider,Fritz, Java Script" The Complete Reference",TMH
5. Deitel & Deitel ,internet & world wide web How to program, Pearson Education
6. Eddie Jackson ,"VB Script" BPB

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Year: III Year Subject Code : **U15MCS602** / U15MCA602 Semester : VI

Major - 8 Title: **Cloud Computing**

Credits: 3 Max. Marks. 75

Objectives:

- To know the latest trend in cloud

UNIT: 1

Introduction to Cloud Computing- Migrating into a Cloud-Enriching the integration as a service paradigm for the cloud era-Enterprise Cloud Computing Paradigm

UNIT: 2

Infrastructure as A Service [IAAS]: Virtual Machines Provisioning and migration services-On the Management of Virtual Machines for Cloud Infrastructures-Enriching Cloud Computing Environment using a Cluster as a Service

UNIT: 3

Secure Distributed Data Storage in Cloud Computing-Integration of Private and Public Clouds-CometCloud

UNIT: 4

T-Systems' Cloud-Based Solutions for Business Applications-Workflow engine for Clouds-Understanding scientific applications for cloud environment

UNIT: 5

The MapReduce Programming Model and Implementations-An architecture for Federated Cloud Computing-SLA Management in Cloud Computing:A Service Providers's Perspective-Performance Prediction for HPC on Clouds

NOTE: Case Studies Excluded [in all the Five Units]

TEXT BOOK:

1. Cloud Computing Principles and Paradigms,Rajkumar Buyya,James Broberg and Andrzej Goscinski-Wiley [A John Wiley & Sons,Inc.,Publications

REFERENCE BOOKS:

1. Cloud Computing Principles and Paradigms, T.S.Mohan,Pethuru Raj-TMH
2. Cloud Computing , Tariq Ellahi,Benoit Hudzia, Hui Li, Malik A.Lindner and Philip Robinson,Pearson Education.

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Syllabus for B.Sc., Computer Science effective from the Batch 2015-2016

Year: III Year Subject Code : **U15ECS601** / U15ECA601 Semester : VI

Elective - 2 Title: **Software Engineering (Elective - II)**

Credits: 3 Max. Marks. 75

Objective:

- To understand the importance, limitations and challenges of processes involved in software development.
- To gain knowledge of various software models.
- To gain knowledge of various software design activities.
- To learn cost estimation, software testing, Maintenance and debugging**.**

UNIT: 1

Introduction to Software Engineering-A Generic View of Process-Process Models [Chapter -1,2 & 3]

UNIT: 2

An Agile view of Process-Software engineering practice-System Engineering [Chapter -4,5 & 6]

UNIT: 3

Requirements Engineering-Building the analysis Model-Design Engineering [Chapter-7,8 & 9]

UNIT: 4

Crerating an Architectural Design-Modeling Component Level design-Performing User Interface Deisn [Chapter-10,11 & 12]

UNIT:5

Testing Strategies –Testing Tactics-Product Metrics [Chapter-13,14 & 15]

TEXT BOOKS:

1. Software Engineering Practitioner's Approach by Roger S. Pressman, Sixth Edition

REFERENCE BOOK:

1. An integrated approach to Software Engineering by Pankaj Jalote
2. Jibitesh Mishra and Ashok Mohanty, "Software Engineering", Pearson
3. James Peter, W. Pedrycz, "Software Engineering: An Engineering Approach", John Wiley & Sons.
4. Software Engineering Concepts by Richard and Fairley

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Year: III Year Subject Code : **U15SCS601** / U15SCA601 Semester : VI

Skill Based - 4 Title: **Multimedia (SBS - IV)**

Credits: 3 Max. Marks. 60

Objectives:

- To get the Knowledge about the basics concepts of multimedia and its applications.
- To get the knowledge of its relevance with internet and its future aspects.

Unit:1

Components of Multimedia-Hardware Essentials-Setting up the Software-Understanding Digital Data-Digital Audio [Chapter 1 to 5]

UNIT: II

Sound Card-Audio Recording and editing techniques-MP3 Revolution-MIDI Fundamentals-Working with MIDI [Chapter 6 to 10]

UNIT: III

Designing Texts-World of Colours-Digital Imaging-Scanning and digital Photography-Graphics Editing [Chapter 11 to 15]

UNIT: IV

Fundamentals of Computer Animation-Developing Animation for multimedia Projects-Introducing Digital Video-Digital Video Production Techniques-Project Conceptualization, design and development [Chapter 16 to 20]

UNIT: V

Multimedia Authoring-Project Planning and Costing-Multimedia Skill Sets and Career Opportunities-Compact Discs-CD Replication Process-Digital Versatile Discs
[Chapter 21 to 26]

TEXT BOOKS:

1. S.Gokul, “Multimedia Magic” BPB Publications

REFERENCE BOOKS:

1. Multimedia BASICS – Weixel, Fulton, Barksdale, Morse, Thomson Brooks/Cole – ESWAR Press
2. Multimedia & Web Design – Vikas Gupta, Dreamtech Press
3. Adobe Premiere Pro Bible – Droblas, Greenberg , Wiley – India
4. Digital Multimedia – Chapman & Chapman, Wiley – Dreamtech
5. Fundamentals of Multimedia – ZeNinan Li, Mark Drew, Pearson – PrenticeHall
6. Multimedia: Making It Work – Tay Vaughan (TATA McGRAW-HILL)
7. Multimedia: Computing Communications & Applications – Ralf Steinmetz and Klara Nahrstedt, Pearson Education