BHARATHIAR UNIVERSITY: COIMBATORE-641 046

B.Sc. CS/IT/CT/SS/MM/CSA &BCA
(For the students admitted from the academic year **2014-2015** and onwards)

CORE Lab 6 - VISUAL PROGRAMMING: VB, VC++ & ORACLE
(One Program either from VB or VC++ and one from ORACLE)

VISUAL BASIC

1. Write a simple VB program to accept a number as input and convert it into
    a. Binary
    b. Octal
    c. Hexa-decimal
2. Write a simple VB program to add items to list box with user input and move the selected item to combo box one by one.
3. Write a simple VB program to develop a calculator with basic operation.
4. Design a form using common dialog control to display the font, save and open dialog
   box without using the action control property.
5. Write a VB Program to develop a menu driven program. Add a MDI window in the form and arrange them in the cascading/horizontal style using menus (Create a menu to add form, arrange) (Menu Item 1). Also change the form color using the menu in another menu item (Menu Item 2).

VISUAL C++
   1. Write a VC++ Program to display Toolbar and Status bar
   2. Write a VC++ Program to add, delete string in a list box
   3. Write a VC++ Program to perform menu Editor
   4. Write a VC++ Program to perform Free Hand Drawing
   5. Write a VC++ Program to perform serialization-SDI

ORACLE
1. **Create** a table for Employee details with Employee Number as primary key and following fields: Name, Designation, Gender, Age, Date of Joining and Salary. **Insert** at least ten rows and perform various **queries** using any one Comparison, Logical, Set, Sorting and Grouping operators.

2. Create tables for library management system which demonstrate the use of **primary key** and **foreign key**. Master table should have the following fields: Accno, Title, Author and Rate. Transaction table should have the following fields: User id, Accno, Date of Issue and Date of Return. Create a Report(**Select verb**) with fields Accno, Title, Date of Issue for the given Date of Return with column formats.

3. Write a PL/SQL to **update** the rate field by 20% more than the current rate in inventory table which has the following fields: Prono, ProName and Rate. After updating the table a new field (**Alter**) called for Number of item and place for values for the new field without using PL/SQL block.

4. Write a PL/SQL to split the student table into two tables based on result (One table for "Pass" and another for "Fail"). Use **cursor** for handling records of student table. Assume necessary fields and create a student details table.

5. Create a database **trigger** to implement on **master** and **transaction** tables which are based on inventory management system for checking data validity. Assume the necessary fields for both tables.

6. Write a PL/SQL to raise the following **Exception** in Bank Account Management table when deposit amount is zero.

B.Sc. Information Technology - List of Elective Papers

Elective- I	Soft Computing / Animation Techniques / Business Intelligence
Elective- II	Network Security and Administration/ Mobile Computing / Internet programming
Elective- III	E- Learning /Component Technology/ E-Commerce

Note :

1. The syllabus for the above papers (**except Soft Computing, E-Learning and E-Commerce**) be the same as prescribed for the academic year 2011-12.

2. The syllabus for the **Soft Computing, E-Learning and E-Commerce** are furnished below:

ELECTIVE: SOFT COMPUTING

UNIT-I

Fundamentals of Neural Networks: Basic Concepts of Neural Networks, Human Brain, Model of an Artificial Neuron, Neural Network Architectures, Characteristics of Neural Networks, Learning Methods, Taxonomy of Neural Network Architectures, History of Neural Network Research, Early Neural Network Architectures, Some Application Domains. Back Propagation Networks: Architecture of a Back Propagation Network, Back Propagation Learning, Illustration, Applications.

UNIT-II

Associative Memory: Autocorrelators, Heterocorrelators, Exponential BAM, Associative Memory for Real-Coded Pattern Pairs, Applications, Recent Trends.
Adaptive Resonance Theory: Introduction, ART1, ART2, Applications, Sensitives of Ordering of Data.

UNIT-III

Fuzzy Set Theory: Fuzzy Versus Crisp, Crisp Sets, Fuzzy Sets, Crisp Relations, Fuzzy Relations. Fuzzy Systems: Crisp Logic, Predicate Logic, Fuzzy Logic, Fuzzy Rule Based Systems, Defuzzification Methods, Applications.

UNIT-IV

Fundamentals of Genetic Algorithms: Genetic Algorithms: History, Basic Concepts, Creation of Offsprings, Working Principle, Encoding, Fitness Function, Reproduction.
Genetic Modeling: Inheritance Operators, Cross Over, Inversion, And Deletion, Mutation Operator, Bit-Wise Operators, Bit-Wise Operators used in GA, Generational Cycle, Convergence of Genetic Algorithms.

UNIT-V

Integration of Neural Networks, Fuzzy Logic and Genetic Algorithms: Hybrid Systems, Neural Networks, Fuzzy Logic, and Genetic Algorithms Hybrids, Preview of Hybrid Systems.

TEXT BOOK:

S.Rajasekaran, G.A. Vijayalakshmi Pai, Neural Networks, Fuzzy Logic, and Genetic Algorithms, PHI Learning, 2010.

REFERENCE BOOKS:

1. Klir.G, Yuan B.B. Fuzzy Sets and Fuzzy Logic, Prentice Hall of India, 1997.
2. Laurance Fausett, Fundamentals of Neural Networks, Prentice Hall, 1992.
3. Gen, M. and R. Cheng, Genetic Algorithm and Engineering Design, John Wiley, 1997.

ELECTIVE: E-LEARNING

UNIT-I

E-Learning Evolution - Advantages and Disadvantages of E-Learning - Instructional design Models for E-Learning - Applying User-Centered Design to E-Learning - E-Learning tools – What is an E-Learning tool?

UNIT-II

Flash: Geometric shape tools – Drawing tools - Creating Precise Lines with the Pen Tool - Fill and stroke controls - Selection Tools - Designing and Aligning Elements.

UNIT-III

Creating Animation and Effects: Animation strategies – TimeLine Animation – Applying Layer Types - Character animation Techniques.

UNIT-IV

Sound: Import and Export formats – Importing sound to flash – Adding sound to timeline – Synchronizing audio to animations - Stopping sounds. Video: Integrating and Importing Video.

UNIT-V

Adobe Premiere: Starting Movie Projects: Starting New Projects - Reviewing and Changing Project Settings - Saving a Project. Adding Special Effects to Your Movies: Surveying Effects - Introducing the Effect Controls Window - Using Keyframes - Removing Effects - Working with Effect Presets.

TEXT BOOKS
1. E-Learning Concepts and Techniques - Pamela Berman, institute for InteractiveTechnologies, Bloomsburg University of Pennsylvania, USA (e-book), 2006.
2. MacroMedia Flash 8 Bible - Robert ReinHardt and Snow Dowd. 2006, 1st Edition, Wiley India (P) Ltd, New Delhi.
3. Adobe Premiere Elements For Dummies, Keith Underdahl, Wiley Publishing Inc.

REFERENCES
1. Flash 8 - Dinesh Maidasani. 20061st Edition, Firewall Media Publications, New Delhi.
2. Fred T.Hofstetter. 2001. MultiMedia Literacy, Tata McGraw Hill, New Delhi.
Multimedia making it work, Tay Vaughan. 2008. 7th Edition, Tata McGraw-Hill, New Delhi.

ELECTIVE : E-COMMERCE

Subject Description : This Subject deals with the E-Commerce

Goal : To learn about E-Commerce

Objective : On Successful Completion of this subject the students should have thorough understanding of: E-Commerce , E-Market , EDI , Business Strategies etc.

UNIT I:

Introduction to E-Commerce : The Scope of E-Commerce – Definition-E-Commerce & the Trade Cycle – Electronic Market – Electronic Data Interchange – The Internet Commerce – The E-Commerce in Perspective. Business Strategy : The Value Chain – Supply Chains – Porter's Value Chain Model – The Inter Organizational Value Chain.

UNIT II:

The Introduction to Business Strategy – Strategic Implications of IT – Technology – Business Environment – Business Capability – Existing Business Strategy – Strategy Formulation & Implementation Planning – e-Commerce Implementation -Commerce Evaluation. The Inter Organizational Transactions – The Credit Transaction Trade Cycle. A Variety of Transactions – Pens & Things.

UNIT III:

E-Markets : Markets – E-Markets-Usage of E-Markets-Advantages & Disadvantages of E-Markets . EDI : Introduction – Definition - Benefits of EDI – EDI Standards – EDI Communication EDI Implementation – EDI Agreement – EDI Security.

UNIT IV:

The Internet : The Internet – The Development of the Internet – TCP/IP – Internet Components – Uses of the Internet – A Page on the Web : HTML Basics – Introduction to HTML – Further HTML – Client Side Scripting – Server Side Scripting – HTML Editors & Editing – The Elements of E-Commerce : Elements – e-Visibility – The e-Shop – On line Payments - Delivering the Goods – Internet e-Commerce Security .

UNIT V:

E-Business : Introduction - The Internet Bookshops – Grocery Supplies - Software Supplies and Support – Electronic Newspapers – The Internet Banking - The Virtual Auctions – Online Share Dealing – Gambling on the Net – e-Diversity.

TEXT BOOK:

David Whiteley–"E-Commerce – Strategy, Technology & Applications " Tata McGraw-Hill.

SKILL BASED SUBJECTS FOR B.Sc. COMPUTER SCIENCE

SOFTWARE ENGINEERING & SOFTWARE PROJECT MANAGEMENT

UNIT – I:

Software Engineering: A Layered Technology – Software Process – Software Process Models – The Prototyping. Requirement Engineering– Software prototyping - Elements of analysis model – Data modeling – Functional modeling and information flow.

UNIT – II:

Software design and Software engineering – The Design process – Design principles – Design concepts – Effective modular design –Software Architecture.

UNIT – III:

Software testing fundamentals – Test Case Design - White box testing – Basis path testing – Control structure testing – Black box testing. Unit testing – Validation testing – System testing.

UNIT – IV:

Software Configuration Management: Definitions and terminology – processes and activities. Software Quality assurance: Definitions – Quality control and Quality assurance – Organization of Structures. Risk Management: Risk Identification – quantification - Monitoring - Mitigation. Software requirements gathering: Steps to be followed – Outputs and Quality Records - Skill sets required – Challenges.

UNIT – V:

Estimation: What is Estimation? – When and Why? – Three phases of Estimation – Estimation methodology – Formal models of Size Estimation. Design and Development phases: Reusability - Technology choices – Standards – Portability -User interface issues – Testability - The Effect of Internet on Project Management.

TEXT BOOKS:
1. Roger S. Pressman: Software Engineering, Tata McGraw Hill, V Edition.
2. Gopalaswamy Ramesh, Managing Global Software Projects, Tata McGraw Hill, New Delhi, 2002.

REFERENCE BOOKS:
1. Watts S Humphrey: A Discipline for Software Engineering, Pearson Education, 2001.
2. Bob Hughes and Mike Cotterell, Software Project Management, 2nd Edition, Tata McGraw Hill, 2002.