

1. Horowitz and Sahani, Fundamentals of Data Structures, Galgotia Publication, New Delhi.
2. R. Kruseetal, Data Structure and Program Design in C, Pearson Education Asia Delhi
3. A. M.Tenenbaum, Data Structures using C & C++, PHI, India
4. K Loudon, Mastering Algorithms with C, Shroff Publication and Distributor Pvt. Ltd.
5. Bruno R Preiss, Data Structure and Algorithms with Object Oriented Design Pattern in C++, John Wiley & Sons
6. Adam Drozdek, "Data Structures and Algorithms in C++", Thomson Asia Pvt. Ltd. Singapore

Reference books

1. Lewis, H.R., Denenberg, L., Data Structures and their Algorithms. Published by Addison-Wesley, UK, 1991
2. Oluwadare, S.A., Agbonifo, O.C., Fundamentals of Data structures and Algorithms. Lecture Notes, 2013

BCS-13 INTERNET & JAVA PROGRAMMING

Course Category	: Department Core (DC)
Pre-requisite Subject	: NIL
Contact Hours/Week	: Lecture : 3, Tutorial : 1 , Practical: 2
Number of Credits	: 5
Course Assessment Methods	: Continuous assessment through tutorials, attendance, home assignments, quizzes, practical work, record, viva voce and Three Minor tests and One Major Theory & Practical Examination
Course Outcomes	: The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course

1. To identify different components of client server architecture on Internet computing.
2. Knowledge of how to develop and deploy applications and applets in JAVA.
3. Knowledge of how to develop and deploy GUI using JAVA Swing and AWT.
4. Design, develop and implement interactive web applications.
5. Be able to implement, compile, test and run JAVA programs comprising more than one class and to address a particular software problem.
6. To understand the basic concepts of Internet services and related technologies.
7. Develop programs using the JAVA Collection API as well as the JAVA standard class library.

Topics Covered

UNIT-I

Internet: Internet, Connecting to Internet: Telephone, Cable, Satellite Connection, Choosing an ISP, Introduction to Internet Services, E-Mail Concepts, Sending and Receiving Secure E-Mail, Voice and Video Conferencing. 9

UNIT-II

Core JAVA: Introduction, Operator, Data type, Variable, Arrays, Control Statements, Methods & Classes, Inheritance, Package and Interface, Exception Handling, Multithread Programming, I/O, JAVA Applet, String Handling, Networking, Event Handling, Introduction to AWT, AWT Controls, Layout Managers. 9

UNIT-III

JAVA Swing: Creating a Swing Applet and Application, Programming using Panes, Pluggable Look and feel, Labels, Text Fields, Buttons, Tabbed Panes. 9

JDBC: Connectivity Model, JDBC/ODBC Bridge, JAVA. SQL Package, Connectivity to Remote Database.

UNIT-IV

JAVA Beans: Application Builder Tools, The Bean Developer Kit(BDK), JAR files, Introspection, Developing a Simple Bean, using Bound Properties, The JAVA Beans API, Session Beans, Entity Beans, Introduction to JAVA Servlet: Servlet Basics, Servlet API Basic, Life Cycle of a Servlet, Running Servlet. 9

EXPERIMENTS

1. Basic programs of simple statements, conditional statements, iterative statements and arrays
2. Programs having object oriented concepts like Inheritance and Interface
3. Programs for Exception Handling and Event Handling
4. Programs of Threads and Multithreading
5. Programs related to Applets and Swings
6. Programs including JAVA Beans and Servlets

Textbooks

1. Naughton, Schildt, The Complete Reference JAVA2, TMH.
2. Balaguruswamy E, Programming in JAVA, TMH

Reference books

1. Margaret Levine Young, The Complete Reference Internet, TMH.
2. Dustin R. Callway, Inside Servlets, Addison Wesley.
3. Mark Wutica, JAVA Enterprise Edition, QUE.
4. Steven Holzner, JAVA2 Black book, Dreamtech.

BCS-14 SOFTWARE LAB-III

Course Category : Engineering Fundamental (EF)
Pre-requisite Subject : NIL
Contact Hours/Week : Lecture : 0, Tutorial : 0 , Practical: 4
Number of Credits : 2
Course Assessment : Continuous assessment through three Viva voce, Practical