

Program: BCA

Semester: Fifth

Course: Programming in Java

Course Code: 3C.301

L	T	P	C
3	0	0	3

Course Objective:

- Knowledge of the structure and model of the Java programming language
- Use the Java programming language for various programming technologies
- Develop software in the Java programming language
- Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements
- Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem

Unit I:

JAVA environment. JAVA program structure, Tokens, Statements, JAVA virtual machine, Constant & Variables, Data Types, declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting. Operators :Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special.

Unit II:

Expressions & its evaluation. If statement, if...else... statement, Nesting of if...else... statements, else...if Ladder, Switch, ?operators, Loops –While, Do, For, Jumps in Loops, Labeled Loops. Defining a Class, Adding Variables and Methods.

Unit III:

Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods. Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract methods and Classes, Visibility Control. Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package Adding a Class to a Package, Hiding Classes.

Unit IV:

Creating Threads, Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the Executable Interface. Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets ,Getting Input from the User.

Suggested Readings:

1. Programming with Java, E.Balaguruswamy, TMH.
2. Core Javafor beginners, RASHMI Kanta Das, Vikas pub.

Program: BCA

Semester: Fifth

Course: Programming in Java Lab

Course Code: 3CP.301

L	T	P	C
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Course Objective:

- Understand the basics of JAVA programs and its execution.
- Differentiate between C++ and Java programming.
- Concepts like packages and interfaces.
- Understand life cycle of the applets and its functionality.
- Understand the usage util package.
- Develop java programs using interfaces

Program:

1. To find square root of given number
2. To enter principal, rate & time and find simple interest
3. To find whether a year is leap year or not
4. To enter a number from keyboard and find out Fibonacci series
5. To enter a number from keyboard and find out factorial of the number
6. To enter a number from keyboard and check whether the number is palindrome or not
7. To enter a number from keyboard and print the prime numbers present within it
8. To enter a number from keyboard and determine whether it is Armstrong or not.
9. Program to demonstrate switch statement
10. To swap two numbers without using third variable
11. To find the greatest among 3 numbers
12. Program to sort an array in an ascending order
13. Program to find out the sum and average of the elements present in an array
14. Program to add the elements of two different two dimensional array.
15. Program to find out the biggest and smallest number from a matrix.
16. To implement the concept of final class
17. To implement the concept of interface
18. Program to reverse a specified string.
19. Showing a program using package.
20. To create an applet
21. To implement the concept of thread

Program: BCA

Semester: Fifth

Course: Data Mining and Warehousing

Course Code: 3C.321

L	T	P	C
4	0	0	4

Course Objective:

- Data preprocessing and data quality.
- Modeling and design of data warehouses.
- Algorithms for data mining.
- Be able to design data warehouses.
- Ability to apply acquired knowledge for understanding data and select suitable methods for data analysis.

Unit I:

Data Warehousing

Introduction to Data Warehousing – Batch, OLTP, DSS Applications. Different natures of OLTP and DW databases. Commercial Importance of DW. Data Marts

Unit II:

Basic Elements of Data Warehouse – Source System, Data Staging Area, Presentation Server Business Dimensional Life Cycle Dimensional Modeling. Multidimensional Data Model, Data Cubes, OLAP DW Bus Architecture,

Unit III:

Conformed Dimensions Star Schema and Snowflake Schema Normalization VS Dimensional Modeling Slicing and Dicing, Drilling, Drill-up, Drill-down, Drill-within, Drill-across. Bitmap Index Aggregation Metadata Design Issues, Partitioning, Size Estimation Example Applications: Retail, CRM, Telecom, E-Commerce, Insurance End-user applications

Unit IV:

Data Mining

KDD and Data Mining SQL and Data Mining Association Rules Bayesian Network Approach Decision Trees Neural Networks, Genetic Algorithms, Rough Sets, SVM Temporal & Spatial Data Mining Sequence Mining Text Mining Web Mining

Suggested Readings:

1. Data Warehousing Data Mining & Olap, Barron, Alex, TMH New Delhi
2. Data Warehousing: Concepts, Techniques, Products and Applications C.S.R.Prabhu, PHI Pvt Ltd., New Delhi.
3. Data Warehousing Data Mining & Olap, Barron, Alex, Smith Stephen J, Mc Graw Hill
4. R.Kimball – DataWarehouse Toolkit (J.Wiley)
5. A.K.Pujari – Data mining (University Press)

Program: BCA

Semester: Fifth

Course: Internet and Website Management

Course Code: 3C.322

L	T	P	C
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Course Objective:

- Employ fundamental computer theory to basic programming techniques.
- Use fundamental skills to maintain web server services required to host a website.
- Select and apply markup languages for processing, identifying, and presenting of information in web pages.
- Use scripting languages and web services to transfer data and add interactive components to web pages.
- Incorporate aesthetics and formal concepts of layout and organization to design websites that effectively communicate using visual elements.
- Combine multiple web technologies to create advanced web components.
- Design websites using appropriate security principles, focusing specifically on the vulnerabilities inherent in common web implementations.
- Incorporate best practices in navigation, usability and written content to design websites that give users easy access to the information they seek.

Unit I:

Internet Basics: Basic concepts, Communication on the Internet, Internet Domains, Using Web Browsers, Internet Server Identities, Establishing Connectivity on the Internet, Client IP Address, Web Client, Domain Registration.

Unit II:

Introduction to HTML: HTML, HTML Editors, HTML Tags, Commonly Used HTML Commands, Title and Footers, Heading, paragraphs, comments Text Formatting, TextStyle, Lists, Types of list: ordered list, unordered list, Adding Graphics to HTML Documents, Tables, Attributes of Table: row span, call span, Table with heading and images, Linking Documents, Frames.

Unit III:

Java Script : Java Script in Web Pages, Advantages of Java Script, Data Types and Literals, Type Casting , Java Script Array, Operators and Expression, Conditional Checking , Function, User Defined Function.

Unit IV:

XML: Introduction, Difference between XML and HTML, Modeling XML Data, Document Type Definition (DTD), XML tree, Styling XML with XSL, XHTML Creation of Dynamic Web pages using Java Server Pages (JSP): Dynamic Web Page, Introduction of JSP, Pages Overview, JSP Scripting, Standard Action, Page Directive, Include Directive.

Suggested Readings:

1. Ivan Bay Ross- Web Enable Commercial Application Using HTML, DHTML, BPB Publication.
2. Michel Morrison -HTML and XML for Beginners, PHI, New Delhi.
3. H.M Diatal and P.J Diatal -Java How to Program, PHI, New Delhi.

Program: BCA
Semester: Fifth
Course: Cloud Computing
Course Code: 3C.323

L	T	P	C
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Course Objective:

- Understand the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications for state-of-the-art cloud computing
- Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
- Explain the core issues of cloud computing such as security, privacy, and interoperability.
- Choose the appropriate technologies, algorithms, and approaches for the related issues.
- Identify problems, and explain, analyze, and evaluate various cloud computing solutions.
- Provide the appropriate cloud computing solutions and recommendations according to the applications used.
- Attempt to generate new ideas and innovations in cloud computing.
- Collaboratively research and write a research paper, and present the research online.

Unit I:

Data Centre foot prints & Concepts Introduction To cloud Virtualization concepts Types of Virtualization & its benefits Introduction to Various Virtualization OS VMware , KVM etc HA/DR using Virtualization Moving VMs SAN backend concepts

Unit II:

Cloud Fundamentals Cloud Building Blocks Understanding Public & Private cloud environments Cloud as IaaS Private Cloud Environment Basics of Private cloud infrastructure QRM cloud demo Public Cloud Environment

Unit III:

Understanding & exploring Amazon Web services Managing and Creating Amazon EC2 instances Managing and Creating Amazon EBS volumes Tata Cloud details & demo Managing Hybrid Cloud environment

Unit IV:

Security& Privacy concern: Disaster recovery, quantum cryptography, three stage quantum cryptography algorithms, qubits.

Suggested Readings:

1. Distributed Cloud Computing- Hwang kai & others
2. Cloud Computing- Pandey Dr. U sand choudhary Dr, kavita

Program: BCA
Semester: Fifth
Course: Soft Computing
Course Code: 3C.324

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Course Objective:

- To know about the basics of soft computing techniques and also their use in some real life situations.
- To solve the problems using neural networks techniques.
- To find the solution using different fuzzy logic techniques
- To use the genetic algorithms for different modelling
- To integrate the various soft computing techniques

Unit I:

Fuzzy Set Theory: Basic Definition and Terminology, Set Theoretic Operations, MF Formulation and Parameterization, MF of two dimension, Fuzzy Union, Intersection and Complement. Fuzzy Rules and Fuzzy Reasoning: Extension Principles and Fuzzy Relations, Fuzzy IF THEN Rules, Fuzzy Reasoning.

Unit II:

Fuzzy Inference System: Introduction, Mamdani Fuzzy Models, Other Variants, SugenoFuzzy Models, Tekamoto Fuzzy Models. GENETIC ALGORITHMS .Fundamentals of Genetic Algorithms: Basic Concepts Creation, Offsprings Encoding, Fitness functions, Reproduction, Genetic Modeling: Inheritance Operators, Cross over, Inversion and detection, Mutation operator, Bitwise operators. ARTIFICIAL NEURAL NETWORKS:

Unit III:

Introduction, Architecture, Back Propagation and feed Forward Networks, Offline Learning, Online Learning. Supervised Learning of Neural Networks: Introduction, Perceptrons, Adaline, Back Propagation Multilayer Perceptrons, Back Propagation Learning Rules,

Unit IV:

Methods of Speeding. Radical Basis Function Networks, Functional Expansion Networks. Unsupervised Learning: Competitive Learning Networks, Kohonen self-organising networks, Hebbian Learning, The Hopfield Network.

Suggested Readings:

1. J.S.R. Jang, C.T.Sun and E.Mizutani, "Neuro-Fuzzy and Soft Computing" PHI/Pearson Education, New Delhi 2004.
2. S. Rajasekaran & G.A. Vijayalakshmi Pai, PHI, New Delhi 2003

Program: BCA

Semester: Fifth

Course: Seminar in Executive Communication

Course Code: 40B.401

L	T	P	C
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Course Objective: To impart more advanced basic skills through intensive practice, in this unit again the students get opportunities to apply their general awareness and classroom learning to practical situation to achieve the targeted career goal in this increasingly competitive world. Some of the career oriented units are Discussion Skills, Interview Skills, Job Search Strategies, Job Correspondence etc. , they need to undergo,

- An average student acquires basic skills required for a cherished job.
- Their appreciative personality development becomes a value added attribute in their professional sphere.
- The course enhances communication, leadership and teamwork *skills*; and personal development skills using practical approach and exposure of students to the realities of the world
- To put greater emphasis on development of non-technical skills, such as flexibility, leadership and good communication.

(Activity Based)

Seminar in Executive Communication; It is student-centric, value based, activity oriented professional education, where the Faculty is not only the disseminator of common wealth of knowledge and experience but the organizer of learning situations, facilitator of the learning process and co coordinator of learning following the age old adage of “**I hear, I forget, I see, I remember, I do, I understand.**” In this unit the students will get opportunities to apply their classroom learning to practical situation. There will be six distinctive units in this semester to develop the professional traits in them, so that they can meet the neo-challenges of job opportunities. Units are;

WORKSHOPS

- Debate
- Extempore
- Group Discussion
- Panel Discussion
- Presentation-Paper & Oral
- Reports: Survey Report, Project Report, Case Study

Suggested Books & Readings:

- Monippally, Matthukutty. M. 2001. Business Communication Strategies. 11th Reprint. Tata McGraw-Hill. New Delhi

- Swets, Paul. W. 1983. The Art of Talking So That People Will Listen: Getting Through to Family, Friends and Business Associates. Prentice Hall Press. New York
- Lewis, Norman. 1991. Word Power Made Easy. Pocket Books
- Sen , Leena .Communication Skills ; Eastern Economy Edition
- Ghanekar , Dr. Anjali . Essentials of Business Communication Skills ; Everest Publishing House
- David Green . Contemporary English Grammar, Structure & Composition ; MacMillan
- Dictionary; Oxford
- Dictionary ; Longman

Websites

- www.tatamcgrawhill.com/digital_solutions/monippally
- www.dictionary.cambridge.org
- www.wordsmith.org
- www.edufind.com
- www.english_the_easy_eay.com
- www.englishclub.com
- www.english_grammar_lessons.com
- www.wikipedia.org/wiki/english_grammar