COMPUTER APPLICATIONS

U.G.

DEPARTMENT OF COMPUTER APPLICATIONS

Programme Code: J **Programme Name: BCA**

Programme Outcomes

1. Exhibit understanding of broad business concepts and principles. (National)
2. To identify and define problems and opportunities.(Local)
3. Demonstrate the ability to identify a business problem, isolate its key components, analyze and assess the salient issues, set appropriate criteria for decision making, and draw appropriate conclusions and implications for proposed solutions. (Global)
4. Demonstrate the capabilities required to apply cross-functional business knowledge and technologies in solving real-world business problems (Global)
5. Demonstrate use of appropriate techniques to effectively manage business challenges. (National)
6. Capable of recognizing and resolving ethical issues. (National)

Programme Specific Outcomes

BCA Programme has been designed to prepare graduates for attaining the following specific outcomes:

1. Develop the skill to apply knowledge of mathematics, computer science and management in practice. (Global)
2. An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field. (National)
3. The program prepares the young professional for a range of computer applications, computer organization, techniques of computer networking, software engineering, Web Designing, Data mining, Networking and Android App development. (Global)
4. Learn to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.(Global)
5. Skill to communicate effectively. (National)

Course Outcomes

SEMESTER – I

Subject Code: 21J11
Course Name: PROGRAMMING IN C

Upon completion of the course, the students will be able to

1. To understand concepts in Programming.
2. Identify the situations where computational methods and computers would be useful.
3. Give a computational problem, identify and abstract the programming task involved.
4. Approach the programming tasks by using techniques and learn to write pseudo-code.
5. Choose the right data representation formats based on the requirements of the problem.

Subject Code: 21J1P
Course Name: PROGRAMMING IN C LAB

Upon completion of the course, the students will be able to

1. Read, understand and trace the execution of programs written in C language.
2. Write the C code for functions and structures.
3. Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
4. Write programs that perform operations using derived data types and string manipulations.
5. Able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.

Subject Code: 21AJ1
Course Name: FINANCIAL ACCOUNTING

Upon completion of the course, the students will be able to

1. Write financial statements in accordance with appropriate standards.
2. Prepare ledger accounts using double entry bookkeeping and record journal. entries accordingly.
3. Interpret the business implications of financial statement information.
4. Organize accounting information for planning and control and for the evaluation. of finance.
5. Develop Bank reconciliation statement from incomplete statement.

Subject Code: 21SEJ1P
Course Name: OFFICE AUTOMATION LAB

Upon completion of the course, the students will be able

1. To prepare documentation.
2. To perform accounting operations to perform presentation skills.
3. Exhibit improved understanding of computer operations.
4. To Operate Ms-office operations.
5. Gain skills & knowledge to browse and get updated world wide information.

Subject Code: 21NMJ1
Course Name: PC- SOFTWARE

Upon completion of the course, the students will be able to

1. Describe the usage of computers and why computers are essential components in business and society.
2. Utilize the Internet Web resources and evaluate on-line e-business system.
3. Solve common business problems using appropriate Information Technology applications and systems.
4. Identify the categories of programs, organize and work with files and folders.
5. Describe various types of networks standards and communication software.

SEMESTER – II

Subject Code: 21J21
Course Name: OBJECT ORIENTED PROGRAMMING WITH C++

Upon completion of the course, the students will be able to

1. Comprehend the features of C++ supporting object oriented programming.
2. Perceive the concept of operators, data types, constructors and looping statements.
3. Apprehend the concept of arrays, functions and string handling operations in C++.
4. Interpret how to apply the major object-oriented concepts to implement object oriented programs in C++, Encapsulation, Inheritance and Polymorphism.
5. Understand advanced features of C++ specifically Stream I/O, Templates and Operator Overloading.

Subject Code: 21J2P
Course Name: OBJECT ORIENTED PROGRAMMING WITH C++ LAB

Upon completion of the course, the students will be able to

1. Implement and test the concepts of Classes & Objects, friend Functions, Constructors and Destructors in program design of a few example exercises.
2. Design & implement a few forms of inheritance through a few exercises.
3. Test the performance of Polymorphism and Generic Programming through a few exercises.
4. To understand how C++ improves C with object-oriented features.
5. To grasp the concept of data abstraction and encapsulation.

Subject Code: 21AMJ2
Course Name: RESOURCE MANAGEMENT TECHNIQUES

Upon completion of the course, the students will be able to

1. To be familiar with the functions of Operations Research (OR).
2. Solve the Foundation mathematics and statistics.
3. Solve the Linear Programming (LP), LP and allocation of resources, Linearity requirement Maximization and Minimization problems.
4. Solve the graphical LP Minimization solution, formulating the Simplex model.
5. To apprehend the concept of Transportation problem and game theory.

Subject Code: 21SEJ2P
Course Name: LINUX LAB

Upon completion of the course, the students will be able to

1. Make out the basic commands of linux operating system and can write shell scripts
2. Create file systems and directories and operate them
3. Create processes background and fore ground etc..by fork() system calls
4. Recognize the concept of shared memory segments, pipes, message queues and can exercise interprocess communication
5. Implement shell scripts and sed commands.

Subject Code: 21NMJ2
Course Name: ANIMATION USING FLASH

Upon completion of the course, the students will be able to

1. Create animated graphics, add sound and interactivity.
2. To create vector graphics-based animation programs with full screen navigation interfaces.
3. To study the graphics illustration simple interactivity in antialiased, resizable file format
4. Gain in-depth knowledge on designing and developing websites.
5. Gain proficiency in techniques of 2D and 3D software's.

SEMESTER – III

Subject Code: 17J31

Course Name: DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

Upon completion of the course, the students will be able to

1. Demonstrate knowledge of binary number theory, Boolean algebra and binary codes.
2. Analyze and design systems using standard gates and minimization methods.
3. Examine and design systems composed of standard modules, such as Multiplexers, Flip-flops, Demultiplexers and decoders.
4. Analyze and design the Basic Computer Organization structure.
5. Study the concept of Central Processing Units, I/O, and Memory.

Subject Code: 17J32
Course Name: JAVA PROGRAMMING

Upon completion of the course, the students will be able to

1. Grasp the use of OOPs concepts.
2. Comprehend the use of abstractions, data types, operators and control statements.
3. Analyze the concept of strings, functions and Applets
4. Apprehend the use of Packages and Interface in Java.
5. To develop and understand Exception handling, Multithreaded applications.

Subject Code: 17J3P
Course Name: JAVA PROGRAMMING LAB

Upon completion of the course, the students will be able to

1. Implement Object Oriented programming concept using basic syntaxes of control structures, strings and function for developing skills of logic building activity.
2. Identify classes, objects, members of a class and the relationships among them for a finding the solution to specific problem.
3. Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
4. Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.
5. Identify and describe common abstract user interface components to design GUI in Java using Applet, AWT along with response to events.

Subject Code: 17AMJ3
Course Name: GRAPH THEORY

Upon completion of the course, the students will be able to

1. Solve problems using basic graph theory.
2. Identify induced sub graphs, cliques, and matchings in graphs.
3. Determine the concept of Hamiltonian graphs and Eulerian graphs.
4. Solve problems involving vertex and edge connectivity, planarity and crossing numbers
5. Analyze the problems using vertex and edge coloring.

Subject Code: 17SEJ3P
Course Name: MULTIMEDIA LAB

Upon completion of the course, the students will be able to

1. Design and apply two dimensional graphics and transformations.
2. Propose and apply three dimensional graphics and transformations.
3. Apply Illumination, color models and clipping techniques.
4. Understand the different types of Multimedia File Format**.**
5. Prepare and present a multimedia portfolio containing electronic media that demonstrates multimedia and problem-solving skills.

SEMESTER – IV

Subject Code: 17J41
Course Name: DATA STRUCTURES AND COMPUTER ALGORITHMS

Upon completion of the course, the students will be able to

1. Choose appropriate advanced data structures for given problem.
2. Analyze the concept of stacks, queues and linked list.
3. Select appropriate Binary trees and Binary search trees.
4. Apply the dynamic programming techniques and to apply the greedy programming technique to solve the problems.
5. Illustrate various types of sorting, searching and hashing techniques.

Subject Code: 17J4P
Course Name: DATA STRUCTURE AND COMPUTER ALGORITHMS LAB

Upon completion of the course, the students will be able to

1. Select appropriate data structures as applied to specified problem definition.
2. Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
3. Implement linear and Non-Linear data structures.
4. Apply appropriate sorting and searching technique for given problem.
5. Design an algorithm for binary tree and binary tree traversals.

Subject Code: 17J42
Course Name: RELATIONAL DATABASE MANAGEMENT

Upon completion of the course, the students will be able to

1. Investigate Database design methodology.
2. Acquire knowledge in fundamentals of Data Base Management System.
3. Analyze the difference between traditional file system and RDBMS.
4. Handle with different Data Base languages.
5. Draw various data models for Data Base and Write queries mathematically.

Subject Code: 17SEJ4P
Course Name: RDBMS LAB

Upon completion of the course, the students will be able to

1. Gain knowledge about SQL Fundamentals.
2. Create of database Packages, Perform Unary & Binary table operations.
3. Handle with different Data Base languages.
4. Create Table View, Log & Triggers.
5. Handle online Transactions.

Subject Code: 17AMJ4
Course Name: NUMERICAL METHODS

Upon completion of the course, the students will be able to

1. Apply Numerical analysis which has enormous application in the field of Science and some fields of Engineering.
2. Understand the concept of finite precision computation.
3. Familiar with numerical solutions of nonlinear equations in a single variable.
4. Analyze the concept of numerical integration and differentiation, numerical solution of ordinary differential equations.
5. Perceive with calculation and interpretation of errors in numerical method.

SEMESTER – V

Subject Code: 17J51
Course Name: OPERATING SYSTEM

Upon completion of the course, the students will be able to

1. Describe the concept of single processor and multiprocessor, system calls
2. Explain, contrast and compare different Structures for Operating Systems.
3. Grasp the term process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks.
4. Understand the concept of scheduling and synchronization.
5. Acquire knowledge in file system.

Subject Code: 17J52
Course Name: DATA COMMUNICATION AND COMPUTER NETWORKS

Upon completion of the course, the students will be able to

1. Define, use and implement Computer Networks and the basic components of a Network system.
2. Know and Apply pieces of hardware and software to make networks more efficient, faster, more secure, easier to use, able to transmit several simultaneous messages, and able to interconnect with other networks.
3. Differentiate the various types of network configurations and applying them to meet the changing and challenging networking needs of organizations.
4. Understand the layers of OSI and TCP and get knowledge about congestion control and network security.
5. Describe the different protocols, software, and network architectures.

Subject Code: 17J53
Course Name: DOT NET PROGRAMMING

Upon completion of the course, the students will be able to

1. Understand .NET Framework and describe some of the major enhancements to the new version of C#.
2. Learn to create applications using Microsoft Windows Forms.
3. Study the concept of application creation using ADO. NET.
4. Learn how to work with XML Documents.
5. Use Crystal Reports that may help in creating reports related to the project

Subject Code: 17J5P
Course Name: DOT NET PROGRAMMING LAB

Upon completion of the course, the students will be able to

1. Implement Visual Basic.Net classes, objectives, and class relationships.
2. Develop and write documented programs applying Object Oriented principles using Visual Basic.Net.
3. Create member functions and demonstrate the use of Visual Basic.Net syntax and exception handling.
4. Design, create and use a User Interface with forms, button boxes, scroll bars, labels, and graphics.
5. Utilize the details of structured programming techniques.

Subject Code: 17JE5A
Course Name: COMPUTER GRAPHICS

Upon completion of the course, the students will be able to

1. Understand the survey and various applications of computer graphics.
2. To study the concept CRT monitors, hard copy and I/O devices.
3. Facilitate the details of Line drawing algorithms.
4. Analyze the term line attributes , fill color patterns.
5. To illustrate the term transformation such as translation, rotation and scaling.

Subject Code: 17JE5B
Course Name: ENTERPRISE RESOURCE PLANNING

Upon completion of the course, the students will be able to

1. Understand ERP software package, software modules helps in integrating data and real time information.
2. Recognize planning and management of resources as per the requirements of company.
3. Identify how to control and manage the organizations at different locations.
4. Understand how to get Return on Investment (ROI) for an organization
5. Appreciate how to control different functions and enhance company efficiency

Subject Code: 17SEJ5P
Course Name: NETWORKING LAB

Upon completion of the course, the students will be able to

1. Comprehend fundamental underlying principles of computer networking
2. Troubleshoot wireless LANs and VLANs.
3. Apply mathematical foundations to solve computational problems in computer networking
4. Design and build a wireless LAN.
5. Compare routing algorithms, practice packet and file transmission between nodes.

SEMESTER – VI

Subject Code: 17J61

Course Name: SOFTWARE ENGINEERING

Upon completion of the course, the students will be able to

1. Select and implement different software development process models.
2. Extract and analyze software requirements specifications for different projects.
3. Develop some basic level of software architecture/design.
4. Apply standard coding practice.
5. Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

Subject Code: 17J62
Course Name: WEB TECHNOLOGY

Upon completion of the course, the students will be able to

1. To understand the concept of HTML 5 using links, tables and forms.
2. Analyze the concept of background colors, styles and positioning.
3. To study the terms in Java Script such as arrays and functions
4. To learn the concept of mysql database query for insertion, deletion and updation operations.
5. Able to know the concept of data types, arrays, strings and cookies in PHP.

Subject Code: 17J6P
Course Name: WEB TECHNOLOGY LAB

Upon completion of the course, the students will be able to

1. Write a program for creation of tables and forms using HTML 5.
2. To study the concept of changing background color and styles in CSS.
3. Facilitate the term arrays and function in Java Script.
4. Debug, test the mysql database query to perform insertion, deletion and updation operations.
5. Understand the various types of operators, data types, strings and cookies.

Subject Code: 17JE6A
Course Name: DATA MINING

Upon completion of the course, the students will be able to

1. Design a data mart or data warehouse for any organization
2. Extract knowledge using data mining techniques
3. Adapt to new data mining tools
4. Explore recent trends in data mining such as web mining, multimedia mining, text mining.
5. Implement data mining techniques like classification, clustering, association rule and decision tree etc on the real data set.

Subject Code: 17JE6B
Course Name: COMPILER DESIGN

Upon completion of the course, the students will be able to

1. Understand the requirement of compiler design.
2. Apply working skills in theory and application of finite state machines, recursive descent, production rules, parsing, and language semantics.
3. Understand about powerful compiler generation tools.
4. Apply the ideas, the techniques, and the knowledge acquired for the purpose of other software design.
5. Design the structures and support required for compiling advanced language features.

Subject Code: 17JPR6
Course Name: PROJECT

Upon completion of the course, the students will be able to

1. Learn critical thinking skills and inquiring skills through application-oriented project development in Computer Science and Information Technology in a team-work environment.
2. Learn literature survey skills.
3. Refine communications skills and public speaking skills through written and oral presentations.
4. Learn problem solving skills.
5. Learn proposal development skills to initiate an application-oriented project in the areas of Computer Science and Information Technology.

Subject Code: 17SEJ6P
Course Name: ANDROID LAB

Upon completion of the course, the students will be able to

1. Describe the basic components of an Android application.
2. Define the lifecycle methods of Android application components.
3. Describe the basics of event handling in Android.
4. Demonstrate and deploy various tools in Android application.
5. Illustrate the basics of graphics and multimedia support in Android.