Post Graduate Department of Computer Science

M.Sc. IT (Master of Science in Information and Technology)
(2022-23)

Program Outcome (PO)

This course focuses on practical experience as student can opt for career in the computer Programming /software development/web development .The course grooms the students for lucrative avenues in IT industry as Web Designer, web administrator, Software consultant, system analyst, Database administrator etc.

Program Specific Outcome (PSO-I)

Students will be able to understand the basic concepts of programming language along with the basic knowledge of discrete structure. In addition to that students have the complete knowledge of Programming Languages of computer system along with software and students will have complete knowledge of research methodology that will help them in betterment of their future.

Program Specific Outcome (PSO-II)

Students will be able to understand the basic concepts of operating system along with the memory management techniques through complete knowledge of architecture along with relational database management system that will help them to understand the real life applications by creating database entities. In addition to that students have the complete knowledge data mining techniques and electronic commerce and Python programming techniques.

MSIT- 101: INTRODUCTION TO INFORMATION TECHNOLOGY AND OFFICE AUTOMATION

Course Learning Outcomes: After completion of this course students will able to:
CO1: Explain the basic concepts of hardware & software, terminology and use of IT tools.
CO2: Explore new IT techniques in various applications.
CO3: Understand the concepts & elements of operating system.
CO4: Familiarize with various Office Automation tools.

MSIT- 102: PROGRAMMING USING 'C'

Course Learning Outcomes: After completion of this course students will able to:
CO1: Learn the implementation of simple 'C' program, data types, operators and Console I/O function.
CO2: Learn the Implementation of decision control statements, loop control statements and case control structures.
CO3: Understand the declaration and implementation of arrays, pointers, structure and functions.
CO4: Understand the file operations, Character I/O, String I/O, File pointers.

MSIT-103: WEB TECHNOLOGIES

Course Learning Outcomes: After completion of this course students will able to:
CO1: Develop a Dynamic Webpage by the use of HTML, DHTML, JavaScript and PHP.
CO2: Develop solution to complex problems using appropriate method, Technologies, Frameworks, Web Services and Content Management.
CO3: Implementing PHP in solving real world problems.
CO4: Demonstrate an Understanding of Database Connectivity.

MSIT-104: (i) DISCRETE MATHEMATICAL STRUCTURE

Course Learning Outcomes: After completion of this course, student will be able to
CO1: Use concepts and notations from discrete mathematics which are useful in studying and describing objects and problems in branches of computer science, such as computer algorithms, programming

languages, cryptography, automated theorem proving, and software development.
CO2: Use logical notation to define and understand about fundamental mathematical concepts such as sets, relations, functions, and integers.
CO3: Evaluate elementary mathematical arguments and capable of reasoning.
CO4: Apply graph theory models of data structures and state machines to solve problems of connectivity and constraint satisfaction.

MSIT-104: (ii) MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE

Course Learning Outcomes: After completion of this course students will able to

CO1: Familiarize with measures of central tendencies and measures of dispersion.
CO2: Understand the concept of Correlation.
CO3: Enabled to study appropriate numerical methods to find the roots of equations and learnt to solve system of equations using different methods.
CO4: Understand Interpolation and Extrapolation.

MSIT-105: SOFTWARE LAB I (PROGRAMMING USING 'C')

Course Learning Outcomes: After completion of this course students will able to:
CO1: Learn the implementation of simple 'C' program, data types , operators and Console I/O function.
CO2: Learn the Implementation of decision control statements, loop control statements and case control structures.
CO3: Understand the declaration and implementation of arrays, pointers, structure and functions.
CO4: Understand the file operations, Character I/O, String I/O, File pointers.

MSIT-106: SOFTWARE LAB II (WEB TECHNOLOGY)

Course Learning Outcomes: After completion of this course students will able to:
CO1: Develop a Dynamic Webpage by the use of HTML, DHTML, JavaScript and PHP.
CO2: Develop solution to complex problems using appropriate method, Technologies, Frameworks, b Services and Content Management.
CO3: Implementing PHP in solving real world problems.
CO4: Demonstrate an Understanding of Database Connectivity.

MSIT-107: WORKSHOP-I (REASONING & RESEARCH APTITUDE)

Course Learning Outcomes: After completion of this course students will able to:
CO1: Explore and apply key concepts in logical thinking to business problems.
CO2: Enable students to critically analyze material (information) to order to evaluate Evidence, construct reasoned arguments, and communicate inferences.
CO3: Reviewing literature to understand how others have approached or dealt with the Problem& developing research objectives.
CO4: Analyzing various data collection methods.

SEMESTER II

MSIT-201: SOFTWARE ENGINEERING

Course Learning Outcomes: After completion of this course students will be able to:
CO1: Handle the different projects in various phases of Life Cycle.
CO2: Comprehend the basics of software process in order to manage and deliver Competent product.
CO3: Formulate appropriate testing strategy for the given software system.
CO4: Demonstrate and use for Software interfacing the design and its principles.

MSIT-202: COMPUTER ORGANIZATION & ARCHITECTURE

Course Learning Outcomes: After completion of this course students will able to:
CO1: Design the various functional unit and components of computer system.
CO2: Demonstrate the concept of organization of computer system to design the various Devices.
CO3: Design the input/ output operations and to create networking among the various.

CO4: Identify and compare different methods for computer I/O mechanisms.

MSIT-203: RELATIONAL DATABASE MANAGEMENT SYSTEM
Course Learning Outcomes: After completion of this course students will able to:
CO1: Understand the architecture of DBMS, conceptual data, logical database design and physical database design.
CO2: Perform Database Analysis using E-R data model by identifying entities, attributes, Relationships etc.
CO3: Perform Relational Database Design process with Normalization.
CO4: Learn Database Implementation with SQL.

MSIT-204: (i) E-TECHNOLOGIES
Course Learning Outcomes: After completion of this course students will be able to:
CO1: Analyze the impact of E-commerce business models along with E-Commerce types and Application.
CO2: Identity the process that should be followed in building the E-Commerce Models along with various legal, privacy and security issues related to E-Commerce.
CO3: Explaining the Role of Software Agents in E-Commerce.
CO4: Determine the data warehousing & Data Mining Process & Techniques associated with it.

MSIT-204: (ii) DIGITAL MARKETING
Course Learning Outcomes: After completion of this course students will be able to:
CO1. Analyze the confluence of marketing, operations, and human resources in real-time delivery.
CO2. Explain the role and importance of digital marketing in a rapidly changing business landscape
CO3. Discuss the key elements of a digital marketing strategy.
CO4. Demonstrate advanced practical skills in common digital marketing tools such as SEO, SEM, Social media and Blogs.

MSIT- 205: PYTHON PROGRAMMING
Course Learning Outcome: After completion of this course students will be able to:
CO1: To understand the usefulness of python programming and Its Paradigm.
CO2: To learn how to design and program Python Applications.
CO3: To learn and understand Python Looping, Control Statements, String Manipulations and File Handling.
CO4: Make Database Connectivity in Python Programming Language.

MSIT-206: SOFTWARE LAB-III
Course Learning Outcomes: After completion of this course students will able to:
CO1: To understand the usefulness of python programming and Its Paradigm.
CO2: To learn how to design and program Python Applications.
CO3: To learn and understand Python Looping, Control Statements, String Manipulations and File Handling.
CO4: Make Database Connectivity in Python Programming Language

MSIT-207 SOFTWARE LAB IV (SQL)
Course Learning Outcomes: After completion of this course students will able to:
CO1: To explore, organize, maintain and retrieve the database effectively and efficiently using MySQL.
CO2: To apply the knowledge of computing and mathematics for designing the various applications.
CO3: Design, implement and evaluate computer programs to meet the desired need of databases.
CO4: Use and apply the current techniques, concepts and practices in the core information technologies for the design of need based Softwares.

PGDCA (2022-23)

PO - Post Graduate Diploma in Computer Applications (PGDCA) is designed for graduate students who are interested in computer applications. This course has been made for students who want to learn computer applications in different fields like banking, insurance and accounting. This program allows students to seek professional knowledge in computer applications.

PSO- I

The curriculum of this programme ensures that students gain the basic knowledge of computer Fundamentals, basic programming skills and windows operating system.

PSO- II

The curriculum of this programme ensures that students gain the basic knowledge of Database management, python programming and web technology.

Semester-I

PGDCA 101: Information Technology

Course Learning Outcomes: After completion of this course students will able to:
CO1: Understand the basic concepts, terminology of IT and familiar with the use of IT tools.
CO2: Explore new IT application areas and to identify the issues related to Security.
CO3: Understand the working knowledge of hardware and software of computer.
CO4: Familiarize with the concept of E-commerce and E-Payment Systems.

PGDCA 102: COMPUTER PROGRAMMING USING C

Course Learning Outcomes: After completion of this course students will able to:
CO1: Develop efficient algorithms for solving a problem.
CO2: Understand the basic terminology used in computer programming, Writing, Compiling and Debugging involving decision structures, loops and functions, arrays, strings and pointers.
CO3: Switch over to any other language in future.
CO4: Develop confidence for self-education and ability for life-long learning needed for Language.

PGDCA 103: WINDOWS OPERATING SYSTEM

Course Learning Outcomes: After completion of this course students will able to:
CO1: Describe different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.
CO2: Develop deadlock handling algorithms and learn Memory management.
CO3: Implement various algorithms required for management, scheduling, allocation and communication used in operating system.
CO4: Describe and analyze the memory management, storage management and its policies.

PGDCA -104: SOFTWARE LAB-I (COMPUTER PROGRAMMING USING C)

Course Learning Outcomes: After completion of this course students will able to:
CO1: Develop efficient algorithms for solving a problem
CO2: Understand the basic terminology used in computer programming.
CO3: Develop programs based on C Language.
CO4: Develop basic applications based on C Language.

PGDCA -105: SOFTWARE LAB-II (OFFICE AUTOMATION)

Course Learning Outcomes: After completion of this course students will able to:
CO1: Understand the basic concepts, terminology of IT and the use of IT Tools.
CO2: Explore the Word Processing techniques in various applications.

CO3: Explore the presentation commands to be used practically and professionally.
CO4: Practically understand the concepts of spreadsheets and various other tools ofOffice.

Semester-II

PGDCA-201: DATABASE MANAGEMENT SYSTEM

Course Learning Outcomes: After completion of this course students will able to:
CO1: Explore, organize, maintain and retrieve the database effectively and efficiently.
CO2: Apply the knowledge of computing and mathematics for the appropriate discipline.
CO3: Design, implement and evaluate computer based system process component or program to meet the desired need.
CO4: Ability to use and apply MS Access tool.

PGDCA 202: PROGRAMMING WITH PYTHON

Course Learning Outcomes: After completion of this course students will able to:
CO1: Defining Python strength, weakness and installing Python
CO2: Explore and create the general purpose programming language to create the different program with the use of syntax, variables and statements.
CO3: Defining modules, import statement and various functions.
CO4: Exploring the process of file handling in Python.

PGDCA 203: WEB TECHNOLOGY

Course Learning Outcomes: After completion of this course students will be able to:
CO1: Develop a dynamic webpage by the use of HTML, DHTML, Java Script and CSS.
CO2: Develop web based applications using suitable client side and server side web technology.
CO3: Explore the various ideas for database access and data driven applications.
CO4: Develop the skills in analyzing the usability of the websites and also helps to plan and conduct the user research related to web usability.

PGDCA-204: SOFTWARE LAB – III

Course Learning Outcomes: After completion of this course students will able to:
CO1: Defining Python strength, weakness and installing Python
CO2: Explore and create the general purpose programming language to create the different program with the use of syntax, variables and statements.
CO3: Defining modules, import statement and various functions.
CO4: Exploring the process of file handling in Python.

PGDCA 205: SOFTWARE LAB-IV

Course Learning Outcomes: After completion of this course students will be able to:
CO1: Understand HTML concepts and structure of HTML document.
CO2: Understanding Layouts, controls of HTML, CSS, JavaScript and AJAX.
CO3: Implementation of queries, tables and integrity constraints in MS-Access.
CO4: Working on database reports and macros.

BCA

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1: To provide the students with core competencies in the basics of fundamentals of computer applications by and managerial scientific, mathematical and managerial skills.
PEO2: To inculcate high professionalism among the students by providing the technical and soft skills with ethical standards
PEO3: To train the graduates in diversified and applied areas with analysis, design and synthesis of the data to create the novel products.
PEO4: To encourage the students for higher studies research activities and entrepreneur skills.

PROGRAMME OUTCOMES (PO) UG

PO1: Demonstrate the competencies in the latest trends of information technology computing specialization and it will enhance the employability.
PO2: Design the efficient algorithms and solution for complex computational and real world problems.
PO3: Create, select and apply the appropriate technologies and various tools of Programming languages.
PO4: Ability to effectively communicate with the technical community and the society to understand and write effective reports, design the documentation and make the effective presentation.
PO5: Ability to apply the knowledge of mathematics, computer science and management to pursue in higher education and can become an entrepreneur.

Program Specific Objectives (PSO)

PSO1: Students will be able to know the various issues of computer Hardware and software, latest trends in technology development and apply the various tools of programming languages.
PSO2: Students will use their understanding and skills for the development of computer in the area related to algorithm, database, web designing, and operating system for the efficient design of computer based system.
PSO3: Explore and built up the comprehensive skills in web designing, multimedia and animation, E-technology, cloud computing and various issues of data analytics

BCA 101: FUNDAMENTALS OF IT

CO1: Understand the various number system techniques and its conversion.
CO2: Understand the basic concepts of hardware & software, terminology and use of IT tools.
CO3: Understand the concept of word processor, presentation and spreadsheet.
CO4: Understand the concept of Operating system and various Office Automation tools.

BCA 101 (P): SOFTWARE LAB-I

CO1: Prepare documents, spreadsheets, make small presentations with audio, video and graphs.
CO2: Create, edit, save and print documents with list tables, header, footer, graphic, spellchecker, mail merge and grammar checker.
CO3: Apply different animations and transition effects to make presentation more effective.
CO4: Attain the knowledge about spreadsheet with formula, functions and macros etc.

BCA 102: COMPUTER PROGRAMMING

CO1: Understand the basic terminology used in computer programming.
CO2: Describe various Data types, Operators, Control structures, Function in C.
CO3: Understand the concepts of different user-defined data types such as Arrays, Strings, Structures, and Unions etc.
CO4: Learn Pointers and File handling techniques.

BCA 102 (P): SOFTWARE LAB-II

CO1: Prepare documents, spreadsheets, make small presentations with audio, video, graphs, charts and Animations.

CO2: Create, edit, save and print documents with list tables, header, footer, graphic, spellchecker, mail Merge and grammar checker.

CO3: Describe basics, various Data types, Operators, Control structures, Function in C.

CO4: Understand the concepts of different user-defined data types such as Arrays, Structures, Pointers and File Handling etc

BCA 201: DIGITAL ELECTRONICS

CO1: Become familiar with different types of codes and number systems used in digital communication and computer system.

CO2: Employ the codes and analyze different electronic circuits using logical tools and Mathematical techniques.

CO3: Learn different types of digital circuits for operation within economics, efficiency, user Friendly and environmental constraints.

CO4: Apply the knowledge of analog and digital circuits in real world problems with different Circumstances.

BCA 202: DATA STRUCTURES

CO1: Access the choices of data structure and how it impact the performance of the programs.

CO2: Describe the basic concept and implementation of various Data Structures.

CO3: Solve problems based upon different data structures to develop the software.

CO4: Design new algorithms or modify existing ones for new applications and able to analyze the Space and time efficiency

BCA 202 (P): SOFTWARE LAB-III

CO1: Access the choices of data structure and how it impact the performance of the programs.

CO2: Learn the basic concepts and implementation of various Data Structures.

CO3: Solve problems based upon different data structures to develop the software.

CO4: Design new algorithms and programs for developing new software based applications.

BCA 301: OBJECT ORIENTED PROGRAMMING USING C++

CO1: Understand the real world problems and develop their solutions.

CO2: Demonstrate and understanding of algorithm in problem solving process.

CO3: Use the incremental program development to create, test and debug the solution of the problems.

CO4: Foundation for switching to the higher computer languages.

BCA 301(P): SOFTWARE LAB IV (BASED ON PAPER BCA (301)

CO1: Understand the real world problems and develop their solutions.

CO2: Demonstrate and understanding of algorithm in problem solving process.

CO3: Use the incremental program development to create, test and debug the solution of the problems.

CO4: Foundation for switching to the higher computer languages.

BCA 302: DATABASE MANAGEMENT SYSTEM

CO1: To explore, organize, maintain and retrieve the database effectively and efficiently.

CO2: To apply the knowledge of computing and mathematics for the appropriate discipline.

CO3: Design, implement and evaluate computer based system process component or program to

meet the desired need.
CO4: Ability to use and apply the current technique, concept and practices in the core information technologies.

BCA 302(P): SOFTWARE LAB-V (BASED ON BCA 302)
CO1: To explore, organize, maintain and retrieve the database effectively and efficiently using MySQL.
CO2: To apply the knowledge of computing and mathematics for designing the various applications.
CO3: Design, implement and evaluate computer programs to meet the desired need of databases.
CO4: Use and apply the current techniques, concepts and practices in the core information technologies for the design of need based softwares.

BCA 303: COMPUTER SYSTEM ARCHITECTURE
CO1: Design the various functional unit and components of computer system.
CO2: Demonstrate the concept of organization of computer system to design the various devices
CO3: Design the input/ output operations and to create networking among the various.
CO4.To develop the virtual computers to help the artificial Intelligence

BCA 306(ii): COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS
CO1: Familiarize with measures of central tendencies and measures of dispersion.
CO2: Understand the concept of Correlation and regression.
CO3: Enabled to study appropriate numerical methods to find the roots of equations and learnt to solve system of equations using different methods.
CO4: Understand floating point representation and binary representation of numbers.

BCA 401: Python Programming
CO1: It is backend of website/ application which includes sending data from servers, processing data and communicate with the database.
CO2: To explore and create the general purpose programming language to create the different program.
CO3: Used in machine learning to build websites and software testing.
CO4: It has become a staple in data science and allows using the language to compute complex statistical calculation and create the data visualization.

BCA 401(P): SOFTWARE LAB-VI (Based on BCA 401)
CO1: As a backend of website/ application, it sends data from servers, processing data and communicate with the database.
CO2: To explore and create the general purpose programming language to create the different programs.
CO3: Used in machine learning to build websites and software testing.
CO4: Used in data science to compute complex statistical calculations and create the data visualization.

BCA 402: Operating System
CO1: Understands the different services provided by the computer systems at different level of programming.
CO2: Explore the real life application of programming in every field
CO3: Helps to design the algorithm for the effective communication with Hardware and software.
CO4: To Manage and schedule the hardware to do the various tasks of software.

BCA 402(P): Software Lab VII (Based on BCA 402)
CO1: Understands the different services provided by the computer systems at different level of programming.
CO2: Explore the real life application of programming in every field
CO3: Helps to design the algorithm for the effective communication with Hardware and software.
CO4: To Manage and schedule the hardware to do the various tasks of software by using Linux.

BCA 403: Computer Networks
CO1: Understand the latest trends of IT for the communication.
CO2: Familiar with the basics of Networking and how they can be used to assist in designing to meet the real life problem.
CO3: To explore the skills for developing the websites, documentation, reports and presentation.
CO4: To help the society for better interaction with business, academics and computation.

BCA 406 (i): ANIMATION TECHNOLOGY
CO1: Explore the basic concept and understand the various latest tools of IT in 3-D production.
CO2: Improve the skills and the knowledge for designing.
CO3: Offers to present the idea and talents by showcasing the creativity.
CO4: Effectively use the technical conceptual and critical ability to develop the various technological tools

BCA 406 (i) (P): Software Lab VIII (Based On BCA 406(i))
CO1: Explore the basic concept and understand the various latest tools of IT in 3-D production.
CO2: Improve the skills and the knowledge for designing.
CO3: Offers to present the idea and talents by showcasing the creativity.
CO4:Effectively use the technical conceptual and critical ability to develop the various technological tools.

BCA406 (ii): CONTENT MANAGEMENT SYSTEM
CO1: To organizes and presents the web contents by creative and deploying the websites.
CO2: Extends the functionality of content management system with web programming.
CO3: To develop the various sites using fronted and backend programming while considering the issues of interface with accessibility and web standards.
CO4: To review the latest cms tools and technologies in terms of client requirements

BCA 406 (ii): SOFTWARE LAB VIII (BASED ON BCA 406(ii))
CO1: To organizes and presents the web contents by creative and deploying the websites.
CO2: Extends the functionality of content management system with web programming.
CO3: To develop the various sites using fronted and backend programming while considering the issues of interface with accessibility and web standards.
CO4: To review the latest cms tools and technologies in terms of client requirements**.**
BCA 501: JAVA PROGRAMMING
CO1: Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.
CO2: Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem.
CO3: Demonstrate how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.

CO4: Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.

BCA 501 (P): SOFTWARE LAB VIII (BASED ON PAPER BCA 501)
CO1: Implement Object Oriented programming concept of control Structures, strings and function for developing the logic building activity using Java.
CO2: Identify classes, objects, members of a class and the relationships among them needed for finding the solution of problems by designing the programs.
CO3: Implement programs related to reusability using inheritance, interfaces and packages.
CO4: Design and implement programs of exception handling mechanisms and multithreading for efficient application development.

BCA 502: WEB TECHNOLOGY-I
CO1: Understand the major areas and the challenges of latest technologies of internet.
CO2: Enhance the interface between the various languages.
CO3: Explore the various ideas for database access and data driven applications.
CO4: Develop the skills in analyzing the usability of the websites.

BCA 502 (P): SOFTWARE LAB-IX (BASED ON PAPER BCA 502)
CO1: Understand basic elements related to the latest technologies of internet.
CO2: Enhance the interface between various languages for effective Website development.
CO3: Explore and implement the various ideas for database access and data driven applications.
CO4: Develop the skills in analyzing the usability of the websites.

BCA 503: SOFTWARE ENGINEERING
CO1: Analyse software development process models, including spiral model and traditional models like waterfall.
CO2: Apply software life cycle through requirements gathering, choice of process model and design model for developing projects.
CO3: Acquire knowledge about software estimation techniques and configuration management for creating project baselines.
CO4: Perform various activities like implementing, testing and maintenance.

BCA 506(A): MANAGEMENT INFORMATION SYSTEM
CO1: Apply the sound managerial concepts and principles in the development and operations of information system.
CO2: Describe and managing the digital firm evolution.
CO3: Analyze and synthesize business information and systems to facilitate evaluation of strategic alternatives.
CO4: Demonstrate the Applications of Information System in Functional Areas (Marketing and Financial).

BCA506 (B): DIGITAL MARKETING
CO1. Analyze the confluence of marketing, operations, and human resources in real-time delivery.
CO2: Explain the role and importance of digital marketing in a rapidly changing business landscape
CO3: Discuss the key elements of a digital marketing strategy
CO4: Demonstrate advanced practical skills in common digital marketing tools such as SEO, SEM, and Social media and Blogs.

BCA 601: WEB TECHNOLOGY-II

CO1: To design and develop the dynamic database driven web pages.
CO2: Helps to make the static website and turn it into the dynamic website run from a data base using PHP and MYSQL.
CO3: Learn different ways of connecting to MYSQL through PHP to create, retrieve and save the database.
CO4: Students will be able to design professional websites.

BCA 601 (P): SOFTWARE LAB-X (BASED ON PAPER BCA 601)
CO1: To design and develop the dynamic database driven web pages.
CO2: Helps to make the static website and dynamic website using PHP and MYSQL.
CO3: Implement different ways of connecting to MYSQL through PHP for creating, retrieving, saving and connecting the database.
CO4: Students will be able to design professional websites.

BCA 602: E-TECHNOLOGIES
CO1: Analyze the impact of E-commerce business models and latest technologies of IT.
CO2: Identity the process that should be followed in building the E-Commerce.
CO3: To manipulate graphics and the sound information, privacy and control of Electronic media.
CO4: Different E-commerce trading relationships between the Entrepreneur and the consumers.

BCA 603: MINOR PROJECT
CO1: Identify the requirements for the real world problems and to understand the programming language concepts and basics of Software Development Life Cycle model for the implementation of the project.
CO2: Conduct a survey of several available literatures in the preferred field of study to enhance software/hardware skills.
CO3: Build the project by Planning, analyzing, coding, testing, debugging and implement it at the premises of end user.
CO4: Report and present the findings of the study conducted in the preferred domain by working in the teams.

BCA 604: SYSTEM SOFTWARE
CO1: Identify and illustrate the types and features of system software and application software.
CO2: Describe the importance of Language Processors.
CO3: Demonstrate the use of Compilation Process which helps in programming languages.
CO4: Identify and understand the working of key components of computer system, hardware, software and firmware.

BCA 607(A): CLOUD COMPUTING
CO1: Apply the fundamental concepts in cloud infrastructure to understand the single and multiple data centers.
CO2: Outline the role of hardware and software for third party.
CO3: Analyse the various cloud computing techniques to solve the problems on the cloud.
CO4: Meet the evolution, its applicability, benefits as well as current and future challenge.

BCA 607(B): ARTIFICIAL INTELLIGENCE
CO1: Understand the significance and domain of Artificial Intelligence and knowledge representation.
CO2: Analyze various search techniques for real life problems.
CO3: Acquire the knowledge of real world knowledge representation.
CO4: Design expert system.