BACHELOR OF COMPUTER APPLICATION (BCA)

PROGRAMS OUTCOME (PO'S)

PO 1: Critical Thinking: Engage in thoughtful actions by recognizing the assumptions shaping our thoughts and decisions. Evaluate the accuracy and validity of these assumptions and consider diverse perspectives when analyzing ideas and decisions, whether intellectual, organizational, or personal.

PO 2: Effective Communication: Express ideas clearly through spoken, written, and electronic means in both English and one Indian language. Comprehend the world by establishing connections between people, ideas, books, media, and technology.

PO 3: Social Interaction: Facilitate discussions, mediate conflicts, and contribute to reaching conclusions in group settings by eliciting diverse viewpoints and promoting collaboration.

PO 4: Effective Citizenship: Demonstrate empathetic social concern and contribute to equitable national development. Act with awareness and involvement in civic life through volunteering, exhibiting informed social engagement.

PO 5: Ethics: Acknowledge diverse value systems, including one's own, while understanding the moral dimensions of decisions. Take responsibility for ethical choices made and their consequences.

PO 6: Environment and Sustainability: Grasp the challenges related to environmental contexts and sustainable development, promoting an understanding of ecological issues and responsible practices.

PO 7: Self-directed and Life-long Learning: Cultivate the ability to engage in independent and life-long learning, adapting to socio-technological changes and pursuing knowledge beyond formal education.

PO 8: Innovation and Entrepreneurship: Recognize timely opportunities and employ innovative approaches to create value and wealth. Contribute to individual and societal betterment through entrepreneurial initiatives.

Program Specific Outcomes – BCA

PSO 1: Understanding Computing Systems: Proficiency in comprehending the fundamental principles and operations of computer systems.

PSO 2: Project Development Proficiency: Competency in understanding the architecture and methodologies involved in the development of software systems.

PSO 3: Software Development Proficiency: Acquired expertise and practical competence in utilizing various programming languages and open-source platforms for software development.

PSO 4: Mathematical Proficiency: Capability to apply mathematical methodologies to solve computational tasks, model real-world problems using suitable data structures, and employ appropriate algorithms.

COURSE OUTCOMES (CO'S):

Semester I

BUSINESS AND TECHNICAL COMMUNICAT ION SKILLS (Subject Code: 1101)

- CO1 Enable the students' ability to write error free while making an optimum use of correct Business Vocabulary & Grammar.
- CO2 Will enable the students to distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.
- CO3 They will be able to draft effective business correspondence with brevity and clarity.
- CO4 Enhance critical thinking by designing and developing clean and lucid writing skills.
- CO5 Enhance verbal and non-verbal communication ability through presentations.

PROBLEM SOLVING USING C (Subject Code: 1102)

Students will be able

- CO1 To develop logic which will help them to create programs in C.
- CO2 Demonstrate an understanding of computer programming language concepts.
- CO3 Design and develop computer programs, analyze, and interpret the concept of pointers,
- CO4 Declarations, initialization, operations on pointers and their usage.
- CO5 By learning the basic programming constructs they can easily switch over to any other language in future.
- CO6 Develop applications

PROBLEM SOLVING USING C LAB (Subject Code: 1201)

The student would be able

- CO1 Read, understand and trace the execution of programs written in C language.
- CO2 Write the C code for a given algorithm.
- CO3 Implement Programs with pointers and arrays, perform pointer arithmetic, and use the preprocessor.
- CO4 Write programs that perform operations using derived data types.
- CO5 Implement simple file operations

WEB PROGRAMMING (Subject Code: 1103)

- CO1 To design web pages using HTML5 language, applying stylish information to web pages using CSS.
- CO2 To develop interactive web pages using JavaScript.
- CO3 To develop dynamic pages on the web server using PHP language and implement Database Driven Websites.
- CO4 Understand the various platforms, devices, display resolutions, viewports, and browsers that render websites
- CO5 To develop and implement client-side and server-side scripting language programs

WEB PROGRAMMING LAB (Subject Code: 1202)

- CO1 To design web pages using HTML5 language, applying stylish information to web pages using CSS.
- CO2 To develop interactive web pages using JavaScript.
- CO3 To develop dynamic pages on the web server using PHP language and implement Database Driven Websites.

CO4 To develop and implement client-side and server-side scripting language programs

COMPUTER FUNDAMENTALS AND OPERATING SYSTEM (Subject Code: 1104)

CO1 Learners will be able to describe basic concepts, mechanisms used by operating systems.

CO2 Learners will be able to compare process scheduling algorithms, apply synchronization primitives and evaluate deadlock conditions and to analyze virtual memory management algorithms.

OFFICE AUTOMATION TOOLS (Subject Code: 1105)

CO1 On completion, the students would be able to make word documents, spreadsheets, power point presentations using the Microsoft suite of office tools.

Semester II

ENVIRONMENTAL SCIENCE AND RTI (Subject Code: 2101)

Students will learn to

CO1 Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving.

CO2 Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.

CO3 Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.

CO4 Understand the practical applicability of the Right to Information Act, 2005

PROGRAMMING METHODOLOGY AND C++ (Subject Code: 2102)

Students will be able to

CO1 Describe the object-oriented programming approach in connection with C++

CO2 Apply the concepts of object oriented programming

CO3 Analyze a problem and construct a C++ program that solves it

CO4 Discover errors in a C++ program and describe how to fix them

CO5 Illustrate the process of data file manipulations using C++

PROGRAMMING METHODOLOGY AND C++ LAB (Subject Code: 2201)

Students will be able to:

CO1 Create simple programs using classes and objects in C++.

CO2 Implement Object Oriented Programming Concepts in C++.

CO3 Develop applications using stream I/O and file I/O.

CO4 Implement simple graphical user interfaces.

CO5 Implement Object Oriented Programs using templates and exceptional handling

DATABASE MANAGEMENT SYSTEM (Subject Code: 2103)

CO1 Able to find and understand the Concept Of database approach.

CO2 Able to find and understand database architecture and data modeling, data Normalization.

CO3 Design and draw ER and EER diagram for real life problem.

CO4 Able to find and understand the commands of SQL.

CO5 Able to understand the concept of transaction, concurrency and recovery.

DATABASE MANAGEMENT SYSTEM LAB (Subject Code: 2202)

CO1 Design and implement a database schema for a given problem-domain

CO2 Normalize a database

CO3 Populate and query a database using SQL DML/DDL commands.

CO4 Programming PL/SQL including stored procedures, stored functions, cursors, packages.

MATHEMATICS I (Subject Code: 2104)

CO1 Have a better understanding of sets, relations and functions
CO2 Be able to understand Permutation and Combinations, Mathematical induction, Binomial Theorem and Graph Theory.
CO3 Apply logic and construct simple mathematical proofs and solve problems.
CO4 Demonstrate different traversal methods for graph

PRINCIPLES & PRACTICES OF ACCOUNTS (Subject Code: 2105)

CO1 Students will be able to learn fundamental accounting concepts, Conventions & terminologies.
CO2 Students will be able to describe the importance, functions & objectives of books of entry, subsidiary books, bank reconciliation statement and Final accounts.
CO3 Students will be able to prepare books of entry, subsidiary books, bank reconciliation statement and
CO4 Final accounts using double entry book keeping.

Semester III

DATA STRUCTURES (Subject Code: 3101)

CO1 Understand basic data structures such as array, linked list, stack, queue, binary tree and graph along with algorithms.
CO2 Ability to analyze algorithm and algorithm correctness.
CO3 Apply searching and sorting techniques.

DATA STRUCTURES- LAB (Subject Code: 3201)

CO1 Select appropriate data structures as applied to specified problem definition.
CO2 Implement operations like traversing, insertion, deletion, searching etc. on data structures.
CO3 Students will be able to implement linear and non - linear data structures.
CO4 Implement appropriate sorting and searching techniques for given problems.

JAVA PROGRAMMING (Subject Code: 3102)

CO1 To teach Object-Oriented programming concepts, techniques, and applications using the Java programming language.
CO2 Problem solving skills – to analyze real life problem, find and develop algorithmic steps to solve it and then implement these steps in JAVA.
CO3 Experience with developing and debugging software in Java.
CO4 To develop real life projects using database connectivity with JDBC.

JAVA PROGRAMMING – LAB (Subject Code: 3202)

CO1 Basic knowledge of programming in JAVA.
CO2 Experience with developing and debugging software in Java.
CO3 Implementation of AWT.
CO4 Able to develop real life projects using database connectivity with JDBC.

MATHEMATICS II (Subject Code: 3103)

CO1 Apply numerical methods to find solutions of algebraic equations using different methods viz.Bisection method, Regula - Falsi, Newton Raphson’s, Ramanujan’s method, Matrix Inversion and Gauss Elimination
CO2 Apply Least squares Curve fitting procedures.

CO3 Derive numerical methods for various mathematical operations and tasks such as interpolation, differentiation, integration, the solution of linear and nonlinear equations and solution of differential equations.

COMPUTER ORGANISATION AND ARCHITECTURE (Subject Code: 3104)

CO1 Understand the architecture and functionality of central processing unit.
CO2 Analyze some of the design issues in terms of speed, technology, cost, performance.
CO3 Learn the concepts of parallel processing, pipelining and inter-processor communication.
CO4 Exemplify the I/O and memory organization.

Semester IV

PYTHON PROGRAMMING (Subject Code: 4101)

CO1 Able to apply the principles of python programming.
CO2 Write clear and effective python code.
CO3 Create applications using python programming.
CO4 Implementing database using SQLite.
CO5 Access database using python programming.
CO6 Develop web applications using python programming.
CO7 Develop and use Web Services using python.

PYTHON PROGRAMMING – LAB (Subject Code: 4201)

CO1 Will be able to interpret the fundamental Python syntax use Python control flow statements.
CO2 Enable the handling of strings and functions.
CO3 Will be able to create and run Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.

INTRODUCTION TO MICROPROCESSORS (Subject Code: 4102)

CO1 Understand the architecture and addressing modes of 8085 microprocessor and memory organization and its Interfacing.
CO2 Understand various types of instructions and Instruction Cycled with proper timing diagrams.
CO3 Develop various assembly language programs by using different types if instructions and understand PPL interfacing.
CO4 Understand 8259 interrupt controller IC with its internal organization and single and cascade operation.
CO5 To understand 8086/8088 microprocessor, architecture, instruction set, addressing modes, simple programs, memory organization and interfacing.

INTRODUCTION TO MICROPROCESSORS – LAB (Subject Code: 4202)

CO1 The student will be familiar with the architecture and Instruction set of Intel 8085 microprocessor
CO2 Will be able to implement assembly level programs

COMPUTER NETWORKS (Subject Code: 4103)

CO1 Distinguish between analog and digital signals and understand their characteristics
CO2 Understand the basic concepts of data communications.
CO3 Understand the purpose of network layered models, network communication using the layered concept, and able to compare and contrast Open System Interconnect (OSI) and the Internet Model.

CO4 Understand basic computer network technology.
CO5 Identify the different types of network topologies and protocols.

SOFTWARE ENGINEERING (Subject Code: 4104)

CO1 Provide the ability to select and apply the knowledge of defined engineering technology activities.
CO2 Able to describe key activities in software development and the role of modeling.
CO3 Able to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
CO4 Able to explain key concepts in software development such as change management, testing and quality.

Semester V

MOBILE APPLICATION (Subject Code: 5101)

CO1 Recognizes mobile development environments...
CO2 Write clear and effective Android code.
CO3 Create Native & Hybrid Mobile applications using Android App Development
CO4 Implementing database using SQLite & Firebase Real-time Database.
CO5 Be exposed to technology and business trends impacting mobile application
CO6 Be competent with designing and developing mobile applications using one application development framework.

MOBILE (ANDROID) APPLICATION LAB (Subject Code: 5201)

CO1 Build and deploy his/ her Android application.
CO2 The candidates get a better understanding of the UI - components, layouts, event handling, and screen orientation.
CO3 Students also develop a working knowledge of the custom UI elements and positioning.
CO4 The candidates may also have an in-depth understanding of broadcast receivers and services.

ARTIFICIAL INTELLIGENCE (Subject Code: 5102)

CO1 Students will be able to demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
CO2 Students will be able to understand the fundamentals of various applications of AI techniques in intelligent agents, expert systems models.

CYBER SECURITY (Subject Code: 5103)

The student will

CO1 Understand the basic security principals
CO2 Understand the concepts of data confidentiality security concern and its solution through cryptography
CO3 Be able to verify identity through various authentication mechanisms
CO4 Learn about Safe guarding the network at the network layer
CO5 Learn about attacks on the networks and security related services

MULTIMEDIA AND APPLICATION (Subject Code: 5104)

CO1 Learner will Developed understanding of technical aspect of Multimedia Systems.
CO2 Learner will understand various file formats for images, video, text media, colour models and software tools.

CO3 Learner will develop various Multimedia Systems applicable in real time with action script.
CO4 Learner will design interactive multimedia software program multimedia data and be able to design and implement media applications.
CO5 Learner will understand different graphics algorithm, Display devices, Video signal formats and TV Broad casting system.

Elective

MANAGEMENT INFORMATION SYSTEM (Subject Code: 5105)

CO1 Enable Learners to describe the role of information technology and information systems in business and analyze how information technology impacts a firm.
CO2 It is help learners to interpret how to use information technology to solve business problems.
CO3 Analyze the relationship between information systems and organizations.
CO4 Describe how managers make decisions in organizations.
CO5 Evaluate the role of information systems in supporting various levels of business strategy.

SEARCH ENGINE OPTIMIZATION (Subject Code: 5105)

CO1 To remember and learn the practical aspects of Search Engine Optimization.
CO2 To understand and learn how to promote sites.
CO3 To Apply and differentiate the concept of back links or inbound links.
CO4 To Create and develop the technical skills related to digital marketing activities.

DATA ANALYSIS AND VISUALIZATION (Subject Code: 5105)

CO1 Learner will be able to present data with visual representations for your target audience, task, and data.
CO2 Learner will be able to Experiment with and compare different visualization tools;
CO3 Learner will be able to Create multiple versions of digital visualizations using various software packages and also to identify appropriate data visualization techniques imposed by the data;
CO4 Learner will be able to apply appropriate design principles in the creation of presentations and visualizations and also to analyze, critique, and revise data visualizations

Semester VI

INTELLECTUAL PROPERTY RIGHTS, PATENTS AND CYBER LAWS (Sub Code: 6101)

CO1 Students will learn how to protect their creative work using Intellectual Property Rights.
CO2 Identify the use of Intellectual Property.
CO3 An ability to use Intellectual property to protect their work.
CO4 Understand the registration process of Copyright, Patent and Trademark.

DATA WAREHOUSING AND DATA MINING (Subject Code: 6102)

CO1 Understand the functionality of the various data mining and data warehousing component
CO2 Appreciate the strengths and limitations of various data mining and data warehousing models
CO3 Explain the analyzing techniques of various data
CO4 Describe different methodologies used in data mining and data ware housing.

CO5 Compare different approaches of data ware housing and data mining with various technologies.

INTERNET OF THINGS (IOT) (Subject Code: 6103)

CO1 Enable learners to understand System on Chip Architectures.
CO2 Enable to learn Arduino Open Source Platform with hardware and installation.
CO3 To develop physical interfaces and electronics of Raspberry Pi and program them using hand- on training.

MACHINE LEARNING (Subject Code: 6104)

CO1 Gain knowledge about basic concepts of Machine Learning
CO2 Identify machine learning techniques suitable for a given problem
CO3 Solve the problems using various machine learning techniques
CO4 Apply Dimensionality reduction techniques.
CO5 Design application using machine learning techniques

BLOCKCHAIN TECHNOLOGY (Subject Code: 6104)

CO1 Explain cryptographic building blocks and reason about their security.
CO2 Define Bitcoin's consensus mechanism. The immutable blockchain and appreciate how security comes from a combination of technical methods and clever incentive engineering.
CO3 Learn how the individual components of the Bitcoin protocol make the whole system works: transactions, script, blocks, and the peer-to-peer network.
CO4 Exploit applications of Blockchain in real world sceneries.

BIG DATA AND CLOUD COMPUTING (Subject Code: 6104)

CO1 Learners will be able to articulate the main concepts, key technologies, strengths, and limitations of cloud computing.
CO2 Learners will be able to apply form state-of-the-art cloud computing using open source technology.
CO3 Learner will be able to identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
CO4 Learner will be able to explain the core issues of cloud computing such as security, privacy, and interoperability.

PROJECT (Subject Code: 6105)

COURSE OBJECTIVES

SEMESTER- I

BUSINESS AND TECHNICAL COMMUNICAT ION SKILLS (Subject Code: 1101)

- To demonstrate the fundamental concepts of interpersonal and professional communication.
- To encourage active listening with focus on content, purpose, ideas.
- To facilitate fluent speaking skills in social, academic and professional situations.
- To train in reading strategies for comprehending academic and business correspondence.
- To promote effective writing skills in business, technology and academic arenas.

PROBLEM SOLVING USING C (Subject Code: 1102)

- To teach students a programming language.
- To help them learn problem solving techniques.
- To teach the student to write programs in C and to solve the problems

PROBLEM SOLVING USING C LAB (subject code: 1201)

- To enable the students to learn a programming language.
- To learn problem solving techniques.
- To teach the student to write programs in C and to solve the problems.

WEB PROGRAMMING (Subject Code: 1103)

- To give insight about latest technologies to design and develop web applications using client- side scripting, server-side scripting, and database connectivity.

WEB PROGRAMMING LAB (Subject Code: 1202)

- To develop web applications using client-side scripting, server-side scripting, and database connectivity.

COMPUTER FUNDAMENTALS AND OPERATING SYSTEM (Subject Code: 1104)

- To understand the proper working of operating system.
- To develop understanding of Computer operating system, its structures, functioning and algorithms.
- To ensure that students gain a solid understanding of the fundamental concepts modern multitasking operating system.

OFFICE AUTOMATION TOOLS (Subject Code: 1105)

- To familiarize the students in preparation of documents and presentations with office automation tools, internet and internet tools.

SEMESTER – II

ENVIRONMENTAL SCIENCE AND RTI (Subject Code: 2101)

- To help the students to acquire knowledge of pollution and environmental degradation.
- To help students acquire knowledge of the environment beyond the immediate environment including distant environment.
- To help students acquire a set of values for environmental protection.
- To provide students with an opportunity to be actively involved at all levels in environmental decision making.
- Describe the benefits of RTI.
- Identify the legal and historical foundations for RTI

PROGRAMMING METHODOLOGY AND C++ (Subject Code: 2102)

- To understand how C++ improves C with object-oriented features.
- To learn how to design C++ classes for code reuse.
- To learn how to implement copy constructors and class member functions.
- To understand the concept of data abstraction and encapsulation.
- To learn how to overload functions and operators in C++
- To learn how inheritance and virtual functions implement dynamic binding with polymorphism.
- To learn how to design and implement generic classes with C++ templates

PROGRAMMING METHODOLOGY AND C++ LAB (Subject Code: 2201)

Will enable students to

- Identify and practice the object-oriented programming concepts and techniques
- Practice the use of C++ classes and class libraries, arrays, vectors, inheritance and file I/O stream concepts.

DATABASE MANAGEMENT SYSTEM (Subject Code: 2103)

- To introduce the concept of database management systems
- Learn to organize, maintain and retrieve - efficiently, and effectively - information from a database management system
- To present the concepts and techniques relating to query processing by SQL
- To introduce the concepts of transactions and transaction processing
- To present the issues and techniques relating to concurrency and recovery in multiuser database environments

DATABASE MANAGEMENT SYSTEM LAB (Subject Code: 2202)

- Understand, appreciate and effectively explain the underlying concepts of database technologies
- MATHEMATICS I(Subject Code: 2104)
- To understand the concepts of discrete structures viz. sets, relations and functions etc. and graph theory.
- To understand, apply and solve problems using given method.

PRINCIPLES & PRACTICES OF ACCOUNTS (Subject Code: 2105)

- Introduces students to the world of accounting and understanding basics concepts of accounting to final account.
- The objective of the course is to strengthen the fundamentals of accounting and provide strong foundation for other accounting courses.
- It will be demonstrated how a practical understanding and interpretation of accounting reports and other accounting tools can improve decision-making in the organization.

SEMESTER- III

DATA STRUCTURES (Subject Code: 3101)

- To impart basic concepts of data structures and algorithms
- To learn fundamental concepts about arrays, linked list, stack, queue, trees and graphs
- To understand concepts about searching and sorting techniques.
- To gain knowledge about writing algorithm and step by step approach in solving problems with the help of fundamental data structures.
- To find complexity of various algorithmic methods.

DATA STRUCTURES- LAB (Subject Code: 3201)

- To introduce the concepts of data structures including arrays, linked list, stack and queues.
- To design and implement various data structure algorithms.
- To introduce various techniques for representation of the data in the world.
- To create programs using algorithms and also techniques of sorting and searching.

JAVA PROGRAMMING (Subject Code: 3102)

- To gain knowledge about basic Java language syntax and semantics.
- To write Java programs and use concepts such as variables, conditional and iterative execution methods etc.
- To understand the fundamentals of object-oriented programming in Java, including defining classes, objects, etc.
- To understand the principles of inheritance, packages and interfaces. Course Outcomes:
- To teach Object-Oriented programming concepts, techniques, and applications using the Java programming language.
- Problem solving skills – to analyze real life problem, find and develop algorithmic steps to solve it and then implement these steps in JAVA.
- Experience with developing and debugging software in Java.
- To develop real life projects using database connectivity with JDBC.
- JAVA PROGRAMMING – LAB (Subject Code: 3202)
- To develop software skills for developing real world applications using Java Programming language. • To enable implementation of frontend and backend of an application.
- To implement classical problems using Java programming
- To be able to use the Java SDK environment to create, debug and run simple Java programs.

MATHEMATICS II (Subject Code: 3103)

- To provide suitable and effective methods called numerical methods for obtaining approximate numerical results of the problems.
- To deal with various topics like finding roots of the equations, solving systems of linear algebraic equations, interpolation, numerical integration and differentiation, solution of differential equations and solution of matrix problems.
- To facilitate numerical computing.

COMPUTER ORGANISATION AND ARCHITECTURE (Subject Code: 3104)

- To introduce fundamental concepts of Boolean algebra, logic gates and combinational circuits
- To give a basic understanding of concepts and structure of computers. • To understand the organization of Cache memory and memory management hardware. • To study the working of different interrupts & Mapping Techniques.
- To study register organization.
- To understand the different addressing modes.
- To demonstrate the working of central processing unit and RISC and CISC Architecture.

SEMESTER – IV

PYTHON PROGRAMMING (Subject Code: 4101)

- Learn the fundamentals of writing Python scripts.
- Learn core Python scripting elements such as variables and flow control structures.
- Discover how to work with lists and sequence data.

- Write Python functions to facilitate code reuse.

PYTHON PROGRAMMING – LAB (Subject Code: 4201)

- Install and run the Python interpreter
- Gain knowledge of Python syntax
- Learn variable declarations in Python
- Learn control structures
- Understand modules

INTRODUCTION TO MICROPROCESSORS (Subject Code: 4102)

- To learn and understand technical aspect of 8085 microprocessor.
- To understand the standard instruction set available for 8085 IC.
- To Design and develop various assembly language programs for 8085 IC and 8255 PPL.
- To learn the concept of interrupts
- To understand serial communication and interfacing.
- To understand advance microprocessor 8088/8086.

INTRODUCTION TO MICROPROCESSORS – LAB (Subject Code: 4202)

- To become familiar with the architecture and Instruction set of Intel 8085 microprocessor..
- To be able to develop simple assembly level programs

COMPUTER NETWORKS (Subject Code: 4103)

- To study TCP/IP & OSI protocol suites
- Learn how computer network hardware and software operate
- Investigate the fundamental issues of network design
- Learn about dominant network technologies

SOFTWARE ENGINEERING (Subject Code: 4104)

- To understand the nature of software development and software life cycle process models, agile practices.
- To explain methods of capturing, specifying, visualizing and analyzing software requirements.
- To understand concepts and principles of software design and user-centric approach and principles of effective user interfaces.
- To understand need of project management and project management life cycle.
- To understand project scheduling concept and risk.

SEMESTER – V

MOBILE APPLICATION (Subject Code: 5101)

- Understand the application development lifecycle.
- Develop a grasp of the Android OS architecture.
- Create an android based mobile application
- Familiarize with Android's APIs for data storage, retrieval, user preferences, files and content providers
- Experiment with database to store data locally

- Identity, analyze and choose tools for Android development including device emulator, profiling tools and IDE

MOBILE (ANDROID) APPLICATION LAB (Subject Code: 5201)

- Install and run the Android studio & JDK 1.8
- Gain knowledge of Android syntax
- The student will learn the basics of Android platform and get to understand the application lifecycle
- Android programming wherein students will be able equipped with skills for analyzing, designing, developing and troubleshooting java applications
- Students understand the operation of the application, application lifecycle, configuration files, intents, and activities.

ARTIFICIAL INTELLIGENCE (Subject Code: 5102)

- To understand the basic principles, techniques, and applications of Artificial Intelligence
- To understand the historical perspective of AI and its foundations.
- To understand a basic understanding of the building blocks of AI.
- To understand intelligent agents: Search, Knowledge representation, inference, logic, and learning

CYBER SECURITY (Subject Code: 5103)

- The learner will gain knowledge about protect personal data, and secure computer networks.
- The learner will be able to examine secure software and wed security. The learner will be able to find solution to the key distribution problem by using functional key pair; public key cryptography
- The learner will develop an understanding of security policies (such as confidentiality, integrity, and availability), as well as protocols to implement such policies.
- The learner will be able to examine certain attacks on networks and security related services.

MULTIMEDIA AND APPLICATION (Subject Code: 5104)

- To learn and understand technical aspect of Multimedia Systems.
- To understand the standards available for colour model and different images, video and text applications.
- To Design and develop various Multimedia Systems applicable in real time
- To learn various multimedia authoring systems, computer graphics used for multimedia applications and Display devices.
- To understand Video signal formats and TV broadcasting system.

MANAGEMENT INFORMATION SYSTEM (Subject Code: 5105)

- Understand the Management Information concept with role of management in an organization.
- Explain relationships between concepts of information systems, organization, management and strategy.
- Explain managerial activities and roles with decision making process.
- Understand MIS concepts working in development stages through various case studies.

SEARCH ENGINE OPTIMIZATION (Subject Code: 5105)

- To optimize a website involving editing its content, adding content, doing HTML, and associated coding to both increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines.
- To learn to promote a site to increase the number of back links, or inbound links, is another SEO tactic.
- To explore the legal relationships among the various industries.

DATA ANALYSIS AND VISUALIZATION (Subject Code: 5105)

- Conduct exploratory data analysis using visualization.
- Design and evaluate color palettes for visualization based on principles of perception.
- Apply data transformations such as aggregation and filtering for visualization.
- Identify opportunities for application of data visualization in various domains.
- Use JavaScript with D3.js to develop interactive visualizations for the Web.

SEMESTER – VI

INTELLECTUAL PROPERTY RIGHTS, PATENTS AND CYBER LAWS (Sub Code: 6101)

- To understand the importance of Intellectual property.
- To gain knowledge of Intellectual property to protect creative work.
- To understand the registration process of various Intellectual Property
- To learn how to protect intellectual property.
- To understand the concept of cyber law and IT Act.

DATA WAREHOUSING AND DATA MINING (Subject Code: 6102)

- Be familiar with mathematical foundations of data mining tools.
- Understand and implement classical models and algorithms in data warehouses and data mining
- Characterize the kinds of patterns that can be discovered by association rule • mining, classification and clustering.
- Master data mining techniques in various applications like social, scientific and environmental context.
- Develop skill in selecting the appropriate data mining algorithm for solving practical problems

INTERNET OF THINGS (IOT) (Subject Code: 6103)

- To learn about IOT concepts and its Applications
- To learn various domains in IOT

MACHINE LEARNING (Subject Code: 6104)

- To introduce students to the basic concepts and techniques of Machine Learning.
- To become familiar with regression methods, supervised and unsupervised learning
- To become familiar with the Applications of Machine Learning Algorithms

BLOCKCHAIN TECHNOLOGY (Subject Code: 6104)

- To understand what Blockchain is and why it is used
- To be able to explain the different components involved within Blockchain
- To know when and why to use Blockchain within an environment
- To understand cryptocurrency and hashing algorithms
- To apply blockchain optimization and enhancements technique to improve security and applications.

BIG DATA AND CLOUD COMPUTING (Subject Code: 6104)

- To provide learners with the comprehensive and in-depth knowledge of Cloud Computing concepts, technologies, architecture, implantations and applications.
- To provide sufficient foundations of cloud computing.

PROJECT (Subject Code: 6105)