Department of Information Technology

(PO=Programme Outcome, PSO= Programme Specific Outcome, CO=Course Outcome)

Programme Overview

B.Sc. Information Technology is a three-year undergraduate programme. The programme aims to produce graduates who have been exposed to experiences that will prepare them to address the information processing requirements of organizations. The curriculum has been carefully designed in collaboration with our course experts and in consultation with our industrial partners. Students will learn about the concepts of information technology and management of information in organizations by understanding systems concepts, communications and information technologies.

Programme Educational Objectives

- The graduates will become successful professional by demonstrating logical and analytical thinking abilities in the field of IT.

- The graduates will work and communicate effectively in interdisciplinary environment, either independently or in team, and demonstrate scientific leadership in academia and IT industry.

- The graduates will engage in lifelong learning and professional development through advanced degrees in information technology, discussion, professional studies and research.

I- Programme Outcomes: B.Sc.- Information Technology

Programme outcomes describe what students are expected to know and be able to do by the time of graduation. The Information Technology Department's Bachelor of Science program must enable students to attain, by the time of graduation. Upon completion of the B. Sc. Information Technology programme, students will be able to:

Programme Outcomes
PO-1 : A degree in B.Sc.(IT) puts a good platform for fundamentals of computer technology. It becomes a stepping stone student's professional career. Information technology having a

dynamic subject, demand frequent updation of syllabi and sync the student with need of industry.

PO2. Scientific knowledge: Apply the knowledge of mathematics, science, and computing to the solution of complex scientific problems.

PO3. Problem analysis: Identify, formulate, research literature, and analyse complex scientific problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and applied sciences.

PO4. Design/Development of solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO5. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO6. Modern tools usage: Create, select, and apply appropriate techniques, resources, and modern computing and IT tools including prediction and modelling to complex scientific activities with an understanding of the limitations.

PO7. The software engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

PO8. Environment and sustainability: Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO9. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the scientific practice.

PO10. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO11. Communication: Communicate effectively on complex activities with the scientific community and with the society at large, such as, being able to comprehend and write

effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO12. Project management: Demonstrate knowledge understanding of the scientific and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO13. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

II-   Programme Specific Outcomes: B.Sc.- Information Technology

Programme Specific Outcomes

All theoretical concepts are implemented in practical which make a student industry ready. Content of the course prepare a student for self-entrepreneurship. The syllabi of the course are a good platform for higher level course in computer science. The course is designed to support automation and digitization in all walks of life.

A graduate with B.Sc. in Information technology will have the ability to:

PSO1. Demonstrate mastery of Information Technology in the following core knowledge areas of Data Structures and Programming Languages, Databases, Software Engineering and Development of Computer Software, Hardware and Architecture.

PSO2. Apply problem-solving skills and the knowledge of computer technology to solve real world problems.

PSO3. Develop technical project reports and present them orally among the users.

PSO4. Communicate Information technology concepts, designs, and solutions effectively and professionally

PSO5. Apply knowledge of computing to produce effective designs and solutions for specific problems

PSO6. Use software development tools, software systems, and modern computing platforms

III- Course Outcomes: B.Sc.- Information Technology

Course Code	Course Name	Course Outcomes
PAPER CODE-0824	**FUNDAMENTAL OF IT, COMPUTER AND PC SOFTWARE**	After completing this course, students will be able to: **CO1.** Understand different Computer Peripherals **CO2.** Understand and apply wireless communications. **CO3.** Learn WWW & Browsers in terms of Internet **CO4.** Understand different types of networks, various topologies and application of networks. **CO5.** Understand types of addresses, data communication. **CO6.** Understand the concept of networking models, protocols, functionality of each layer. **CO7.** Learn basic networking hardware and tools. **CO8.** Identify and classify various of attacks **CO9.** Encrypt and decrypt messages using block chippers and sign. **CO10.** Use Social network technology. **CO11.** Describe web security, intruders, viruses and fire walls **CO12.** Design a model internet with various categories of networks and test the transmission rate. **CO13.** Demonstrate the various Menus and its operating usage in Ms Word. **CO14.** Write up Ms Excel along with practical usage like preparation of final accounts by using formulae and different types of charts . **CO15.** Creation of various slides with different formats with the help of Ms PowerPoint.

		CO16. Appreciate the need for DB approach and understand the components and roles of DBMS. **CO17.** Write SQL queries for the given problem statement **CO18.** Implement a set of relations in the chosen DBMS product, such as MS-Access.
PAPER CODE-0825	**PRAMMING IN C LANGUAGE**	After completing this course, students will be able to: **CO1.** Learn the statements of a C Language **CO2.** Develop small application program in C Language. **CO3.** Create and initialize variables, constant, arrays, pointers, structures and unions. **CO4.** Manipulate values of variables, arrays, pointers, structures, unions and files. **CO5.** Create the function that can receive variables, arrays, pointers and structures. **CO6.** Define functions that can receive variables, arrays, pointers and structures. **CO7.** Create open, read, manipulate, write and close files. **CO8.** Select and use appropriate data structures for the given problems.
Paper Code - 0875	**Object Oriented System Design "Programming in C++ "**	After completing this course, students will be able to: **CO1.** Understand and apply OO design concepts. **CO2.** Declare, initialize and process variables, constants and arrays. **CO3.** Declare, initialize and process variables, constants and arrays. **CO4.** Read and print values from keyboard using Scanner and Dialog boxes **CO5.** Create statements for decisions and loops **CO6.** Define functions and return values. **CO7.** Create classes, objects and constructors.

		CO8. Create, open, manipulate and close files using Streams.
Paper Code - 0874	**DIGITAL CIRCUITS & COMPUTER H/W**	**CO1.** Apply the principles of number system, binary codes and Boolean algebra to minimize logic expressions **CO2.** Develop K-maps to minimize and optimize logic functions up to 5 variables **CO3.** Acquire knowledge about various logic gates and logic families and analyse basic circuits of these families. **CO4.** Design various combinational and sequential circuits such as encoders, decoders and counters using multiplexers, and flip - flops .**CO5.** Describe and compare various memory systems, shift registers. **CO6.** Elaborate CPU and input Output organization. **CO7.** Understand the organization of memory and memory management hardware.
Paper Code- 0928	**AMPLIFIERS AND OSCILLATORS**	**CO1.** To provide a comprehensive understanding of electronic devices and circuits **CO2.** To understand the working diode and transistor. **CO3.** Ideal operational amplifier, inverting and non-inverting amplifier configurations. Biasing and offset currents, and offset voltages. Feedback theory, and negative feedback in op-amp circuits. **CO4.** Op-amp oscillators and their types include: RC- Colpitts, and Hartley. **CO5.** To study basic circuits using diodes and transistors. **CO6.** To know the concept of feedback and design feedback amplifier. **CO7.** To study oscillators and power amplifiers using transistor. **CO8.** Understand the taxonomy of microprocessors and knowledge of contemporary microprocessors.

		CO9. Describe the architecture, bus structure and memory organization of 8085 as well as higher order microprocessors. **CO10.** Explore techniques for interfacing I/O devices to the microprocessor 8085 including several specific standard I/O devices. **CO11.** Demonstrate programming using the various addressing modes and instruction set of 8085 microprocessors. **CO12.** Design structured, well commented, understandable assembly language programs to provide solutions to real world control problems **CO13.** Solve basic binary math operations using the instructions of microprocessor 8085. **CO14.** Apply programming knowledge using the capabilities of the stack, the program counter **CO15.** Design, code and debugs Assembly Language programs to implement simple programs.
Paper Code-0929	**FUNDAMENTAL DATA STRUCTURE**	**CO1.** Understand the concept of Dynamic memory management, data types, algorithms. **CO2.** Understand basic data structures such as arrays, linked lists, stacks and queues. **CO3.** Programs to demonstrate fundamental algorithmic problems including Tree Traversals, Graph traversals, and shortest paths. **CO4.** Solve problem involving graphs, trees and heaps **CO5.** Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data. **CO6.** Understand the concept of graphs and their different types.