B.Sc COMPUTER SCIENCE		
PROGRAMME OUTCOME (PO)	**PO 1. Critical Thinking:** 1.1. Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions. 1.2. Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions. 1.3. Develop self-critical abilities and also the ability to view positions, problems and social issues from plural perspectives.	
	PO 2. Effective Citizenship: 2.1. Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic. 2.2. Develop and practice gender sensitive attitudes, environmental awareness, the ability to understan and resist various kinds of discriminations and empathetic social awareness about various kinds of marginalisation. 2.3. Internalise certain highlights of the nation's and region's history. Especially of the freedom movement, the renaissance within native societies and the project of modernisation of the post-colonial society.	
	PO 3. Effective Communication:	
	3.1. Acquire the ability to speak, write, read and listen clearly in person and through electronic media in both English and in one Modern Indian Language. 3.2. Learn to articulate analysis, synthesis, and evaluation of situations and themes in a well-informed manner. 3.3 Generate hypothesis and articulate assent or dissent by employing both reason and creative thinking.	
	PO 4.Interdisciplinarity:	
	4.1. Perceive knowledge as an organic comprehensive, interrelated and integrated faculty of the human mind. 4.2. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines. 4.3.Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective.	
PROGRAMME SPECIFIC OUTCOMES (PSO)	PSO1	Understand the concepts of Computer Science and Applications.
	PSO2	Understand the concepts of System Software and Application Software.
	PSO3	Understand the concepts of Algorithms and Programming.
	PSO4	Understand the concepts of Computer Networks and Operating Systems

	PSO5	Design, develop, implement and test software systems to meet the given specifications, following the principles of Software Engineering.	
Semester	**Course Code**	**Course title**	**Course outcome**
1	**1B01CSC**	**CORE COURSE – I : 1B01CSC- INTRODUCTION TO C PROGRAMMING**	**CO1:** Aware about basics of programming. **CO2:** Capable to analyze the problem and design algorithm and flowchart. **CO3:** Familiar the basics of high-level language – C. **CO4:** Able to develop efficient and error free programs in C.
2	**2B02CSC**	**CORE COURSE - II : 2B02CSC - ADVANCED C PROGRAMMING**	**CO1:** Familiar with advanced concepts of C program. **CO2:** Capable to work with user defined as well as library functions. **CO3:** Skilled to solve more complex problems. **CO4:** Able to develop C programs using structure, union, pointers and files.
2	**2B03CSC**	**CORE COURSE III : 2B03CSC - ADVANCED C PROGRAMMING - LAB**	

3	**3A11CSC**	**GENERAL AWARENESS COURSE I : 3A11CSC - PROGRAMMING IN C++**	**CO1:** Describe the Object-Oriented Paradigm **CO2:** Understand dynamic memory management techniques **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
3	**3A12CSC**	**GENERAL AWARENESS COURSE II : 3A12CSC- DATABASE MANAGEMENT SYSTEM**	**CO1:** Familiar with organized data collection. **CO2:** Able to design data bases. **CO3:** Skilled to normalize the data bases. **CO4:** Capable to frame queries for various purposes
3	**3B04CSC**	**CORE COURSE IV : 3B04CSC -DATA STRUCTURES**	**CO1:** Able to analyze the complexity of algorithm. **CO2:** Familiar with linear and nonlinear data structures. **CO3:** Acquire the ability to select appropriate data structure for a given problem. **CO4:** Obtain skill for systematic approach to programming.
4	**4A13CSC**	**GENERAL AWARENESS COURSE III: 4A13CSC- DIGITAL ELECTRONICS**	**CO1:** Introduce the basic and important concepts of Digital Principles and Applications. **CO2:** Familiarize with basic building blocks of Digital systems, Digital Logic and Digital Circuits. **CO3:** Design simple combinational digital systems. **CO4:** Familiarize different number systems, codes and data representation.

4	**4A14CSC**	**GENERAL AWARENESS COURSE IV: 4A14CSC OPERATING SYSTEMS**	**CO1:** Familiarize with basics of design of operating systems. **CO2:** Introduce basic working process of operating systems. **CO3:** To understand the importance process and scheduling. **CO4:** To understand the issues in memory management.
4	**4B05CSC**	**CORE COURSE V: 4B05CSC SOFTWARE ENGINEERING**	**CO1:** To understand the Software Development Life Cycle Models. **CO2:** To familiarize with Software Requirement Analysis and Specification. **CO3:** To familiarize with Classical Software Design Techniques. **CO4:** To familiarize with various Software Testing Techniques and Tools.
4	**4B06CSC**	**CORE COURSE VI: 4B06CSC LAB 2 – DATA STRUCTURES USING C++**	
4	**4B07CSC**	**CORE COURSE VIII: 4B07CSC -WEB TECHNOLOGY**	**CO1:** Understand different components in web technology and WWW. **CO2:** Learn to develop interactive Web pages. **CO3:** Present a web document with server-side scripting using PHP. **CO4:** Know the basics of AJAX.
5	**5B09CSC**	**CORE COURSE IX: 5B09CSC JAVA PROGRAMMING**	CO1: Know the overall structure and concept of logic building activity of Java programming language CO2. Identify the real-world things as well as the relationship between them and understand transforming them into their

			corresponding computer representations. CO3. Realize how to achieve code reusability using inheritance, interfaces and packages and expedite application development activities. CO4. Familiarize simple and robust way of handling multitasking and runtime error as well as such kind of abnormal situations within a program. CO5. Design GUI based applications and applications that can be transmitted over internet.
5	**5B10CSC**	**CORE COURSE X: 5B10CSC COMPUTATION USING PYTHON**	**CO1:** Learn Python for expressing computation **CO2:** Familiarize with functions and modules in python **CO3:** Understand object-oriented programming concepts **CO4:** Learn the techniques for database connectivity and GUI programming in Python
5	**5B11CSC-A**	**CORE COURSE XI: 5B11CSC-A A ALGORITHM DESIGNING**	**CO1:** Capable to select suitable algorithm design technique. **CO2:** Able to design optimum algorithms for problems. **CO3:** Skilled to design solutions for real problems.
5	**5B11CSC-B**	**CORE COURSE XI: 5B11CSC-B LINUX ADMINISTRATION**	**CO1:** To learn basic Linux commands and understand the file system structure **CO2:** To understand the Boot loaders and the configuration files **CO3:** To learn different system services, maintenance and configuring these **CO4:** To experience Shell Scripting

5	**5B11CSC-C**	**CORE COURSE XI: 5B11CSC-C COMPUTER GRAPHICS**	**CO1:** Understand basic concepts of graphics input and display devices. **CO2:** Learn line and circle drawing algorithms. **CO3:** Familiarization with 2D and 3D transformations and projections. **CO4:** Understand fundamentals of image processing.
6	**6B12CSC**	**CORE COURSE XII: DATA COMMUNICATION AND COMPUTER NETWORKING**	**CO1:** Understand state-of-the-art in network protocols, architectures and application. **CO2:** To acquire knowledge about different computer networks **CO3:** To understand the use of layer architecture for networking systems.
6	**6B13CSC**	**CORE COURSE XIII: 6B13CSC COMPILER DESIGN**	**CO1:** Learn the basic principles of compiler. **CO2:** Get an idea about the related programs. **CO3:** Understand different components of a compiler. **CO4:** Understand the phases of a compiler.
6	**6B14CSC**	**CORE COURSE XIV: 6B14CSC COMPUTER ORGANIZATION**	**CO1:** Understand the basic terminology of computer system. **CO2:** Understand the functional units of a computer system. **CO3:** Understand the basic operations of a computer system. **CO4:** Understand the memory organization in a computer system.
6	**6B15CSC**	**CORE COURSE XIV: 6B15CSC-A INFORMATION SECURITY**	**CO1**: To understand the need of information security and to master information security Concepts, mechanisms and services as well as issues related to information Security.

			CO2: To be familiar with cryptography and its categories. **CO3:** Distinguish public and private key crypto systems and familiarize the rsa crypto System. **CO4**: To attain the knowledge of digital signature and its security services.
6	**6B15CSC**	**CORE COURSE XIV: 6B15CSC-B DATA MINING**	**CO1:** To Introduce the Concepts of Data Mining and its Applications. **CO2:** To Understand Investigation of Data using practical Data Mining Tools. **CO3:** To Introduce Association Rules Mining. **CO4:** To Introduce Clustering and Classification.
6	**6B15CSC**	**CORE COURSE XIV: 6B15CSC-C BIOINFORMATICS**	**CO1:** Understand Bioinformatics and biological databases. **CO2:** Understand Concept of Biology. **CO3:** Understand Sequence alignment and Similarity search tools. **CO4:** Structural bioinformatics and Bioinformatic tools.
6	**6B16CSC**	**CORE COURSE XVI: 6B16CSC LAB 4 – JAVA PROGRAMMING**	
6	**6B18CSC**	**CORE COURSE XVIII: 6B18CSC PROJECT**	

B.SC. COMPUTER SCIENCE GENERIC ELECTIVE COURSES			
STUDENTS OF OTHER DEPARTMENTS CAN CHOOSE **ANY ONE OF THE GENERIC ELECTIVE COURSES FROM THE POOL OF FIVE COURSES.**			
Semester	**Course Code**	**Course title**	**Course outcome**
5	**5D01CSC**	**GENERIC ELECTIVE COURSEI:5D01CSC PROGRAMMING IN C**	**CO1:** To understand the basic knowledge of programming **CO2:** To develop C programs **CO3:** To develop skill in advanced program constructs **CO4:** To develop skill in programming
5	**5D02CSC**	**GENERIC ELECTIVE COURSE II: 5D02CSC Web Technology**	**CO1:** To understand the knowledge of HTML **CO2:** To understand the knowledge of various HTML tags **CO3:** To enable students to program for the World Wide Web using HTML **CO4:** To understand the basic knowledge of Java Script
5	**5D03CSC**	**GENERIC ELECTIVE COURSE III: 5D03CSC DATABASE MANAGEMENT SYSTEM**	**CO1:** To understand the fundamentals of database management system **CO2:** To develop Skill in designing database **CO3:** To understand the concept of SQL commands **CO4:** To develop Skill in writing queries
5	**5D04CSC**	**GENERIC ELECTIVE COURSE IV: 5D04CSC FUNDAMENTALS OF COMPUTERS AND PROGRAMMING**	**5DCO1:** To know the working principle of a computer **CO2:** To understand the concept of number system **CO3:** To understand the basics of computer network **CO4:** To understand the basics of programming
5	**5D05CSC**	**GENERIC ELECTIVE COURSE IV: 5D05CSC INTRODUCTION TO PYTHON PROGRAMMING**	**CO1:** Learn Python for expressing computation **CO2:** Learn about program control statements in python **CO3:** Familiarize with functions and modules in python **CO4:** Learn the techniques for data visualization in python

COMPLEMENTARY ELECTIVE COURSE FOR B.SC. MATHEMATICS/STATISTICS/PHYSICS/ ELECTRONICS PROGRAMMES AND GENERIC ELECTIVE COURSES

Semester	Course Code	Course title	Course outcome
1	**1C01CSC**	**COMPLEMENTARY ELECTIVE COURSE I: INTRODUCTION TO COMPUTERS AND PROGRAMMING**	**CO1:** Familiarize with the hardware components of a digital computer **CO2:** Understand the basic idea of how data is represented in computers **CO3:** Familiarize with types of software **CO4:** Ability to design algorithmic solutions to problems
2	**2C02CSC**	**COMPLEMENTARY ELECTIVE COURSE II: PROGRAMMING IN C**	**CO1:** Understand the building blocks of C programming language **CO2:** Familiarize with program control structures in C **CO3:** Learn procedural programming using functions **CO4:** Understand user defined data type
3	**3C03CSC**	**COMPLEMENTARY ELECTIVE COURSE III: WEB TECHNOLOGY WITH DATABASE MANAGEMENT SYSTEM**	**CO1:** Develop skills to design a web page using HTML **CO2:** Understand HTML Forms and CSS Styling **CO3:** Develop skills to develop database and retrieve data using SQL **CO4:** Learn basics of server-side programming with PHP
4	**4C04CSC**	**COMPLEMENTARY ELECTIVE COURSE IV: COMPUTATION USING PYTHON**	**CO1:** Learn Python for expressing computation **CO2:** Familiarize with functions and modules in python **CO3:** Understand object-oriented programming concepts **CO4:** Learn the techniques for data visualization in python
4	**4C05CSC**	**COMPLEMENTARY ELECTIVE COURSE V: LAB 1 – PROGRAMMING IN C, WEB PROGRAMMING**	**CO1:** Achieve skills to use C language for problem solving **CO2:** Understand SQL and basic web programming **CO3:** Achieve skills to use Python for problem solving

		AND PYTHON PROGRAMMING	