Name of the programme	**Bachelor of Science in Computer science**
Short Name of the programme	**B.Sc. Computer science**
Code of the programme	**BCS**

PROGRAMME OUTCOMES - POs

Sl. NO	CO No:	Programme Outcomes
1	PO 1	Fundamental understanding of the principles of Computer Science and its connections with other disciplines
2	PO 2	Procedural knowledge that creates different types of professionals related to Computer Science, including research and development, teaching and industry, government and public service
3	PO 3	Skills and tools in areas related to computer science and current developments in the academic fields of study
4	PO 4	Use knowledge, understanding and skills required for identifying problems and issues, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, and their application, analysis and evaluation using methodologies as appropriate to Computer Science for formulating solutions
5	PO 5	Communicate the results of studies undertaken in Computer Science accurately in a range of different contexts using the main concepts, constructs and techniques
6	PO 6	Meet one's own learning needs, drawing on a range of current research and development work and professional materials
7	PO 7	Apply Computer Science knowledge and transferable skills to new/unfamiliar contexts,
8	PO 8	Demonstrate subject-related and transferable skills that are relevant to industry and employment opportunities.

PROGRAMME SPECIFIC OUTCOMES - PSOs

Sl. NO	CO No:	Programme Specific Outcomes
1	PSO 1	Demonstrate the aptitude of Computer Programming and Computer based problem solving skills.
2	PSO 2	Display the knowledge of appropriate theory, practices and tools for the specification, design, implementation
3	PSO 3	Ability to learn and acquire knowledge through online courses available at different massive open online course providers.
4	PSO 4	Ability to link knowledge of Computer Science with other two chosen Complementary disciplines of study.
5	PSO 5	Display ethical code of conduct in usage of Internet and Cyber systems.
6	PSO 6	Ability to pursue higher studies of specialization and to take up technical employment.
7	PSO 7	Ability to formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate .
8	PSO 8	Ability to operate, manage, deploy, configure computer network, hardware, software operation of an organization.
9	PSO 9	Ability to present result using different presentation tools.PSO10. Ability to appreciate emerging technologies and tools.

COURSE OUTCOMES - COs				
Core Course				
Semester	Course code	Course Title	CO No:	Course Outcomes
1	BCS1B01	COMPUTER FUNDAMENTALS AND HTML	CO1	Familiar with fundamental concepts of Computer hardware and software
			CO2	Have a knowledge of different Number system, Digital codes and Boolean Algebra
			CO3	Understand the problem-solving aspect
			CO4	Demonstrate the algorithm and flow chart for the given problem
			CO5	Design a Webpage with CSS
2	BCS2B02	PROBLEM SOLVING USING C	CO1	Interpret the basic principles of C Programming.
			CO2	Acquire decision making and looping concepts
			CO3	Design and develop modular programming.
			CO4	Explore usage of Arrays, strings, structures,union and files.
			CO5	Effective utilization of pointers and dynamic memory allocation
	BCS2B03	PROGRAMMING LABORATORY I: LAB EXAM OF 1 ST & 2 ND SEMESTER -HTML AND PROGRAMMING IN C	CO1	·Analyze a web page and identify its elements and attributes.
			CO2	Create web pages using HTML5 and Cascading Style Sheets
			CO3	Design and develop a webpage with Hyperlinks
			CO4	Enhance their analyzing and problem solving skills and use the same for writing programs in C.
			CO5	To write diversified programs using C language
3	XXXXA11	PYTHON PROGRAMMING	CO1	Explain basic principles of Python programming language
			CO2	Implement decision making and loop statements in Python,.
			CO3	Implement GUI applications using Python
			CO4	Explain modular programming concepts using Python
			CO5	Familiarize with List,Tuple,Dictionary concepts in Python
	XXXXA12	SENSORS AND TRANSDUCERS	CO1	Explain resistance, inductance and capacitance transducers
			CO2	Perceive the concepts of temperature transducers
			CO3	Perceive the concepts level transducers and pressure
			CO4	Explain flow transducers, electromagnetic transducers, radiation sensors and sound transducers
			CO1	To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles

	BCS3B04	DATA STRUCTURES USING C	CO2	To have knowledge of complexity of basic operations like insert, delete, search on these data structures.
			CO3	Ability to choose a data structure to suitably model any data used in computer applications.
			CO4	Design programs using various data structures including hash tables, Binary and general search trees, graphs etc.
			CO5	Implement and know the applications of algorithms for sorting, pattern matching
4	XXXXA13	DATA COMMUNICATION AND OPTICAL FIBERS	CO1	To Acquaint with the structure of Data Communications System and its components
			CO2	To Familiarize with different network terminologies and transmission media
			CO3	To gain knowledge of the different multiplexing techniques ,Telephone system,Mobile System-GSM
			C04	To become familiar with the functions of a Datalink layer and Switching
			CO5	To acquire the knowledge of Optical Fibre Cable and its working
	XXXXA14	MICROPROCESSORS-ARCHITECTURE AND PROGRAMMING	CO1	To study general architecture of microprocessor
			CO2	To write assembly language programs,both simple programs and interfacing programs
			CO3	To know how to interface peripheral devices with 8085
			CO4	To study the architecture of 8086 microprocessor
	BCS4B05	DATABASE MANAGEMENT SYSTEM AND RDBMS	CO1	Gain knowledge of database systems and database management system software
			CO2	Ability to model data in applications using conceptual modelling tools such as ER Diagrams and design data base schemas based on the model.
			CO3	Formulate, using SQL, solutions to a broad range of query and data update problems
			CO4	Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
			CO5	Be acquainted with the basics of transaction processing andconcurrency control.
	BCS4B06	PROGRAMMING LABORATORY II: LAB EXAM OF 3 RD AND 4 TH SEMESTER -DATA STRUCTURES AND RDBMS	CO1	Make use of typical data definitions and manipulation commands
			CO2	Test the implementation of nested and join queries
			CO3	Develop simple application using views, sequences and synonyms.
			CO4	Inspect and implement applications that require front-end tools
			CO5	Familiarizing with different datastructures tools like searching ,sorting,Linked List etc

5	BCS5B07	COMPUTER ORGANIZATION AND ARCHITECTURE	CO1	To make students understand the basic structure, operation and characteristics of a digital computer
			CO2	To familiarize with Computer Instruction and Interrupt Design
			CO3	To make students know the different types of control unit and Addressing Modes
			CO4	To familiarize with the Memory organization including cache memories and virtual memory
			CO5	To understand the I/O devices and standard I/O interfaces
	BCS5B08	JAVA PROGRAMMING	CO1	Knowledge of the structure and model of the Java programming language,
			CO2	Use the Java programming language for various programming technologies
			CO3	Develop software in the Java programming language
			CO4	Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements
	BCS5B09	WEB PROGRAMMING USING PHP	CO1	To understand basics of the Internet and World Wide Web
			CO2	To learn basic skill to develop responsive web applications
			CO3	To acquire the knowledge of HTML
			CO4	To understand basic concept of client side scripting language -javascript
			CO5	To understand the server side scripting language -PHP
			CO6	To learn about the integration of PHP and Postgresql
	BCS5B10	PRINCIPLES OF SOFTWARE ENGINEERING	CO1	Ability to apply software engineering principles and techniques.
			CO2	To produce efficient, reliable, robust and cost-effective software solutions
			CO3	Familirize with Unified Modeling Language
			CO4	Acquire the basics of software testing and maintenance phase
	BCS5D01	OPEN COURSE: INTRODUCTION TO COMPUTERS AND OFFICE AUTOMATION	C01	Understand different types of computers
			CO2	Learn documentation using Word processing software such as MS word and Open Office Writer
			CO3	Learn calculations using spreadsheet MS Excel and Open Office Writer
			CO4	Learn presentations using Open Office Impress/MS-Power Point):
	BCS6B11	ANDROID PROGRAMMING	CO1	To gain knowledge of developing end user application using Android SDK
			CO2	To familiarize with Android Resources
			CO3	To acquaint with user interfaces development in Android
			CO4	To acquire knowledge about creating menus and operating files in Android

6	BCS6B12	OPERATING SYSTEMS	CO1	To Familiarize with the Objectives, functions and types of Operating System
			CO2	To have a basic knowledge about process, Threads, Deadlock
			CO3	To understand the knowledge of Linux shell programming
			CO4	To learn about CPU scheduling and memory management
	BCS6B13	COMPUTER NETWORKS	CO1	To understand about different network terminologies
			CO2	To familiarize with different layers of network
			CO3	To understand the functions of datalink layer and network layer
			CO4	To familiarize with the functions of Transport layer
			CO5	To understand the concept of network security and Cryptography
	BCS6B14	PROGRAMMING LABORATORY III: LAB EXAM OF V TH SEMESTER JAVA AND PHP PROGRAMMING	CO1	To learn about the Object Oriented Concepts in Java Programming
			CO2	To understand the practical knowledge of Web programming using PHP
	BCS6B15	PROGRAMMING LABORATORY IV: LAB EXAM OF ANDROID AND LINUX SHELL PROGRAMMING	CO1	To learn the practical knowledge of Android Programming
			CO2	To familiarize with the practical knowledge of shell programming
	BCS6B17	(PROJECT WORK OR RESEARCH METHODOLOGY PAPER) AND INDUSTRIAL VISIT	CO1	To acquire the implementation level knowledge and interaction with industry
	BCS6B16e	TECHNICAL WRITING	CO1	To understand the basics of technical communication
			CO2	To learn Constituents of Technical Written Communication
			CO3	To learn Forms of Technical Communication
Open Course				
5	BCS5D01	OPEN COURSE: INTRODUCTION TO COMPUTERS AND OFFICE AUTOMATION	C01	Understand different types of computers
			CO2	Learn documentation using Word processing software such as MS word and Open Office Writer
			CO3	Learn calculations using spreadsheet MS Excel and Open Office Writer
			CO4	Learn presentations using Open Office Impress/MS-Power Point):
Complementary Course				

1	CSC1C01	COMPLEMENTARY-1 -COMPUTER FUNDAMENTALS	CO1	To understand the basic number system, Conversion and Computer Codes
			CO2	To learn Boolean Algebra and different axioms and theorems in it
			CO3	To understand the basic Computer Organisation
			CO4	To Familiarize with algorithms and flowcharts
2	CSC2C02	COMPLEMENTARY-1 -FUNDAMENTALS OF SYSTEM	CO1	To understand the Concept of System Software
			CO2	To learn the Computer Network
			CO3	To familiarize the database management System
3	CSC3C03	PROBLEM SOLVING USING C	CO1	To learn the basic syntax of C language
			CO2	To understand the Control , conditional, loop statements in C
			CO3	To familiarize with the user defined functions, pointers, and datafiles in C
4	CSC4C04	DATA STRUCTURES USING C	CO1	To learn the Concepts of datastuctures using C
			CO2	To understand the concepts of Linked Lists,
			CO3	To learn the different searching and sorting techniques
	CSC4C05	PROGRAMMING LAB: C AND DATA STRUCTURE	CO1	To Acquire the practical knowledge of C language and data structures
			CO2	To obtain knowledge of the implementation of searching,sorting,Linked list