

DAV AUTONOMOUS COLLEGE TITILAGARH

DEPARTMENT OF COMPUTER SCIENCE

After successful completion of 3 year of BSc programme in subject Computer Science a student should be able to :

PROGRAM OUTCOME (PO) OF BSc Computer Science

PO1	Use creativity, critical thinking, and analysis and research skills to solve theoretical and real-world problems in computer science
PO2	Work effectively both individually and as member of team.
PO3	Discuss software development fundamentals, including programming, data structures, algorithms and complexity.
PO4	Illustrate the concepts of systems fundamentals, including architectures and organization, operating systems, networking and communication.
PO5	Gain the knowledge about software engineering fundamentals, including software analysis and design, evaluation and testing, and software engineering processes.
P06	Communicate effectively for different purposes and in different situations.
PO7	Gain self-discipline in everyday aspects of life and work.
PO8	Make use of fundamentals of Application, including information management and intelligent applications.
PO9	Adequate training in relevant skill sector and creating employable abilities among the under graduates.
PO10	Intellectual exploration of knowledge towards actions in clear and rational manner by understanding the logical connections between ideas and decisions.

PROGRAM SPECIFIC OUTCOMES (PSO) OF BSc Computer Science:

PSO1	Design the application using programming languages as per the needs of Industry and society.
PSO2	Adopt new and fast emerging technologies in computer science.
PSO3	Develop digital circuits using the digital logic.
PSO4	Design and develop websites using Web Technolgy.

COURSE OUTCOMES OF BSC Computer Science:

SEMESTER	COURSE	TITLE	COURSE OUTCOMES
SEM-I	CORE-I	PROGRAMMING USING C	<p>CO1- Discuss the programming language tools and history of C programming.</p> <p>CO2- Define C Tokens like keywords, identifiers and operators.</p> <p>CO3- Explain input, output statements in C programming.</p> <p>CO4- Use of operator in C programming.</p> <p>CO5- Design ,develop and test selection logic program using decision making and looping statements in C Programming.</p> <p>CO6- Implement matrix programs using Array.</p> <p>CO7- Interpret string manipulation using String handling functions.</p> <p>CO8- Use of pointers and functions in C Programs</p> <p>CO9- Illustrate user defined data types including structures and unions to solve the problems.</p> <p>CO10- Illustrate file handling function in C Program</p>
	CORE-II	DIGITAL LOGIC	<p>CO1- Understand different methods used for the simplification of Boolean functions and binary arithmetic.</p> <p>CO2- To design and implement combinational circuits, synchronous & asynchronous sequential circuits.</p> <p>CO3 Use of computer arithmetic and number system.</p> <p>CO4 The architecture of computer, RAM and ROM.</p> <p>CO5 The internal organization of memory.</p>
	GE-1	COMPUTER FUNDAMENTALS	<p>CO1-To make the students understand and learn the basics of computer.</p> <p>CO2- To make them familiar with the parts and functions of computer.</p> <p>CO3- To learn the features of some emerging technologies like Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems.</p> <p>CO4- Knowledge about MS-Office Software.</p>
SEM-II	CORE-III	PROGRAMMING USING C++	<p>CO1- Depict the applications and need of Object Oriented Programming language and Use the benefits of object oriented</p>

			<p>design and understand when it is an appropriate methodology to use.</p> <p>CO2-Describe the concepts of classes, objects, member function, constructors and destructor.</p> <p>CO3-Explain the need of operator overloading, inheritance, polymorphism, and virtual functions.</p> <p>CO4-Explain managing input- output, and file in C++.</p> <p>CO5-Design object oriented solutions for small systems involving multiple objects</p>
	CORE-IV	DATA STRUCTURE	<p>CO1- Discuss fundamental concepts of Data Structure, abstract data type, and algorithm analysis</p> <p>CO2-Summarize different searching and sorting techniques using array</p> <p>CO3-Describe linear data structure Stack and its application</p> <p>CO4-Explain linear data structure Queue and its types (Linear Queue, Circular Queue, and Priority Queue);</p> <p>CO5-Discuss non-linear data structure Tree and Graph using operations like traversing mechanism;</p> <p>CO6- Understand different methods of organizing large amount of data using data structure.</p> <p>CO7-Understand various techniques for representation of the data in the real world.</p>
	GE-2	C AND DATA STRUCTURE	<p>CO1-To learn the basics of C programming language.</p> <p>CO2-To understand the fundamentals of linear data structure.</p> <p>CO3- To be able write simple C and data structure programs.</p> <p>CO4- Knowledge of linear data structure and its implementation</p>
SEM-III	CORE-V	JAVA PROGRAMMING	<p>CO1- Understand how to design graphical user interface in Java programs.</p> <p>CO2- Illustrate the concept of inheritance and interfaces;</p> <p>CO3-Understand concept of packages and study how to implement them.</p> <p>CO4-Able to design User Interface using Swing and AWT</p> <p>CO5-Understand how to design and develop applets.</p>

	CORE-VI	DATABASE SYSTEMS	<p>CO1-To understand user requirements and frame it in data model.</p> <p>CO2-To understand creations, manipulation and querying of data in databases.</p> <p>CO3-Solve real world problems using appropriate set, function, and relational models.</p> <p>CO4-Design E-R Model for given requirements and convert the same into database tables.</p> <p>CO5-Illustrate the basics of Structured Query Language and construct queries using SQL;</p>
	CORE-VII	DISCRETE MATHEMATICAL STRUCTURES	<p>CO1-To learn the mathematical foundations for Computer Science.</p> <p>CO2- Understanding the concepts of discrete mathematics.</p> <p>CO3- Express a logic sentence in terms of predicates, quantifiers, and logical connectives.</p> <p>CO4-Apply the operations of sets and use Venn diagrams to solve applied problems; solve problems using the principle of inclusion-exclusion.</p> <p>CO5- Demonstrate different traversal methods for trees and graphs.</p>
SEM-IV	CORE-VIII	OPERATING SYSTEM	<p>CO1- Describe the Operating system as system software and types of system calls.</p> <p>CO2- Discuss file access methods, directory structure and file allocation methods</p> <p>CO3- Interpret the different strategies of deadlocks.</p> <p>CO4-Describe the different issues related to memory management</p> <p>CO5-Explain the multithreading models and synchronization techniques;</p> <p>CO6- Knowledge about the different CPU scheduling algorithms;</p>
	CORE-IX	COMPUTER NETWORKS	<p>CO1- Understand the parts of a communication network and how they work together.</p> <p>CO2- Understand and implement the various concepts of networking ie LAN, MAN & WAN</p> <p>CO3- Idea about OSI reference model and TCP/IP model;</p>

			<p>CO4- Details of various hardware and software used in network design</p> <p>CO5- Idea about various standards of IEEE 802.11 architecture and Bluetooth architecture used in Wireless LAN</p> <p>CO6- Knowledge about various protocols- ARP, UDP and TCP -4 and IPV-4</p> <p>CO7- Knowledge of Cryptography and firewall used in network security</p> <p>CO8- Idea about WWW architecture, E-mail and HTTP</p>
	CORE-X	Computer Graphics	<p>CO1- Learn the core concepts of Computer Graphics</p> <p>CO2- Details of raster scan graphics methods of line drawing algorithms, polygon filling algorithms, scan conversion,</p> <p>CO3- Idea about basic transformation and window to viewport co-ordinate transformation. Setting window and viewport in OpenGL,</p> <p>CO4- Use line clipping and polygon clipping algorithms,</p> <p>CO5- Idea about 3-D transformations hidden surface elimination methods</p> <p>CO6- Apply basic image-processing techniques.</p> <p>CO7- Understand the architecture and operations of a 2D graphics system.</p>
SEM-V	CORE-XI	WEB TECHNOLOGIES	<p>CO1- To design and develop standard and interactive web pages.</p> <p>CO2- To learn and implement some popular web scripting languages.</p> <p>CO3- Create web pages using XHTML and Cascading Style Sheets.</p> <p>CO4- Build dynamic web pages using JavaScript (Client side programming).</p> <p>CO5- Create web pages using PHP</p> <p>CO6- Identify the difference between the HTML PHP and XML documents.</p> <p>CO7- Design web application using MVC architecture</p> <p>CO8- Understand the JSP and Servlet concepts.</p>
	CORE-XII	SOFTWARE ENGINEERING	<p>CO1- To know and able to decompose the given project in various phases of a lifecycle.</p> <p>CO2- Select appropriate process model depending on the user requirements.</p>

			<p>CO3- Perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.</p> <p>CO4- Students will be able to know various processes used in all the phases of the product.</p> <p>CO5- Students can apply the knowledge, techniques, and skills in the development of a software product.</p>
	DSE-I	Numerical Techniques	<p>CO1- Evaluation of integrals using numerical techniques</p> <p>CO2- Solving ordinary differential equations using numerical techniques</p> <p>CO3- Representation of floating point numbers</p> <p>CO4- Different methods of solving non-linear systems</p> <p>CO5- Knowledge about Numerical integration</p>
	DSE-II	Unix Shell Programming	<p>CO1- Learn the basics of UNIX OS, UNIX commands and File system</p> <p>CO2- Familiarize students with the Linux environment</p> <p>CO3- Learn fundamentals of shell scripting and shell programming.</p> <p>CO4- Able to write simple programs using UNIX</p> <p>CO5- Understand multiprogramming environment</p>
SEM-VI	CORE-XIII	ARTIFICIAL INTELLIGENCE	<p>CO1- Understanding the history of artificial intelligence (AI) and its foundations.</p> <p>CO2- Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.</p> <p>CO3- Awareness of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.</p> <p>CO4- Learn proficiency developing applications in an 'AI language', expert system shell, or data mining too</p> <p>CO5- Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications.</p>

	CORE-XIV	ALGORITHM DESIGN TECHNIQUES	<p>CO1- Able to analyze worst-case and best case running times of algorithms using asymptotic analysis.</p> <p>CO2- Describe synthesize and utilize the divide-and-conquer paradigm</p> <p>CO3- Describe synthesize and utilize the dynamic-programming paradigm</p> <p>CO4- Describe synthesize and utilize the greedy paradigm</p> <p>CO5- Knowledge about the major graph algorithms and their analysis.</p> <p>CO6- Describe the different methods of amortized analysis (aggregate analysis, accounting, potential method).</p>
	DSE-III	Data Science	<p>CO1- Learn emerging issues related to various fields of data science.</p> <p>CO2- Understand the underlying principles of data science, exploring data analysis.</p> <p>CO3- Learn the basics of R Programming.</p> <p>CO4- Apply Data-driven, Machine Learning approaches for business decisions</p> <p>CO5- Use Data Concepts to represent data for easy understanding</p>
	DSE-IV	PROJECT WORK	<p>CO1- Apply fundamental and disciplinary concepts and methods in ways appropriate to their principal areas of study.</p> <p>CO2- Demonstrate skill and knowledge of current information and technological tools and techniques specific to the professional field of study.</p> <p>CO3- Use effectively oral, written and visual communication.</p> <p>CO4- Demonstrate an awareness and application of appropriate personal, societal, and professional ethical standards.</p> <p>CO5- Integrate information from multiple sources.</p>

