Program Specific Outcome (PSO):

a. Ability to apply knowledge of Computing, Math, Science in the various problem domains.
b. Ability to solve real-world problems using appropriate solution techniques.
c. Ability to manage critical situations and also assist to reach an effective solution plan.
d. Ability to get familiar with various technologies used in the IT industry such as programming, testing, modeling, network administration, computer security etc.
e. Ability to apply current technologies for the development of society.
f. Ability to enhance various soft skills like preparing a resume, interview preparation etc.
g. Ability to pursue higher studies in various postgraduate programs in Computer Science, or other related subjects.

SEMESTER-1		
Core-1 (DSC1AT+DSC1AP) **Problem Solving using Computers**	Computer Fundamentals Planning the Computer Program Techniques of Problem Solving Overview of Programming Introduction to Python Creating Python Programs Structures Introduction to Advanced Python	After completion of the course student will be able to: 1. Learn Basic about Computer. 2. Learn basic Characteristics of Computers, Types and generations of Computers. 3. Learn different units of a computer, CPU, ALU, memory hierarchy, registers, I/O devices. 4. Learn concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. 5. Learn about Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming. 6. Learn the structure of a Python Program, Elements of Python. 7. Learn about Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings etc. 8. Learn about Input and Output Statements, Control statements (Looping- while Loop, for Loop, Loop Control, Conditional Statement- if...else, Difference between break, continue and pass). 9. Learn about Numbers, Strings, Lists, Tuples, Dictionary, Date & Time, Modules, Defining Functions etc. 10. Learn about Objects and Classes, Inheritance, Regular Expressions,

		Event Driven Programming, GUI Programming.
	SEMESTER-2	
Core-4 (DSC1BT + DSC1BP) **Database Management System**	Introduction to Database Management System Entity Relationship and Enhanced ER Modeling Relational Data Model Database Design Programming related to DBMS using SQL	After completion of the course, student will be able to: 1. Learn about the characteristics of database approach, models, DBMS architecture and data independence. 2. Learn about Entity types, relationships, SQL, Schema Definition, Constraints and object modeling. 3. Learn about Basic concepts, relational constraints, relational algebra, SQL queries. 4. Learn about ER and EER to relational mapping, functional dependencies, normal forms upto third normal form. 5. Learn about Programming related to DBMS using SQL.
	SEMESTER-3	
Core-7 (DSC1CT + DSC1CP) **Operating system**	Introduction to Operating system Types of operating system Operating system organization Process management Scheduling Memory management Programs in Operating System	After completion of the course, student will be able to: 1. Learn about the System software, Resource Abstraction, OS strategies 2. Learn about Multiprogramming, Batch, Time sharing, Single user and multi user OS, Real time operating system 3. Learn about factors in operating system design, basic OS functions, Process modes, methods of requesting system services 4. Learn about system view of the process and resources, initiating the OS, Process address space, Process abstraction, Resource abstraction, Process hierarchy, Thread model. 5. Learn about Scheduling Mechanisms, Strategy selection, non-pre-emptive and pre-emptive strategies. 6. Learn about Mapping address space to memory space, memory allocation strategies, fixed partition, variable partition, Paging, Virtual memory. 7. Learn about various programs in Operating System.

	SEMESTER-4	
Core-10 (DSC1DT + DSC1DP) **Computer System Architecture**	Introduction to Computer System Architecture (Digital) Data representation and basic computer arithmetic Basic computer organization and design Central Processing Unit Programming the basic computer Input-output organization Programming in Computer System Architecture	After completion of the course, student will be able to: 1. Learn about the logic gates, Boolean algebra, combinational circuits, circuit simplification, flip-flops and sequential circuits, decoders, multiplexers, registers, counters and memory units. 2. Learn about Number systems, complements, fixed and floating-point representation, character representation, addition, subtraction, Magnitude Comparison. 3. Learn about computer registers, bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and interrupt. 4. Learn about Register organization, arithmetic and logical micro-operations, stack organization, micro programmed control. 5. Learn about Instruction formats, addressing modes, instruction codes, machine language, assembly language, input output programming. 6. Learn about Peripheral devices, I/O interface, modes of data transfer, Direct Memory Access. 7. Learn about Programming in Computer System Architecture.
	SEMESTER-5	
Decipline-1 (DSE 1AT+DSE1AP) **Computer Networks**	Basic concepts, Physical Layer, Data Link Layer, Network Layer, Transport Layer, Application Layer, Network Security	After completion of the course, student will be able to: 1. Understand the structure of Data Communications System and its components. Be familiarizing with different network terminologies. 2. Familiarize with contemporary issues in network technologies. 3. Know the layered model approach explained in OSI and TCP/IP network models 4. Identify different types of network devices and their functions within a network. 5. Learn basic routing mechanisms, IP addressing scheme and

		internetworking concepts. 6. Familiarize with IP and TCP Internet protocols. 7. To understand major concepts involved in design of WAN, LAN and wireless networks. 8. Learn basics of network configuration and maintenance. 9. Know the fundamentals of network security issues.
		SEMESTER-6
Decipline-1 (DSE 1BT+DSE1BP) **E-Commerce Technologies**	An introduction to Electronic commerce The Internet and WWW Internet Security Electronic Data Exchange Planning for Electronic Commerce Internet Marketing	After completion of the course, student will be able to: 1. Analyze the impact of E-commerce on business models and strategy. 2. Describe the major types of E-commerce. 3. Explain the process that should be followed in building an E-commerce presence. 4. Identify the key security threats in the E-commerce environment. 5. Describe how procurement and supply chains relate to B2B E-commerce.

B.SC. (GENERAL): SKILL ENHANCEMENT COURSE (SEC)

		SEMESTER-3
SEC1 (SEC1T + SEC1P) **MYSQL (SQL/PL-SQL)**	SQL Vs. SQL*Plus Managing Tables and Data Other Database Objects Transaction Control Statements Introduction to PL/SQL Programs in MYSQL using SQL/PL-SQL	After completion of the course, student will be able to: 1. Acquire knowledge and understanding of Database analysis and design. 2. Acquire the knowledge of the processes of Database Development and Administration using SQL and PL/SQL. 3. Enhance Programming and Software Engineering skills and techniques using SQL and PL/SQL. 4. Prepare background materials and documentation needed for Technical support using SQL and PL/SQL. 5. Use the Relational model and how it is supported by SQL and PL/SQL. 6. Use the PL/SQL code constructs of IF-THEN-ELSE and LOOP types as well as syntax and command functions. 7. Solve Database problems using

		Oracle 9i SQL and PL/SQL. This will include the use of Procedures, Functions, Packages, and Triggers.
		SEMESTER-4
SEC2 (SEC2T + SEC2P) **PHP Programming**	Introduction to PHP, Handling HTML form with PHP, PHP conditional events and Loops, PHP Functions, String Manipulation and Regular Expression, Array	After successful completion of this course students will be able to: 1. Write PHP scripts to handle HTML forms. 2. Write regular expressions including modifiers, operators, and meta characters. 3. Create PHP programs that use various PHP library functions, and that manipulate files and directories. 4. Analyze and solve various database tasks using the PHP language. 5. Analyze and solve common Web application tasks by writing PHP programs.