DEPARTMENT OF COMPUTER SCIENCE

Programme: B Sc. (Computer Science)

Statement of Programme Specific Outcomes (PSOs)

By the end of this course, the students will be able to:

1. Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.
2. Design, implements, test, and evaluate a computer system,
   Component or algorithm to meet desired needs and to solve a computational problem.
3. To Enhance skills and adapt new computing technologies
   for attaining professional excellence and carrying research

Statement of Course Outcomes (COs)

B.Sc.Course: SEM-I Paper -1(Programming in C)

By the end of this course, the students will be able to:

1. To illustrate the flowchart and design an algorithm for a given problem. They understand the basic concept of programming structure.
2. Students learnt the knowledge of fundamentals of writing C program which include data types, keywords, tokens, variables, and operators. Develop conditional and iterative statements to write C programs
3. **T**o solve user defined functions with real time problems
4. Students developed their concepts to write C program that uses Pointers, Arrays, and Strings.
5. Understand the knowledge of user defined data types that include structure and union to solve problems.
6. Students can write the programs which includes file concept to show input and output of files in C

B.Sc. Course: SEM-I Paper -2(Fundamentals of IT)

By the end of this course, the students will be able to:

1. Bridge the fundamental concepts of computers with the present level of knowledge of the students.
2. Familiarize operating systems, programming languages, peripheral devices, networking, multimedia and internet
3. Understand binary, hexadecimal and octal number systems and their arithmetic.
4. Understand how logic circuits and Boolean algebra forms as the basics of digital computer
5. Demonstrate the building up of Sequential and combinational logic from basic gate.

B.Sc.Course: SEM-II Paper -1(Object Oriented Programming Using 'C++')

By the end of this course, the students will be able to:

1. To understand the object oriented methodology which involves elements and features of object oriented programming.

2. Students developed the concept of class, object and structure of class which includes definition of class members and also they learned how to write the programs using class.
3. Students learnt the basic concept of constructor and destructor. Also they were able to overload the unary and binary operators using the concept of operator overloading.
4. Understand how to reuse code by implementing the OOPs Inheritance concept in C++. Also they got knowledge of dynamic objects.
5. Students were able to understand how inheritance and virtual functions implement dynamic binding with polymorphism.
6. Students learnt how to use exceptional handling in C++ programs

B.Sc. Course: SEM-II Paper -2(System Analysis and Design)

By the end of this course, the students will be able to:

1. Identify various types of information systems concepts and terminologies
2. Discuss the initial phase of system Development Life Cycle (SDLC) using analytical tools and quantitative technique used to identify problem
3. Define problem and opportunities that initiate projects
4. Evaluate information systems projects to identify various aspects of feasibility of these projects
5. Apply at least one specific methodology or tool for analyzing business situation by modeling using a formal technique

B.Sc. Course: SEM-III Paper -1(Data Structures)

By the end of this course, the students will be able to:

1. Analyze run-time execution of previous learned sorting methods, including selection, merge sort, heap sort and Quick sort and also calculate the complexity of all sorting and searching methods.
2. Select appropriate data structures as applied to specified problem definition.
3. Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures and design applications based on it.
4. Students will be able to implement Linear and Non-Linear data structures.
5. Implement appropriate sorting/searching technique for given problem of real time system.
6. Design and implementation of advance data structure using Linear and Non Linear data structure.
7. **Determine and analyze the complexity of given** Algorithms.

B.Sc. Course: SEM-III Paper -2(Operating systems)

By the end of this course, the students will be able to:

1. Describe and explain the fundamental components of a computer operating system
2. Measure, evaluate, and compare OS components through instrumentation for performance analysis
3. Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.
4. Describe and extrapolate the interactions among the various components of computing systems.
5. Design and construct the following OS components: System calls, Schedulers, Memory management systems, Virtual Memory and Paging systems.

B.Sc. Course: SEM-IV Paper -1(Java Programming)

By the end of this course, the students will be able to:

1. **K**nowledge of the structure and model of the java programming language
2. Use the java programming language for various programming technologies
3. **Develop software in java programming language.**
4. Evaluate user requirement for software functionality required to decide whether java programming language can meet user requirements
5. Propose the use of certain technologies by implementing them in the java programming language to solve the given problem

B.Sc. Course: SEM-IV Paper -2 (Linux Operating System)

By the end of this course, the students will be able to:

1. Select appropriate Linux operating system commands to make the effective use of the environment to solve problems
2. **Write efficient, effective scripts with documentation**
3. Understanding the basic set of Communication utilities commands and other commands which are used in Linux systems.
4. Design an applications using Vi Editor which is provided to the user by Linux and it would also help to manage the system related commands.
5. To learn Graphical user Interfaces like KDE and GNOME. .
6. How to provide security to the data by using user authentication and authorization commands like managing user account ,providing user name and password and grant the user

B.Sc. Course: SEM-V Paper -1 (Visual Basic Programming)

By the end of this course, the students will be able to:

1. Demonstrate knowledge of programming terminology and how applied using Visual Basic (e.g., variables, selection statements, repetition statements, etc.)
2. Develop a Graphical User Interface (GUI) based on problem description.
3. Develop and debug applications using Visual Basic 6.0 (or version required for the course) that runs under Windows operating system.

4. Develop the programs which are based on events that retrieve input from a file as opposed to input only provided by user.
5. Design and Implement Visual Basic applications using Different Menus (Menu Editor).

B.Sc. Course: SEM-V Paper -2 (Database Management System)

By the end of this course, the students will be able to:

1. Students learnt the fundamental elements of traditional file processing system, objective of database system.
2. Students learnt the basic concept of different data models which includes Hierarchical, Network, and E-R and Relational model.
3. Students are able Design E-R model to represent simple database application
4. Students developed the concept of how to convert E-R model into relational tables and how to perform relational operation on tables through relational algebra.
5. Students developed the concept of functional dependency and improve the database design by the concept of Normalization.

B.Sc. Course: SEM-VI Paper -1 (Compiler Construction)

By the end of this course, the students will be able to:

1. Students learnt the major concept areas of language translation and compiler design
2. Students got an awareness of the function and complexity of compilers.
3. Students were able to understand the role of Lexical analyzer, its design, and implementation. Students got knowledge of context free grammars, Derivation and parse trees.
4. Students are able to identify the similarities and differences among various parsing techniques and grammar transformation techniques

B.Sc. Course: SEM-VI Paper -2 (SQL and PL/SQL)

By the end of this course, the students will be able to:

1. Understand the basics of SQL and construct queries using PI/SQL efficiently and apply features for creating database applications.
2. Compare and Contrast SQL databases with each other and Relational Database Systems
3. Understand the concept of integrity constraints and value constraints to reduced redundancy of data occurs in database applications.
4. Students are able to learn the concepts like functions, triggers and stored procedure.
5. Compare SQL with PL/SQL and integrate the concept of procedural language with SQL to build advance applications.