M.Sc. COMPUTER SCIENCE

PROGRAMME OUTCOME

The course of the M.Sc. Computer Science programme is designed with the following outcomes:

- To equip students to take up challenging research oriented responsibilities and courses for their higher studies/profession.
- To train and equip the students to meet the requirements of the Software industry in the country and outside.
- To motivate and support the students to prepare and qualify challenging competitive examinations such as JRF/NET/JAM/GATE etc.

COURSE OUTCOMES

SEMESTER - I

CSS1C01-DISCRETE MATHEMATICAL STRUCTURES

- To introduce discrete mathematics concepts necessary to understand basic foundation of Computer Science.

CSS1C02 - ADVANCED DATASTRUCTURES

- To introduce basic and advanced data structures dealing with algorithm development and problem solving.

CSS1C03 - THEORY OF COMPUTATION

- To provide the students with an understanding of basic concepts in the theory of computation.

CSS1C04 - THE ART OF PROGRAMMING METHODOLOGY

- To learn the art of designing algorithms and flowcharts.
- To introduce the concept of algorithmic approach for solving real-life problems.
- To develop competencies for the design and coding of computer programs.
- To learn designing programs with advanced features of C.

CSS1C05-COMPUTERORGANIZATION&ARCHITECTURE

- To familiarize with the digital fundamentals, computer organization, computer architecture and assembly language programming.

CSS1P06 - PRACTICAL I

- To practically implement the theory portions covered in The Art of Programming Methodology (CSS1C04) and Advanced Data Structures (CSS1C02).

SEMESTER II

CSS2C01-DESIGN AND ANALYSIS OF ALGORITHMS

- To introduce the concept of algorithmic approach for solving real-life problems.
- To teach basic principles and techniques of computational complexity.
- To familiarize with parallel algorithms and related techniques.

CSS2C02-OPERATING SYSTEM CONCEPTS

- Introduce the underlying principles of an operating system
- Exposure of multi programming, virtual memory and resource management concepts.
- Case study of public and commercially available operating systems.

CSS2C03-COMPUTER NETWORKS

- To provide the student with a top down approach of networking starting from the application layer.
- To introduce computer networking in the back drop of Internet protocol stack.

CSS2C04-COMPUTATIONAL INTELLIGENCE

- To introduce concepts of Artificial Intelligence and Machine Learning.

CSS2P06-PRACTICAL II

- To practically implement the theory portions covered in Operating System Concepts (CSS2C02) and Computer Networks (CSS2C03).
- To extend the programming knowledge acquired thru The Art of Programming Methodology (CSS1C04).

CSS2P07-TERM PAPER

- To introduce the student to the techniques of literature survey.
- To acquaint him/her with the process of presenting his/her work through seminars and technical reports.

CSS2E05c-WEB TECHNOLOGY

- To introduce the tools for creating and maintaining websites – content development (HTML), client side scripting (JavaScript), web server (Apache), server side scripting (PHP) and content management system (Joomla!).

SEMESTER III

CSS3C01-ADVANCED DATABASE MANAGEMENT SYSTEM

- To understand the relational model, and know how to translate requirements captured in an Entity-Relationship diagram into a relational schema.
- To reason about dependencies in a relational schema.
- To understand normal form schemas, and the decomposition process by which normal forms are obtained.
- To familiarize with advanced SQL statements
- To understand advanced features of database technologies.

CSS3C02-PRINCIPLES OF COMPILERS

- To introduce the fundamental concepts and various phases of compiler design.

CSS3C03-OBJECT ORIENTED PROGRAMMING CONCEPTS

- To learn object oriented concepts and programming concepts and methodologies and to learn its implementation using Java.

CSS3P06-PRACTICAL III

- To practically implement the theoretical aspects covered in Advanced Database Management System (CSS3C01) and Object Oriented Programming Concepts (CSS3C03).
- To extend the programming knowledge acquired through The Art of Programming Methodology (CSS1C04) to encompass object oriented techniques.

CSS3E04f-DATA WAREHOUSING AND DATA MINING

- To provide the fundamentals on information retrieval and data mining techniques
- To focus on practical algorithms of textual document indexing, relevance ranking, web usage mining, text analytics, as well as their performance evaluations.
- To give an exposure to the fundamentals of Data Analytics.

CSS3E05c-SYSTEM SECURITY

- To provide an understanding of the differences between various forms of computer security, where they arise, and appropriate tools to achieve them.

SEMESTER IV

CSS4C01–PRINCIPLES OF SOFTWARE ENGINEERING

- To develop familiarity with software engineering principles and practices.
- To have an understanding about the process of product/literature survey, techniques of problem definition, and methods of report writing.

CSS4C02-PROJECT WORK

- To give a practical exposure to the process of software development life cycle
- To develop a quality software solution by following the software engineering principles and practices. Students are also encouraged to take up a research oriented work to formulate a research problem and produce results based on its implementation/simulation/experimental analysis.

CSS4E01B-ADVANCED TOPICS IN DATABASE DESIGN

- To study the advanced database techniques beyond the fundamental database techniques.