Course Outcome

MSc Computer Science

Course No	Course Title	Course Outcome
1.	Discrete Mathematical Structures	 Introduction discrete mathematics concepts necessary to understand basic foundation of Computer Science Develop skills for Formal reasoning Knowledge regarding use of discrete mathematics in Computer Science
2.	Advanced Data Structures	 Familiarize basic and advanced data structures dealing with algorithm development and problem solving
3.	Theory of Computation	 Basic concepts in the theory of computation. Understand the basic concepts of different languages, grammar, automata Basic awareness on compilation process
4.	The Art of Programming Methodology	 Learn the art of designing algorithms and flowcharts. Introduction to the concept of algorithmic approach for solving real-life problems. Developing competencies for the design and coding of computer programs. Learn designing programs with advanced features of C.
5.	Computer Organization and Architecture	• Familiarize with the digital fundamentals, computer organization, computer architecture and assembly language programming.
6.	Practical I	 Develop programming skills using C Learn how to implement various

		data structures in C
7.	Design and Analysis of Algorithms	 Introduction to the concept of algorithmic approach for solving real-life problems Learn basic principles and techniques of computational complexity. Familiarize with parallel algorithms and related techniques
8.	Operating System Concepts	 Introduction to 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.
9.	Computer Networks	 Providing a top down approach of networking starting from the application layer Introduction to computer networking in the back drop of Internet protocol stack.
10.	Computational Intelligence	• Introduction to concepts of Artificial Intelligence and Machine Learning.
11.	Computer Graphics	 Understand the fundamentals of computer graphics. Familiarize with 2D and 3D objects.
12.	Introduction to Soft Computing	 Acquire basic knowledge of soft computing theories. Understand the fundamental concepts of neural networks and fuzzy sets.
13.	Web Technology	 Acquaint skills to develop and maintain websites using JavaScript and HTML. Understand the concepts of client side and server side scripting.
14.	Bioinformatics	 Get awareness about the basic principle of computational biology. Knowledge about advanced concepts of bioinformatics.

15.	Computer Optimization Techniques	 Understand importance of optimization techniques in industries like IT. Acquire knowledge about various modeling techniques, numerical methods and algorithms.
16.	Numerical and Statistical Methods	• Learn basic concepts of statistics and probability that can be applied for mathematical modeling of computer applications.
17.	Practical II	 Practical knowledge of computer networking such as client server implementation using different protocols, implementation of different protocols using C programming Implementing basic concepts and functions of Operating system using C programming
18.	Term Paper 1	 Introducing the student to the techniques of literature survey. Acquaint him/her with the process of presenting his/her work through seminars and technical reports. Introduction to the area of Research
19.	Advanced Database Management System	• Understand advanced features of database technologies.
20.	Principles of Compilers	Acquire knowledge about fundamental concepts and various phases of compiler design.
21.	Object Oriented Programming Concepts	 Learn fundamental concepts of object oriented programming Implement OOPS concept using Java.
22.	Pattern Recognition	 Understand the concept of a pattern and basic approach to the development of pattern recognition algorithms. Learn different classification methods to detect and characterize patterns in real-world data.

23.	Wireless and Mobile Networks	 Familiarize with wireless application Protocols to develop mobile applications. Understand about the security aspects of wireless networks
24.	Cryptography and Network Security	 Understand computer security concepts and the various encryption and decryption techniques to solve security related problems. Apply the knowledge of cryptographic methods and authentication mechanisms to design a secure system.
25.	Advanced Web Technology	• Understand the concepts of various web development tools – Web 2.0, Web Services, Python, SQLite and MVC architecture.
26.	Virtualization and Cloud Computing	• Recognize the importance of virtualization and cloud computing technologies along with its technical capabilities and business benefits.
27.	Data Warehousing and Data Mining	 Acquire fundamental knowledge about data mining techniques. Understand various data mining methods like classification and clustering.
28.	Data Compression	 Implement various compression techniques to compress raw data. Understand various compression methods used in image, audio and video compression.
29.	Pervasive Computing	 Acquire a conceptual knowledge in the area of pervasive computing. Conceptualize and analyze various classes of pervasive computing systems.
30.	System Security	 Analyze the differences between different forms of computer securities Understanding various tools to
31	Molecular Simulation	achieve security.
51.	wolecular Simulation	Understand application of simulation

	and Modeling	 techniques to study molecular dynamics Apply the statistical approaches and models for phylogeneticanalysis and tree reconstruction. Understand the nature of protein- protein interactions and docking simulations.
32.	Fundamentals of Big Data	 Understand the basics and importance of big data. Acquaint skills to use frameworks like NoSQL, Hadoop to efficiently store, retrieve and process Big Data.
33.	Web Engineering	 Understand the concepts and principles of web application development. Learn various strategies and methodologies for modeling web applications.
34.	Practical III	Practical implementation of ADBMS and OOPs concepts
35.	Digital Image Processing	• Acquire knowledge about image processing, pattern recognition and their applications.
36.	Advanced Topics in Database Design	• Learn advanced database techniques.
37.	Software Development for Portable Devices	 Analyze and evaluate the differences between architecture and other specialized topics on mobile and non-mobile platforms. Familiarize with Android platform. Learn various security issues in mobile platforms and mechanisms to ensure safety.
38.	Storage Area Networks	 Learn the fundamentals of SAN Understand SAN architecture and analyze different SAN management strategies.
39.	Semantic Web	 Understand the basics of semantic web technology. Understand the principles of ontology learning and management. Apply semantic web technologies to real world applications.
40.	Advanced Java Programming	Learn advanced features of Java Programming Language.

		• Acquire skills to develop web based applications.
41.	Principles of Software Engineering	 Familiarize with the concept and relevance of software engineering. Understand various models for developing a software products.
42.	Project Work (Duration of the Project = 16 Weeks)	 Practical exposure to the process of software development life cycle. Develop a quality software solution by following the software engineering principles and practices. Encouragement to take up a research oriented work to formulate a research problem and produce results based on its implementation/simulation/experimen tal analysis