Course Code MTCS101-18
Course Name Mathematical Foundation of Computer Science

COURSE OBJECTIVE

To understand the basic notions of discrete and continuous probability.

⬚ To understand the methods of statistical inference, and the role that sampling distributions play in

those methods.

⬚ To be able to perform correct and meaningful statistical analyses of simple to moderate complexity.

Course Code MTCS102-18
Course Name Advanced Data Structures

  Understand the implementation of symbol table using hashing techniques.
 · Develop and analyze algorithms for red-black trees, B-trees and Splay trees.
 · Develop algorithms for text processing applications.
 · Identify suitable data structures and develop algorithms for computational geometry problems.

Course Code MTCS201-18
Course Name Advanced Algorithms

Analyze the complexity/performance of different algorithms.
 · Determine the appropriate data structure for solving a particular set of problems.
 · Categorize the different problems in various classes according to their complexity.
 · Students should have an insight of recent activities in the field of the advanced data structure.

Research Methodology and IPR
Course Code: MTRM-101-18, Credits :2

Understand research problem formulation.
 · Analyze research related information
 · Follow research ethics
 · Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
 · Understanding that when IPR would take such important place in growth of individuals & nation, it

is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.

· Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.

Course Code MTCS202-18
Course Name Soft Computing

Identify and describe soft computing techniques and their roles in building intelligent machines

· Apply fuzzy logic and reasoning to handle uncertainty and solve various engineering problems.

· Apply genetic algorithms to combinatorial optimization problems.

· Evaluate and compare solutions by various soft computing approaches for a given problem.

Course Code MTCS 105-18
Course Name Machine learning

Extract features that can be used for a particular machine learning approach in various IOT applications.

· To compare and contrast pros and cons of various machine learning techniques and to get an insight of when to apply a particular machine learning approach.

· To mathematically analyse various machine learning approaches and paradigms.

Course Code MTCS106-18
Course Name Wireless Sensor Networks

Describe and explain radio standards and communication protocols for wireless sensor networks.

· Explain the function of the node architecture and use of sensors for various applications.

· Be familiar with architectures, functions and performance of wireless sensor networks systems and platforms.

Course Code MTCS107-18
Course Name Introduction to Intelligent Systems

Able to demonstrate knowledge of the fundamental principles of intelligent systems and would be able to analyses and compare the relative merits of a variety of AI problem solving techniques.

Course Code MTCS108-18
Course Name Data Science

Explain how data is collected, managed and stored for data science;

· Understand the key concepts in data science, including their real-world applications and the toolkit used by data scientists;

· Implement data collection and management scripts using MongoDB

Course Code MTCS109-18
Course Name Distributed Systems

Design trends in distributed systems.

· Apply network virtualization.

· Apply remote method invocation and objects.

Course Code MTCS110-18
Course Name Advanced Wireless and Mobile Networks

Demonstrate advanced knowledge of networking and wireless networking and understand various types of wireless networks, standards, operations and use cases.

· Be able to design WLAN, WPAN, WWAN, Cellular based upon underlying propagation and performance
analysis.

· Demonstrate knowledge of protocols used in wireless networks and learn simulating wireless networks.

· Design wireless networks exploring trade-offs between wire line and wireless links.

· Develop mobile applications to solve some of the real world problems.

Course Code MTCS206-18
Course Name Data Preparation and Analysis

Able to extract the data for performing the Analysis.

Course Code MTCS207-18
Course Name Secure Software Design and Enterprise Computing

Differentiate between various software vulnerabilities.

· Software process vulnerabilities for an organization.

· Monitor resources consumption in a software.

· Interrelate security and software development process.

Course Code MTCS208-18
Course Name Computer Vision

Developed the practical skills necessary to build computer vision applications.

· To have gained exposure to object and scene recognition and categorization from images.

Course Code MTCS209-18
Course Name Human and Computer Interaction

Understand the structure of models and theries of human computer interaction and vision.\

· Design an interactive web interface on the basis of models studied.

Course Code MTCS210-18
Course Name GPU Computing

Students would learn concepts in parallel programming, implementation of programs on GPUs, debugging and profiling parallel programs.