DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAMME: M.E. COMPUTER SCIENCE AND ENGINEERING

VISION

❖ To cultivate creative and disciplined computing professionals with the spirit of benchmarking educational system.

MISSION

❖ To provide academic environment for the development of skilled professionals with adequate knowledge in computer science.

❖ To cultivate research culture that contributes sustainable development of thesociety.

❖ To enhance academic collaboration for entrepreneurship development.

PROGRAM E DUCATIONAL OBJECTIVES (PEOs)

❖ Develop proficiency as a computer science engineer with an ability to solve a wide range of computational problems and have sustainable development in industry or any other work environment.

❖ Analyze and adapt quickly to new environments and technologies, gather new information, and work on emerging technologies to solve multidisciplinary engineering problems.

❖ Possess the ability to think analytically and logically to understand technical problems with computational systems for a lifelong learning which leads to pursuing research.

❖ Adopt ethical practices to collaborate with team members and team leaders to build technology with cutting-edge technical solutions for computing systems

❖ Strongly focus on design thinking and critical analysis to create innovative products and become entrepreneurs.

PROGRAM OUTCOMES (POs)

❖ Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering

problems.

❖ Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

❖ Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

❖ Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

❖ Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

❖ The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

❖ Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

❖ Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

❖ Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

❖ Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

❖ Project management and finance: Demonstrate knowledge and understanding of the

engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

❖ Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

❖ To use mathematical, algorithmic and theoretical foundations in the study of computing systems.

❖ To acquire in-depth knowledge and skills in core and emerging technologies of Computer Science and Engineering.

❖ To develop and apply innovative solutions to real world problems using appropriate research techniques.

COURSE OUTCOMES (COs)

Regulation	2017
Sem	01
Subject Code	MA4151
Subject Name	Applied Probability and Statisticsfor Computer Science Engineers
Course Outcome	- Apply the concepts of Linear Algebra to solve practical problems. - Use the ideas of probability and random variables in solving engineering problems. - Be familiar with some of the commonly encountered two dimensional random variables andbe equipped for a possible extension to multivariate analysis. - Use statistical tests in testing hypotheses on data.

Regulation	2017
Sem	01
Subject Code	CP4151
Subject Name	**Advanced Data Structures And Algorithms**
Course Outcome	- Design data structures and algorithms to solve computing problems. - Choose and implement efficient data structures and apply them to solve problems. - Design algorithms using graph structure and various string-matching algorithms to solve real-life problems. - Design one's own algorithm for an unknown problem. - Apply suitable design strategy for problem solving.

Regulation	2017
Sem	01
Subject Code	CP4152
Subject Name	Database Practices

Course Outcome	• Convert the ER-model to relational tables, populate relational databases and formulate SQLqueries on data.
	• Understand and write well-formed XML documents
	• Be able to apply methods and techniques for distributed query processing.
	• Design and Implement secure database systems.
	• Use the data control, definition, and manipulation languages of the NoSQL databases

Regulation	2017
Sem	01
Subject Code	CP4153
Subject Name	Network Technologies
Course Outcome	• Explain basic networking concepts
	• Compare different wireless networking protocols
	• Describe the developments in each generation of mobile data networks
	• Explain and develop SDN based applications
	• Explain the concepts of network function virtualization

Regulation	2017
Sem	01

Subject Code	CP4154
Subject Name	Principles Of Programming Languages
Course Outcome	- Describe syntax and semantics of programming languages - Explain data, data types, and basic statements of programming languages - Design and implement subprogram constructs - Apply object-oriented, concurrency, and event handling programming constructs - Develop programs in Scheme, ML, and Prolog and Understand and adopt newprogramming language

Regulation	2017
Sem	01
Subject Code	CP4161
Subject Name	Advanced Data Structures And Algorithms Laboratory
Course Outcome	- Design and implement basic and advanced data structures extensively - Design algorithms using graph structures - Design and develop efficient algorithms with minimum complexity using designtechniques - Develop programs using various algorithms. - Choose appropriate data structures and algorithms, understand the ADT/libraries,and use it to design algorithms for a specific problem

Regulation	2017

Sem	02
Subject Code	CP4291
Subject Name	Internet Of Things
Course Outcome	• Understand the various concept of the IoT and their technologies • Develop the IoT application using different hardware platforms • Implement the various IoT Protocols • Understand the basic principles of cloud computing • Develop and deploy the IoT application into cloud environment

Regulation	2017
Sem	02
Subject Code	CP4292
Subject Name	Multicore Architecture And Programming
Course Outcome	• Describe multicore architectures and identify their characteristics and challenges. • Identify the issues in programming Parallel Processors. • Write programs using OpenMP and MPI. • Design parallel programming solutions to common problems. • Compare and contrast programming for serial processors and programming for parallelprocessors.

Regulation	2017
Sem	02
Subject Code	CP4252
Subject Name	Machine Learning
Course Outcome	- Understand and outline problems for each type of machine learning - Design a Decision tree and Random forest for an application - Implement Probabilistic Discriminative and Generative algorithms for an application andanalyze the results. - Use a tool to implement typical Clustering algorithms for different types of applications. - Design and implement an HMM for a Sequence Model type of application and identifyapplications suitable for different types of Machine Learning with suitable justification

Regulation	2017	
Sem	02	PROFESSIONAL ELECTIVE-I
Subject Code	MP4251	
Subject Name	Cloud Computing Technologies	
Course Outcome	- Employ the concepts of virtualization in the cloud computing - Identify the architecture, infrastructure and delivery models of cloud computing - Develop the Cloud Application in AWS platform - Apply the concepts of Windows Azure to design Cloud Application - Develop services using various Cloud computing programming models	

Regulation	2017	
Sem	02	PROFESSIONAL ELECTIVE-II
Subject Code	BD4251	
Subject Name	Big Data Mining And Analytics	
Course Outcome	• Design algorithms by employing Map Reduce technique for solving Big Data problems. • Design algorithms for Big Data by deciding on the apt Features set . • Design algorithms for handling petabytes of datasets • Design algorithms and propose solutions for Big Data by optimizing main memoryconsumption • Design solutions for problems in Big Data by suggesting appropriate clustering techniques.	

Regulation	2017
Sem	02
Subject Code	CP4212
Subject Name	Software Engineering Laboratory
Course Outcome	• Understand how to leverage the insights from big data analytics • Analyze data by utilizing various statistical and data mining approaches • Perform analytics on real-time streaming data • Understand the various NoSql alternative database models