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.

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	MA5160
Subject Name	Applied Probability And Statistics
Course Outcome	• Basic probability axioms and rules and the moments of discrete and continuous randomvariables. • Consistency, efficiency and unbiasedness of estimators, method of maximum likelihoodestimation and Central Limit Theorem. • Use statistical tests in testing hypotheses on data. • Perform exploratory analysis of multivariate data, such as multivariate normal density,calculating descriptive statistics, testing for multivariate normality.

Regulation	2017
Sem	01
Subject Code	CP5151
Subject Name	Advanced Data Structures And Algorithms

Course Outcome	• Design data structures and algorithms to solve computing problems • Design algorithms using graph structure and various string matching algorithms to solvereal-life problems • Apply suitable design strategy for problem solving

Regulation	2017
Sem	01
Subject Code	CP5152
Subject Name	Advanced Computer Architecture
Course Outcome	• Identify the limitations of ILP. • Discuss the issues related to multiprocessing and suggest solutions • Point out the salient features of different multicourse architectures and how they exploitparallelism. • Discuss the various techniques used for optimizing the cache performance • Design hierarchal memory system • Point out how data level parallelism is exploited in architectures

Regulation	2017
Sem	01
Subject Code	CP5153
Subject Name	Operating System Internals
Course Outcome	• To explain the functionality of a large software system by reading its source. • To revise any algorithm present in a system. • To design a new algorithm to replace an existing one.

	the Linux kernel for a differentsoftware system.

Regulation	2017
Sem	01
Subject Code	CP5154
Subject Name	Advanced Software Engineering
Course Outcome	• Understand the advantages of various Software Development Lifecycle Models • Gain knowledge on project management approaches as well as cost and scheduleestimation strategies • Perform formal analysis on specifications • Use UML diagrams for analysis and design • Architect and design using architectural styles and design patterns • Understand software testing approaches • Understand the advantages of DevOps practices

Regulation	2017
Sem	01
Subject Code	CP5191
Subject Name	Machine Learning Techniques
Course Outcome	• Distinguish between, supervised, unsupervised and semi-supervised learning • Apply the appropriate machine learning strategy for any given

	• Suggest supervised, unsupervised or semi-supervised learning algorithms for any givenproblem • Design systems that uses the appropriate graph models of machine learning Modify existing machine learning algorithms to improve classification efficiency

Regulation	2017
Sem	01
Subject Code	CP5161
Subject Name	Data Structures 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 design techniques.

Regulation	2017	
Sem	02	PROFESSIONAL ELECTIVE-II
Subject Code	CP5072	
Subject Name	Software Architectures And Design	

Course Outcome	• Understand the need of software architecture for sustainable dynamic systems. • Have a sound knowledge on design principles and to apply for large scale systems • Design architectures for distributed heterogeneous systems • Have good knowledge on service oriented and model driven architectures and theaspect oriented architecture. • Have a working knowledge to develop appropriate architectures through varioucase studies.

Regulation	2017
Sem	02
Subject Code	CP5201
Subject Name	Network Design And Technologies
Course Outcome	• Identify the components required for designing a network • Design a network at a high-level using different networking technologies • Analyze the various protocols of wireless and cellular networks • Discuss the features of 4G and 5G networks • Experiment with software defined networks

Regulation	2017
Sem	02
Subject Code	CP5291
Subject Name	Security Practices

Course Outcome	• Understand the core fundamentals of system security • Apply the security concepts related to networks in wired and wireless scenario • Implement and Manage the security essentials in IT Sector • Able to explain the concepts of Cyber Security and encryption Concepts • Able to attain a thorough knowledge in the area of Privacy and Storage security andrelated Issues.

Regulation	2017
Sem	02
Subject Code	CP5292
Subject Name	Internet Of Things
Course Outcome	• Analyze various protocols for IoT • Develop web services to access/control IoT devices. • Design a portable IoT using Rasperry Pi • Deploy an IoT application and connect to the cloud. • Analyze applications of IoT in real time scenario

Regulation	2017
Sem	02
Subject Code	CP5293
Subject Name	Big Data Analytics

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

Regulation	2017	
Sem	02	PROFESSIONAL ELECTIVE-I
Subject Code	CP5092	
Subject Name	Cloud Computing Technologies	
Course Outcome	• Employ the concepts of storage virtualization, network virtualization and its management • Apply the concept of virtualization in the cloud computing • Identify the architecture, infrastructure and delivery models of cloud computing • Develop services using Cloud computing • Apply the security models in the cloud environment	

Regulation	2017	
Sem	03	PROFESSIONAL ELECTIVE-III
Subject Code	CP5095	
Subject Name	Computer Vision	
Course Outcome	• Implement fundamental image processing techniques required for computer vision. • Perform shape analysis. • Implement boundary tracking techniques. • Apply chain codes and other region descriptors. • Apply Hough Transform for line, circle, and ellipse detections. • Apply 3D vision techniques.	

Regulation	2017
Sem	02
Subject Code	CP5261
Subject Name	Data Analytics Laboratory
Course Outcome	• Process big data using Hadoop framework • Build and apply linear and logistic regression models • Perform data analysis with machine learning methods • Perform graphical data analysis

Regulation	2017	
Sem	03	PROFESSIONAL ELECTIVE-IV
Subject Code	CP5074	
Subject Name	Social Network Analysis	
Course Outcome	• Work on the internals components of the social network • Model and visualize the social network • Mine the behavior of the users in the social network • Predict the possible next outcome of the social network • Apply social network in real time applications	

Regulation	2017	
Sem	03	PROFESSIONAL ELECTIVE-V

Subject Code	CP5009
Subject Name	Data Visualization Techniques
Course Outcome	• Explain principles of visual perception • Apply core skills for visual analysis • Apply visualization techniques for various data analysis tasks • Design information dashboard

Regulation	2017	
Sem	03	PROFESSIONAL ELECTIVE-V
Sub Code	CP5076	
Sub Name	Information Storage Management	
Course Outcome	• Select from various storage technologies to suit for required application. • Apply security measures to safeguard storage & farm. • Analyze QoS on Storage.	