

UG – Computer Science & Engineering

Program educational Objectives (PEO)

PEO 1	To prepare students for successful careers in Industry, Research and Institutions of higher learning
PEO 2	To encourage students to work in teams to address industrial and socially relevant problems / projects.
PEO 3	To provide students with a sound mathematical, scientific and engineering fundamentals necessary to formulate, analyze and solve engineering problems.
PEO 4	To promote student awareness and commitment to lifelong learning and professional ethics during the course of professional practice.

PROGRAMME OUTCOMES (POs) and Programme Specific Outcomes (PSOs)

Outcomes are the skills and knowledge which the students have at the time of graduation. This will indicate what student **can do** from subject-wise knowledge acquired during the programme.

PO	Short Title of the PO	Description of the Programme Outcome (PO) Engineering Graduates will be able to:
PO-1	Engineering knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO-2	Problem analysis	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO-3	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.
PO-4	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.
PO-5	Modern tool usage	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6	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.
PO-7	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.
PO-8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO-9	Individual and team work:	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO-10	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.
PO-11	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.
PO-12	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) defined by the programme. Baseline- Rational Unified Process (RUP)		
PO-13	System Inception and Elaboration	Conceptualize the software and/or hardware systems, system components and process/procedures through requirement analysis, modeling /design of the system using various architectural / design patterns , standard notations, procedures and algorithms.
PO-14	System Construction	Implement the systems, procedures and processes using the state of the art technologies, standards, tools and programming paradigms .
PO-15	System Testing and Deployment	Verify and validate the systems, procedures and processes using various testing and verification techniques and tools .
PO-16	System Quality and Maintenance	Manage the quality through various product development strategies under revision, transition and operation through maintainability, flexibility, testability, portability, reusability, interoperability, correctness, reliability, efficiency, integrity and usability to adapt the system to the changing structure and behavior of the systems /environments

PG – Computer Science & Engineering

Scheme-2016

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Programme Outcomes (POs):

PO 1	Scholarship of Knowledge: Acquire in-depth knowledge of specific discipline or professional area, including wider and global perspective, with an ability to discriminate, evaluate, analyse and synthesize existing and new knowledge, and integration of the same for enhancement of knowledge.
PO 2	Critical Thinking: Analyze complex engineering problems critically, apply independent judgement for synthesizing information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.
PO 3	Problem Solving: Think laterally and originally, conceptualize and solve engineering problems, evaluate a wide range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal and environmental factors in the core areas of expertise.
PO 4	Research Skill: Extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyze and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains of engineering.
PO 5	Usage of modern tools: Create, select, learn and apply appropriate techniques, resources, and modern engineering and IT tools, including

	prediction and modeling, to complex engineering activities with an understanding of the limitations.
PO 6	Collaborative and Multidisciplinary work: Possess knowledge and understanding of group dynamics, recognise opportunities and contribute positively to collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis in order to achieve common goals and further the learning of themselves as well as others.
PO 7	Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply the same to one's own work, as a member and leader in a team, manage projects efficiently in respective disciplines and multidisciplinary environments after consideration of economic and financial factors.
PO 8	Communication: Communicate with the engineering community, and with society at large, regarding complex engineering activities confidently and effectively, such as, being able to comprehend and write effective reports and design documentation by adhering to appropriate standards, make effective presentations, and give and receive clear instructions.
PO 9	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.
PO 10	Ethical Practices and Social Responsibility: Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
PO 11	Independent and Reflective Learning: Observe and examine critically the outcomes of one's actions and make corrective measures subsequently, and learn from mistakes without depending on external feedback.

Scheme-2018

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO 1	Contribute to the profession as an excellent employee or as an entrepreneur.
PEO 2	Enhance their knowledge informally or by pursuing research work leading to new innovations and products.
PEO 3	Work effectively in heterogeneous environment and be responsible member and leader of their communities.
PEO 4	Contribute positively to the needs of individuals and society at large by understanding the human, social and environmental context of their profession.

Programme Outcomes (POs):

PO 1	Independently carry out research / investigation and development work to solve practical problems.
PO 2	Write and present substantial technical reports and documents.
PO 3	Demonstrate a degree of mastery over the current knowledge and technological trends in the field of Computer Science & Engineering.
PO 4	Demonstrate the knowledge and understanding of the Computer Science & Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage a project in a multidisciplinary environment in terms of identifying requirements, conceptualizing the new and innovate system, modelling and designing the system / process, transforming the system model to working system and verify and validate the correctness of the system.
PO 5	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practices.
PO 6	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the context of technological change.

