

## **DEPARTMENT OF CIVIL ENGINEERING**

### **PROGRAM EDUCATIONAL OBJECTIVES**

After few years of graduation, the graduates of B.Tech (CE) will be able to:

- PEO1.** Pursue higher education in civil engineering or other fields of engineering or management or other areas of interest.
- PEO2.** Address the contemporary issues in Civil Engineering or related field and provide appropriate solutions through professional career in industry/teaching/research.
- PEO3.** Engage in 'technology innovation and deployment' and engineering system implementation, as an entrepreneur.
- PEO4.** Exhibit leadership qualities, participate in continuing education programmes for lifelong learning and contribute individually and as a member in multidisciplinary teams to meet social and ethical constraints.

## **DEPARTMENT OF CIVIL ENGINEERING**

### **PROGRAM OUTCOMES**

On successful completion of the Program, the graduates of B.Tech. (CE) program will be able to:

- PO1. Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. **(Engineering Knowledge)**
- PO2. Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. **(Problem Analysis)**
- PO3. 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. **(Design/Development of Solutions)**
- PO4. 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. **(Conduct Investigations of Complex Problems)**
- PO5. 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. **(Modern Tool Usage)**
- PO6. 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. **(The Engineer and Society)**
- PO7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. **(Environment and Sustainability)**
- PO8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. **(Ethics)**
- PO9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. **(Individual and Team Work)**
- PO10. 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. **(Communication)**
- PO11. 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. **(Project Management and Finance)**
- PO12. 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. **(Life-long Learning)**

## **DEPARTMENT OF CIVIL ENGINEERING**

### **PROGRAM SPECIFIC OUTCOMES**

On successful completion of the Program, the graduates of B.Tech. (CE) program will be able to:

- PSO1.** Plan, draw, analyze, design, construct, evaluate, manage, maintain, retrofit and rehabilitate civil engineering systems and processes by applying suitable materials, tools and techniques.
- PSO2.** Identify minerals, rocks, structural geology problems and understand geological maps; characterize soil; choose foundations; select ground improvement techniques; and plan and design transport systems.
- PSO3.** Perform land survey; plan, design, construct, maintain and manage water resources systems; analyze water and wastewater; manage solid waste; plan, design and execute environmental systems and processes.