6. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO I: To understand and analyze engineering issues in a broader perspective with ethical responsibility towards sustainable development.

PEO II: To develop professional skills in students that prepares them for immediate employment and for lifelong learning in advanced areas of Science & Technology.

PEO III: To equip with skills for solving complex real-world problems.

PEO V: Graduates will make valid judgment, synthesize information from a range of sources and communicate them in sound ways in order to find an economically viable solution.

PEO VI: To develop overall personality and character with team spirit, professionalism, integrity, and moral values with the support of humanities, social sciences and physical education courses.

7. PROGRAMME OUTCOMES (POs)

1. **Engineering knowledge:** Apply knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
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.
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.

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.
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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with the 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.
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.
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.

8. PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO 1: Apply principles of mechanics and basic sciences to analyze civil engineering structures. Survey, map, measure and analyze data for sustainable infrastructure planning.

PSO 2: Survey, map, measure and analyze data for sustainable infrastructure planning.

PSO 3: Characterize and evaluate materials for adaptability in civil engineering projects.

PSO 4: Analyze and design concrete & steel structures, earthen embankments, irrigation structures, water supply, waste treatment systems and transport systems.

PSO 5: Apply best management practices for construction and maintenance of infrastructure facilities. PSO 6: Predict and forecast societal needs, floods, droughts, pollution and travel demand.

PSO 7: Work and lead in multi-disciplinary projects and demonstrate social responsibility and professional ethics.

PSO 8: Engage in research and life-long learning to adapt to a changing environment.