

Department of Civil Engineering
Guru Jambheshwar University of Science and Technology, Hisar

Programme Educational Objectives (PEOs)

1. To develop a professional to pursue career as a Civil Engineer with adequate technical knowledge and skills while using modern tools for problem-solving and exhibiting qualities of communication, team membership, and leadership.
2. To develop the ability to practice ethically focusing on social relevance, environmental sustainability, optimal solutions and safety of stakeholders.
3. To develop abilities of lifelong learning to continuously strive to enhance decision-making abilities to investigate, design and develop complex facilities.

Programme Outcomes (POs)

To achieve the PEOs, we expect our students to attain the following outcomes by the time of their graduation. The Programme graduates will have:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identity, formulate, review 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 the specified needs with appropriate consideration for the public health and safety, and the 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 to reason 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 teamwork:** 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 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.

Programme Specific Outcomes (PSOs)

1. Able to analyze various Civil Engineering structures and systems by using basic and advanced technologies.
2. Able to design civil engineering facilities and their elements and also the use of modern software tools for the same.
3. Able to plan, monitor and supervise construction activities to complete civil engineering facilities satisfactorily.
4. Able to practice as a construction professional through ethical practice while focusing on sustainability and the economy.