

# **M. S. Patel Department of Civil Engineering, CSPIT, CHARUSAT**

## **Vision**

To be the center of excellence in education, consultancy & research having recognition at national and international level

## **Mission**

To impart the state of the art education through innovative research and develop the graduates having abilities to handle integrated professional activities

## **Programme Educational Objectives (PEO's):**

**PEO 1:** The graduate will possess foundation of engineering knowledge and exhibiting critical thinking and problem solving skills

**PEO 2:** The graduates will have trait of lifelong learning and be able to inculcate the capabilities to meet the diversified needs of industry, academia and research.

**PEO 3:** The graduate will exhibit the professional ethics and be supportive to the social needs

**PEO 4:** The graduates will possess comprehending, analyzing and designing capabilities to generate sustainable solutions

## **Programme Outcomes (PO's)**

Engineering Graduates will be able to:

- 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:** Identify, 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 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 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 (PSO's):**

By the completion of Civil Engineering program, the student will attain:

**PSO 1:** The ability to serve the infrastructure sector with capabilities to plan, design, analyze and building civil engineering-based systems

**PSO 2:** The ability to adopt to the state-of-the-art practices in all sectors of Civil Engineering.

**PSO 3:** Employability skills with the cognizance of social and environmental necessity along with ethical responsibility to have a successful career and to become an entrepreneur.