B.Tech. in Civil Engineering

Program Educational Objectives

PEO 1

Graduates will pursue higher studies in civil engineering, management and other related fields

PEO 2

Graduates will perform as professional engineers in the fields of civil engineering

PEO 3

Graduates will perform in diverse fields and gradually move into teamwork and leadership positions.

PEO 4

Graduates will contribute to the development of the profession, nation and society

PROGRAM OUTCOME

PO1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	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.
PO3	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 considerationsUse research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems: that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline as against problems given at the end of chapters in a typical text book that can be solved using simple engineering theories and techniques.
PO4	Conduct Investigations of Complex Problems:	that may not have a unique solution. For example, a design problem can be solved in many ways and lead to multiple possible solutions; that require consideration of appropriate constraints / requirements not explicitly given in the problem statement such as cost, power requirement, durability, product life, etc.; which need to be defined (modelled) within appropriate mathematical framework; and that often require use of modern computational concepts and tools, for example, in the design of an antenna or a DSP filter.
PO5	Modern Tool Usage:	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and	Apply reasoning informed by the contextual knowledge

	Society	to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	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.
PO8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and Team Work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	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.
PO11	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.
PO12	Life-long Learning	Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change

PSO – Program Specific Outcomes (PSO)

PSO - 1	*Graduates apply the knowledge of mathematical and physical sciences to solve problems in structural engineering, construction engineering management, geotechnical engineering, water resources engineering, environmental engineering and transportation engineering*
PSO - 2	*Graduates are capable of handling and applying modern engineering tools, software, Remote Sensing and GIS for solving civil engineering related problems*
PSO - 3	*Graduates are capable of working in teams in laboratory and industrial environment and carrying out major design projects*