Bachelor of Technology (Civil Engineering)

Program Educational Objectives (PEOs)

PEO-1	To achieve high level of technical expertise to understand, identify, formulate, design and implement a real-life civil engineering problem
PEO-2	To inculcate the value-based leadership and ethical qualities in implementing the civil engineering projects.
PEO-3	To enhance the need based active participation in infrastructural development for the betterment of society.
PEO-4	To foster qualities for life-long learning, working with team spirit with effective communication and powerful interaction with society.

Program Outcomes (POs)

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 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.

Program Specific Outcome (PSOs):

Program Specific Outcomes are defined as below.

1. An ability to understand the concepts of Civil Engineering and to apply them to analyse, design and execute in the field to make project safe, economical, and sustainable.

2. An ability to solve complex Civil Engineering problems, using analytical, experimental and numerical skill.

3. Wisdom of social and environmental awareness along with ethical responsibility to have a successful career and to sustain passion and zeal for real-world applications using optimal resources as an Entrepreneur.

Master of Technology (Structural Engineering)

Program Educational Objectives (PEOs)

PEO-1	To orient students on sustainability and conservation of resources.
PEO-2	To foster qualities for life long learning with ethical and societal responsibilities.
PEO-3	To expose the students to latest design codes/practices, current national and international scenario on cutting edge technologies in problems related to Structural Engineering.
PEO-4	To enhance the domain knowledge in various areas of Structural Engineering through term paper, Seminar and research work/projects.

Program Outcomes (POs)

PO-1: An ability to independently carry out research / investigation and development work to solve practical problems.

PO-2: An ability to write and present a substantial technical report/document.

PO-3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO-4: To integrate theoretical and available recent research knowledge for identification & Formulation of problem statement and to focus on alternate approaches for their solution.

PO-5: To focus on application of research knowledge for solution to industry specific problems.

PO-6: To impart capabilities in post graduate students of structural engineering to work in cross cutting areas of Civil Engineering.

Program Specific Outcome (PSOs):

Program Specific Outcomes are defined as below.

1. An ability to solve Structural engineering problems using analytical, experimental and numerical skills.
2. To sustain passion and zeal for real world applications for meeting the challenges of Aatm Nirbhar Bharat**.**

Master of Technology (Geotechnical Engineering)

Program Educational Objectives (PEOs)

PEO-1	To orient students on sustainability and conservation of resources.
PEO-2	To foster qualities for life long learning with ethical and societal responsibilities.
PEO-3	To expose the students to latest design codes/practices, current national and international scenario on cutting edge technologies in problems related to Geotechnical Engineering.
PEO-4	To enhance the domain knowledge in various areas of Geotechnical Engineering through term paper, Seminar and research work/projects.

Program Outcomes (POs)

PO-1: An ability to independently carry out research / investigation and development work to solve practical problems.

PO-2: An ability to write and present a substantial technical report/document.

PO-3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO-4: To integrate theoretical and available recent research knowledge for identification & Formulation of problem statement and to focus on alternate approaches for their solution.

PO-5: To focus on application of research knowledge for solution to industry specific problems.

PO-6: To impart capabilities in post graduate students of Geotechnical engineering to work in cross cutting areas of Civil Engineering.

Program Specific Outcome (PSOs):

Program Specific Outcomes are defined as below.

1. An ability to solve Geotechnical engineering problems using analytical, experimental and numerical skills.
2. To sustain passion and zeal for real world applications for meeting the challenges of Aatm Nirbhar Bharat**.**

Master of Technology (Hydraulics and Water Resource Engineering)

Program Educational Objectives (PEOs)

PEO-1	To orient students on sustainability and conservation of resources.
PEO-2	To foster qualities for life long learning with ethical and societal responsibilities.
PEO-3	To expose the students to latest design codes/practices, current national and international scenario on cutting edge technologies in problems related to Hydraulics & Water Resources Engineering.
PEO-4	To enhance the domain knowledge in various areas of Hydraulics & Water Resources Engineering through term paper, Seminar and research work/projects.

Program Outcomes (POs)

PO-1: An ability to independently carry out research / investigation and development work to solve practical problems.

PO-2: An ability to write and present a substantial technical report/document.

PO-3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO-4: To integrate theoretical and available recent research knowledge for identification & Formulation of problem statement and to focus on alternate approaches for their solution.

PO-5: To focus on application of research knowledge for solution to industry specific problems.

PO-6: To impart capabilities in post graduate students of Hydraulic & Water Resources Engineering to work in cross cutting areas of Civil Engineering.

Program Specific Outcome (PSOs):

Program Specific Outcomes are defined as below.

1. An ability to solve Hydraulic & Water Resources Engineering engineering problems using analytical, experimental and numerical skills.
2. To sustain passion and zeal for real world applications for meeting the challenges of Aatm Nirbhar Bharat**.**