

MASTER OF TECHNOLOGY - STRUCTURAL ENGINEERING

Program Outcomes (POs):-

1. **Scholarship of Knowledge:** Through rigorous coursework, research endeavors, and specialized study, students delve into the intricacies of their subject area, gaining a nuanced understanding that extends beyond foundational principles. Acquire in-depth knowledge of specific discipline or professional area, including wider and global perspective, with an ability to discriminate, evaluate, analyse and synthesise existing and new knowledge, and integration of the same for enhancement of knowledge.
2. **Critical Thinking and Analytical Skill:** Students emerge with the ability to systematically evaluate information, discern patterns, and synthesize complex concepts. This skill set empowers them to approach challenges with a discerning eye, fostering innovative problem-solving. Through rigorous coursework and practical applications, students hone their analytical prowess, enabling them to dissect problems, make informed decisions, and contribute meaningfully to their respective fields. This program outcome not only equips graduates for success in diverse professional environments but also underscores their capacity to navigate complexity, adapt to change, and contribute thoughtfully to the advancement of knowledge and practice in their chosen domains.
3. **Problem Analysis and Solving:** Students acquire the ability to methodically assess complex challenges, identifying root causes and potential solutions. Through practical applications and case studies, they refine their problem-solving techniques, fostering adaptability and resilience. This outcome not only equips graduates with the capacity to navigate diverse issues within their respective fields but also underscores their commitment to implementing effective, innovative solutions. As adept problem solvers, they contribute valuable insights and drive positive change, positioning themselves as resourceful and impactful professionals in a variety of industries and contexts.
4. **Research and Innovation:** The emphasis on innovation encourages the development of creative problem-solving and the translation of research findings into practical applications. This dual focus prepares graduates to be dynamic contributors in academia, industry, or other sectors, where they can actively participate in advancing their respective fields through the generation of new ideas, technologies, and methodologies. Extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyse and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains.
5. **Collaborative and Multidisciplinary work:** Possess knowledge and understanding of group dynamics, recognise opportunities and contribute positively to collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational

analysis in order to achieve common goals and further the learning of themselves as well as others. The student must be skilled to abridge the industry academia gap while studying. To develop proper corporate working environment in education.

6. **Ethical Practices and Social Responsibility:** 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. Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
7. **Teamwork:** To transform a group into an effective, cohesive and collaborative unit. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. Enable learns to understand the stages of team development- Forming stage, Storming stage, Norming stage, Performing stage, and Adjourning stage. To set team norms set a standard for behaviour, attitude, and performance that all the learning group team members are expected to follow.
8. **Project Management and Finance:** Demonstrate knowledge and understanding of engineering and management principles and apply the same to one's own work, as a member and leader in a team, manage projects efficiently in respective disciplines and multidisciplinary environments after consideration of economical and financial factors.
9. **Lifelong 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. To incubate the culture of lifelong learning that is, self-initiated education focused on personal development. As natural learners to inculcate natural drive to explore natural curiosity, learn and grow and encourage us improve quality of life and sense of self-worth by paying attention to the contemporary ideas and goals. Encourage learners to self-learn giving rise to Renewed self-motivation, Recognition of personal interests and goals, Improvement in other personal and professional skills, Improved self-confidence, Stronger soft skills, Better cognitive health, Confidence, Networking opportunities.
10. **Entrepreneurship & Startupreneurship:** Practice process of planning, starting and operating a business venture. Making learners to get educated from the knowledge & skills perspectives, awareness and culture for entrepreneurship. This includes - training & education, business mentoring & coaching, financing (debt or equity), networking initiatives, framework conditions and policies. Inculcate startupreneurship to create and launch innovative products or services, Building a sustainable business model for long-term success.

Program Specific Outcomes (PSOs):-

1. The ability to use civil engineering principles across the project's entire cycle, from initial design to project closing.
2. Strengthening of professional abilities in the fields of construction methods and management and structural engineering.
3. Utilizing pertinent mathematical concepts in engineering analysis and design. Upgrading one's technical communication abilities.
4. Applying these ideas and methods to issues in the fields of civil engineering and other related technological and industrial domains