

## **Chemical Engineering Department**

### **Programme Specific Objectives**

- ❖ Impart education and training of Chemical Engineering to the students and to eventually make them competent and well qualified Chemical Engineers.
- ❖ Provide best knowledge of the Chemical Engineering to the students and nurture their creative talent by motivating them to work on various challenging problems of Chemical Engineering.
- ❖ Acquire high end industry centric skills in the field of Chemical Engineering.
- ❖ Knowledge of the software used in the field of Chemical Engineering.
- ❖ To prepare Professional Engineer with ethical, social and moral values.

### **Programme Educational Objectives**

- ❖ To make the students ready for successful career leading to higher education and /or in industry related domains of design, research and development, testing and manufacturing.
- ❖ To solve diverse real-life engineering problems equipped with a solid foundation in mathematical, scientific and chemical engineering principles.
- ❖ To motivate and encourage the students to adopt professionalism, teamwork, leadership, communication skills, ethical approach.
- ❖ To provide learning opportunity in a broad spectrum of multidisciplinary fields.

### **Programme Specific Outcomes**

The graduates will be able to:

- ❖ Apply the knowledge of basic science, mathematics and fundamentals of engineering with specialization to solve the complex problems of engineering.
- ❖ Identify and formulate for the analysis of the engineering problems considering the knowledge of engineering mathematics, natural and engineering sciences and review of the research articles for substantial conclusions.
- ❖ Demonstrate and develop the appropriate solutions of the complex level of chemical engineering design based problems to meet the specified needs and overall sustainability of the processes, considering the necessary approaches of safety, health hazards, societal and environmental factors.
- ❖ Investigate, demonstrate and conduct the design based complex problems using research based knowledge and methodologies, experimental studies, subsequent analysis and interpretation of data to prepare the valid technical reports.
- ❖ Understand and demonstrate the impact of relevant professional engineering solutions and knowledge for the sustainable development of society and environment.

- ❖ Apply suitably the norms and responsibilities of engineering practices towards the commitment following the principles of engineering ethics.
- ❖ Work effectively as an individual or in diversified and multidisciplinary environments showing the team solidarity.
- ❖ Ability to communicate efficiently with the engineering community, society and able to represent and explain the design documentation effectively with clear instructions.
- ❖ Demonstrate the knowledge and principles of engineering, management, cost and feasibility studies for the desired projects as an individual, a member or leader in a team of multidisciplinary settings.
- ❖ Possess the attitude of lifelong independent learning as per the need of wider context of technological changes and can pursue higher education for careers in academics, research and development.

## Program Outcomes

	<b><u>Program Outcomes</u></b>
<b>PO 1</b>	<b>Engineering Knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
<b>PO 2</b>	<b>Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
<b>PO 3</b>	<b>Design/development of solutions:</b> 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.
<b>PO 4</b>	<b>Conduct investigations of complex problems:</b> 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.
<b>PO 5</b>	<b>Modern tool usage:</b> 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.
<b>PO 6</b>	<b>The engineer and society:</b> 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.
<b>PO 7</b>	<b>Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
<b>PO 8</b>	<b>Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
<b>PO 9</b>	<b>Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
<b>PO 10</b>	<b>Communication:</b> 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
<b>PO 11</b>	<b>Project management and finance:</b> 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.
<b>PO 12</b>	<b>Life-long learning:</b> 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.