

## **Chemical Engineering**

### **PROGRAMME EDUCATIONAL OBJECTIVES (PEO):**

1. To prepare students for successful careers in Chemical Engineering and allied fields.
2. To make them professional to apply the principles of Chemical Engineering in solving practical problems
3. To develop the ability for designing chemical processes, equipments and plants with all constraints.
4. To develop the skills necessary for advanced research in Chemical Engineering through the project work.
5. To equip the students with state of art knowledge in Chemical Engineering including ethics, issues related to the global economy as well to as cultivate the skills of learning.
6. To know the latest technological advancements in computing and applied domains of engineering related to economic, environmental, social, political, ethical, and sustainability aspects.

### **PROGRAMME OUTCOMES (PO):**

1. Work as an engineering professional as individual or as a team member/leader.
2. Ability to Identify the Chemical Engineering problem
3. Apply knowledge of mathematics, science, engineering fundamentals and core engineering subjects to define and apply them with proper improvisation to solve the chemical engineering problems.
4. Able to design and conduct experiments, as well as to analyze and interpret data
5. Able to survey appropriate literatures, identify, formulate, and analyze broadlydefined Chemical engineering and allied problems.
6. Ability to select and handle analytical instruments
7. Understand and commit to professional ethics and responsibilities and norms of engineering technology and practice.
8. Capability to handle research and design problems and engage in further research activities
9. Commitment towards environmentally benign design and engineering
10. To provide suitable environment and motivation for research activity
11. Recognize the need for, and an ability to engage in lifelong learning
12. Knowledge of contemporary issues.

## **M.Tech. Food Processing Technology**

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOs):**

1. To provide adequate education, training, research and development services in the field of food processing technology.
2. To impart knowledge on the causes of food spoilage and methods of processing and preserving food.
3. To identify and select processing equipments and preservation methods appropriate for specific foods.
4. To describe the effect of preservation methods on the quality of food.
5. To provide adequate knowledge about food plant, equipments used in food industry, food safety, food laws and business management in food industry.

### **PROGRAMME OUTCOMES (POs):**

Upon successful completion of this programme the students will be able to understand about the:

1. Importance and physiochemical properties of food and significance of microorganisms related to food and agrochemical residues in foods
2. Important pathogens and spoilage microorganisms in food and methods to control spoilage and food borne diseases.
3. Processing and preservation of food by heat, non-thermal and low temperature techniques and principles and current practices of food processing techniques.
4. Specific unit operations and processing methods required to produce a given food product, waste recycling and recovery systems.
5. Formulation and processing of foods, addition of food additives, flavouring, colouring, and packaging.
6. Structure and operation of food plant, mass and energy balances for a given food process, food plant equipments, instrumentation, food safety, food laws and regulation, research and development and business management.
7. Proper cryogenic fluid for particular application like freezing of foods, medical application.
8. Significance of toxicology, relevance of nutraceuticals and functional foods.
9. Processing, preservation and transportation of meat, poultry meat and fish.
10. Formulation and processing of snack foods, breads, cakes, chocolates and confectioneries
11. Production and processing of beverages, juices, dairy and dairy products.
12. Processing and preservation of fruits and vegetables.

## **M.Tech. Industrial Biotechnology**

### **PROGRAM OUTCOMES (POs):**

On successful completion of the Masters in Biotechnology graduates will be able to

1. Acquire in depth knowledge of Biological science and Bioengineering for gaining ability to develop and evaluate new ideas.
2. Demonstrate Scientific and technological skills to design and perform research through modern techniques for the development of high throughput process and products.
3. Analyze Biotechnological problems and formulate intellectual and innovative vistas for research and development
4. Provide potential solutions for solving technological problems in various domains of Biotechnology considering the societal, public health, cultural environmental factors.
5. Examine the outcomes of Biotechnological issues critically and gain knowledge for composing suitable corrective measures.
6. Create and apply modern engineering tools for the prediction and modeling of complex bioengineering activities
7. Posses self management and team work skills towards collaborative, multidisciplinary scientific endeavors in order to achieve common goals
8. Develop entrepreneurial and managerial skills for the implementation of multidisciplinary projects
9. Demonstrate adherence to accepted standards of professional bioethics and social responsibilities
10. Posses the attitude necessary for lifelong and acquire communication skills relevant to professional positions.
11. Acquire knowledge in advanced fermentation techniques catering to fulfill the need of the society.
12. Develop skills in genetic engineering, enzyme engineering and bioprocess engineering to meet out the needs of biotechnology industries.

## **M.Tech. Industrial Safety Engineering**

### **PROGRAMME EDUCATIONAL OBJECTIVES (PEO s):**

The objectives of the programme are to train and make known to the students to achieve the following:

1. Prevent accidents in the industries by eradicating the hazard
2. Eliminate accident caused work stoppage and lost production
3. Achieve lower workmen's compensation, insurance rates and reduce all other direct and indirect costs of accidents
4. Prevent loss of life, permanent disability and the loss of income of worker by eliminating causes of accidents
5. Evaluate employee's morale by promoting safe work place and good working condition.

### **PROGRAMME OUTCOME (PO s):**

1. Identify and eradicate risks and hazards to attain zero accident industry
2. Develop and knowledge to use software for toxic release scenarios
3. Research, analyses and purpose the changes which an organization needs to make to exploit this knowledge for a comfortable, safe and occupational disease free environment
4. Design various parameters with respect to hazard free and environment friendly in the operation of process systems
5. Inspect and Investigate the hazardous situations and take preventive measures
6. Manage and Control emergency situations
7. Implementation of current safety and environment standards such as OHSAS and ISO
8. Understand the impact of health safety and environment solution on productivity.
9. Understanding of the social, legal, cultural issues and the consequent responsibly relevant to occupational health safety practices.
10. Effective communication in occupational health safety among the employees.
11. Provide practical solution to safety problem
12. Establishment, implement and improvement on safety management to improve safety culture.

