ANNEXURE

(A) VISION OF THE DEPARTMENT

To make the department of Chemical Engineering a centre of excellence in Chemical Engineering and allied fields giving thrust to research and consultancy activities.

(B) MISSION OF THE DEPARTMENT

To provide students with unique academic foundation on which to continue developing intellectual capacity and the scholarly training needed to address complex problems in Chemical Engineering with emphasis on interdisciplinary fields.

(C) PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

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 team work**: 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.

(D)PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Chemical Plant Design*: Demonstrate ability to design the components and processes of a chemical plant conforming to safety, economical, energy efficient and environmental standards.*

2. Problem Solving in Chemical Engineering: *Demonstrate* ability to understand and apply the scientific concepts, engineering skills and modern tools to solve problems related to Chemical Engineering.

3.Novel Materials and Process Development: demonstrate ability to develop novel materials based on emerging fields such as nano technology and processes based on novel synthesis routes including biochemical engineering, with emphasis on cost, quality, sustainability, safety and environment

(E) PROGRAM EDUCATIONAL OBJCETIVES (PEOs)

1. Graduates who can effectively manage chemical process industries to address the global challenges and demands by ensuring quality and sustainability.
2. Graduates with a passion for chemical engineering to pursue higher studies, research and development, innovation and lifelong learning.
3. Graduates with the basic knowledge in interdisciplinary areas such as biotechnology, health, safety, environment, energy to take up and solve real life problems.
4. Graduates with good management and leadership skills, discipline, confidence, self esteem, teamwork, communication skills and strong adherence to ethical values and social commitment.
5. Graduates with sound knowledge to prepare detailed project reports for chemical industries and acquire entrepreneurship capabilities.