



NED University of Engineering & Technology, Karachi

Department of Polymer & Petrochemical Engineering

Vision of the Department:

To become a leading institute of national and international repute in the field of Polymer & Petrochemical engineering and exceptionally contribute to solve the technological needs of the global economy and human society.

Programme Educational Objectives (PEOs):

The Department of Polymer & Petrochemical Engineering produces graduates, who will

PEO-1: Demonstrate essential knowledge and skill set needed to pursue dynamic professional career in the discipline of Polymer & Petrochemical Engineering.

PEO-2: Exhibit strong leadership, management, financial and communication skills in multi-disciplinary environments.

Programme Learning Outcomes (PLOs):

The graduates of Polymer & Petrochemical Engineering will demonstrate the following attributes for their professional career.

1. Engineering Knowledge: Apply knowledge of mathematics, natural science, engineering fundamentals and Engineering specialization to the solution of complex engineering problems

2. Problem Analysis: Identify, formulate, conduct 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: An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations

4. Investigation: Conduct investigation of complex Engineering problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions

5. Tool Usage: Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex Engineering problems, with an understanding of the limitations

6. The Engineer and The World: Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment while solving complex engineering problems

7. Ethics: Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion

8. Individual and Collaborative Team Work: Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings

Mission of the Program:

To produce professional engineers equipped with theoretical and practical knowledge and skills enabling them to ethically lead and contribute in the constant growth of the knowledge-base and sustainable improvement in the polymer and petrochemical industries, nationally and internationally".

PEO-3: Manifest engineering ethics considering sustainability, societal & environmental well-being and provide comprehensive solution to global challenges.

PEO-4: Engage in life-long learning, research, and innovation over the career.

9. Communication: Communicate effectively and inclusively 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, and make effective presentations, taking into account cultural, language, and learning differences

10. Project Management And Finance: Demonstrate knowledge and understanding of engineering management principles and economic decision making and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments

11. Lifelong Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change.

Mapping of PEOs with PLOs

Program Learning Outcomes (PLOs)	Program Educational Objectives (PEOs)			
	PEO-1	PEO-2	PEO-3	PEO-4
PLO 1: Engineering Knowledge	✓			
PLO 2: Problem Analysis	✓			
PLO 3: Design / Development of solutions	✓			
PLO 4: Investigation	✓			
PLO 5: Tool Usage	✓			
PLO 6: The Engineer and the World			✓	
PLO 7: Ethics			✓	
PLO 8: Individual and Collaborative Team Work		✓		
PLO 9: Communication		✓		
PLO 10: Project Management and Finance		✓		
PLO 11: Lifelong Learning				✓