PROJECT BASED LEARNING METHODOLOGY

Introduction

Project Based Learning (PBL) is an effective teaching methodology adopted in Petrochemical Technology to enhance students' practical knowledge and problem-solving skills. This method allows students to work on real-world problems related to petroleum refining, petrochemical production, process optimization, and environmental management. Through project activities, students apply theoretical concepts to practical petrochemical engineering applications.

Objectives

- To develop analytical and problem-solving skills in petrochemical engineering
- To encourage teamwork and collaborative learning
- To apply theoretical knowledge to real industrial petrochemical problems
- To promote innovation and research in petrochemical technology

Scope

This methodology is applicable to courses in Petrochemical Technology, including:

- Petroleum Refining Technology
- Petrochemical Process Technology
- Chemical Reaction Engineering
- Mass Transfer Operations

- Process Design and Simulation

Projects may be carried out individually or in groups.

Responsibilities

Head of the Department (HoD)

- Approves and monitors project-based learning activities.

Faculty Coordinator / Course Instructor

- Identifies suitable project topics related to petrochemical processes and industrial applications.
- Guides students throughout the project work.
- Evaluates student performance.

Students

- Select or are assigned project topics related to petrochemical engineering problems.
- Conduct research, design, analysis, and prepare project reports.

Procedure

1. The faculty identifies project topics related to petrochemical technology such as refining processes, catalyst development, process optimization, or environmental control in petrochemical industries.
2. Students form groups or work individually to select a project topic.
3. Students perform literature review, data collection, and process analysis related to the selected topic.
4. Faculty members guide students during project development and technical discussions.
5. Students prepare a project report and presentation explaining the methodology, results, and industrial relevance.
6. The projects are evaluated based on innovation, technical knowledge, presentation, and practical application.

Outcome

Project Based Learning helps students:

- Understand real petrochemical industrial problems

- Improve technical knowledge and research skills
- Develop practical experience in petrochemical process analysis and design