

**Course Code:** 3407004092021

**Credits:** 2

**Semester:** 7

**Instructor:** Dr. Pekdemir, Dr. Büyükada, Dr. Tezel Tanrısever, Dr. Ateş Duru, Dr. Göl

**Contact Information:** BAIBU Chemical Eng. Department

### **Course Description**

This project involves independent research and application of chemical engineering principles. Students will identify a relevant problem, conduct experiments or simulations, analyze data, and present their findings in a formal report and presentation.

### **Learning Outcomes: Subject Mastery**

By the end of this project, students will be able to:

1. Identify and define a chemical engineering problem.
2. Conduct literature reviews and background research.
3. Design and execute experiments or simulations.
4. Analyze and interpret data effectively.
5. Communicate findings through a written report and oral or poster presentation.

### **Learning Outcomes: Personal Abilities**

1. Demonstrate the ability to analyze complex problems, evaluate solutions within the context of chemical engineering projects.
2. Apply creative and innovative approaches to solve engineering challenges and develop effective solutions.
3. Collaborate effectively with diverse team members to achieve project goals, demonstrating strong interpersonal skills.
4. Adhere to ethical principles and standards in the practice of chemical engineering,

### **Weekly Outline**

1. **Topic Selection and Proposal (Weeks 1-2)**
  - Choose a relevant topic in consultation with the instructor.
  - Submit a project proposal outlining objectives, methodology, and expected outcomes.
2. **Literature Review (Weeks 3-4)**
  - Conduct a comprehensive literature review on the chosen topic.
  - Summarize key findings.
3. **Methodology Development (Weeks 5-6)**
  - Develop a detailed methodology for conducting experiments or simulations.
4. **Data Collection (Weeks 7-10)**
  - Execute the proposed methodology.
  - Collect and document data systematically.

## 5. Data Analysis (Weeks 11-12)

- Analyze data using appropriate statistical and engineering methods.
- Interpret results in the context of the research question.

## 6. Report Writing (Weeks 13-14)

- Prepare a comprehensive report that includes introduction, methodology, results, discussion, and conclusions.
- Follow formatting guidelines provided by the instructor.

## 7. Final Presentation (Week 15)

- Present findings to peers.
- Prepare visual aids (e.g., slides, posters) to enhance the presentation.

**Progress Meetings:** 30-60 min consultation time will be held on an agreed time slot of each week to discuss the progress of the work and future activities if any changes from the original proposal plan decided. Every meeting must be recorded in minute documents and e-mailed to the supervisor before 9:00 am a day before the next meeting. Come on time and be prepared for the meetings in a structured way. Know what you need to establish at each meeting to make significant progress with the allocated tasks. BE PROACTIVE. The meetings form part of continuous assessment and every meeting contributes to the marking. Failure to be proactive (be on top of the project and take the initiative) will result in marks being lost as you go.

### Assessment

- Performance in Meetings: 20%
- Project Proposal: 5%
- Literature Review: 10%
- Methodology: 5%
- Data Analysis: 15%
- Final Report: 35%
- Oral Presentation: 15% (attended by the students enrolled in this module and assessed by at least three academic member of staff)

### Recommended Resources

- Textbooks on Chemical Engineering principles and research project conducting and management.
- Scientific journals and databases for literature reviews.
- Software tools for data analysis (e.g., MATLAB, Python, EXCEL).

### Policies

- Attendance and participation are crucial.

- Academic integrity must be upheld; plagiarism will not be tolerated.
- Consult the supervisor for any issues that may arise during the project.