

1. Course Code and Name: ChE 302 - Chemical Engineering Laboratory I - Spring 2018

2. Credits: 3 (1+1+4)

Contact Hours:

	302.01	302.02
Lecture	T4 (12:00-12:50)	W5 (13:00-13:50)
Quiz	Th5 (13:30-13:50)	F1 (09:30-09:50)
Laboratory	Th678 (14:00-17:00)	F234 (10:00-13:00)

3. Instructor: Burak Alakent, Associate Professor

4. Textbook: ChE Laboratory I Textbook prepared by ChE Faculty and Staff, Bogazici University, on line edition, 2018.

5. Specific Course Information

a. Catalogue Description: Series of experiments related to unit operations and unit processes. Survey of experimental methods. Safety assessment. Principles of safety regulations.

b. Prerequisites: ChE 334 & ChE 342 (both as co-requisites)

c. Required Course

d. Grading Policy: Laboratory Work (Performance, quiz, report) 70%, Midterm 10%, Final 10%, Presentation 10%

6. Specific Goals for the Course

a. Course Learning Outcomes

- To perform experiments and analyze results related to chemical engineering unit operations and processes
- To learn the principles of safety regulations in a chemical engineering laboratory
- To develop an understanding of scientific report writing by performing a thorough evaluation of the experimental methodology and results
- To develop skills in teamwork during experiments and report preparation
- To improve knowledge about the uncertainties in measurements and error analysis

b. Relationship of Course to Student Outcomes

Student Outcomes	Course Learning Outcomes				
	1	2	3	4	5
(a) an ability to apply knowledge of mathematics, science, and engineering	x		x		x
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	x				
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability					
(d) an ability to function on multi-disciplinary teams				x	
(e) an ability to identify, formulate, and solve engineering problems	x		x		
(f) an understanding of professional, ethical and social responsibility			x		
(g) an ability to communicate effectively			x		
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context					
(i) a recognition of the need for, and an ability to engage in life-long learning					
(j) a knowledge of contemporary issues					
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	x	x	x		

7. Brief List of Topics to be covered

I. Introduction 1. Safety II. Experiments in 1. Fluid Mechanics 2. Heat Transfer 3. Reaction Kinetics 4. Thermodynamics 5. Mass Transfer	III. Presentation Skills 1. Report Writing 2. Oral Presentation IV. Error Analysis 1. Uncertainties in Measurements 2. Error Analysis
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8. Outline

Week	Month	Day	Lecture/Content	Lab
1	Feb	5-9	T W Introduction, Th F Safety	-
2	Feb	12-16	T W Report Writing	-
3	Feb	19-23	T W Plagiarism	1 st Experiments
4	Feb-Mar	26-2	T W Error Analysis	Report Evaluation Week
5	Mar	5-9	-	2 nd Experiments
6	Mar	12-16	-	3 rd Experiments
7	Mar	19-23	-	4 th Experiments
8	Mar	26-30	Grade Announcement	-
9	Apr	2-6	-	Midterm Week
10	Apr	9-13	-	5 th Experiments
11	Apr	16-20	Spring Break	
12	Apr	24-27	-	6 th Experiments
13	Apr-May	30-4	T W Presentation Lecture	
14	May	7-11	Grade Announcement	Presentations

RULES AND REGULATIONS

- You will perform **six** experiments and submit reports in groups of **four**.
- Before each lab session, you will take a quiz. If your quiz grade is lower than **40** or if you miss a quiz without a valid excuse, you will perform the experiment, but your report grade will be reduced in half. This rule is valid only **once**. If you miss more than one quiz without a valid excuse, you will get an “F”.
- If you miss an experiment with a valid excuse, your lab grade will be evaluated over five experiments, but you have to contribute to report writing and you are **responsible** for that experiment in the midterm/final. If you miss more than one experiment, you will get an “F”.
- The midterm includes questions from the first three experiments, and the final includes questions from the last three experiments, safety and topics covered during the lectures.
- Reports on previous week’s laboratory work should be submitted on-line using TURNITIN service until the end of the next lab session (Thursday - 18:00, Friday - 14:00). **These deadlines are sharp**, late submissions are not allowed by the service. Hard copy reports will be collected only for the first set of experiments in addition to TURNITIN submissions.
- You will be assigned on **April 30th** to present one of your experiments on **May 11th**.
- Before each lab session, you must read the handout of your experiment very carefully. Please pay special attention to the safety precautions and the necessary preparation steps outlined in the handout. Proper attire is very important for your safety in the lab. This includes always wearing your lab coat, gloves and goggles and no loose hair, no ties, no sandals. You will not be able to perform the experiment if your attire is not appropriate.
- If you miss **introduction lecture** you will lose **1 point** and if you miss **safety lecture** you will lose **2 points** on your overall grade.
- You should have at least 70% attendance (other than introduction and safety lectures) otherwise you will get **F**.
- Academic dishonesty is a serious offense that may result in suspension or expulsion from the university. Cheating, plagiarism and copying are not acceptable and will not be tolerated. You will **with no exception** get a zero on your report. You will fail the course for academic dishonesty during the midterm or final exam.
- If you violate the honesty once, you will get a zero on your report + performance + quiz. If you violate twice you will **fail** the course (**NO EXCEPTION**). This rule is valid for every members of the group. If you have taken the report of your friends within same class (ChE 302.01 and ChE 302.02 of Spring 2018), they will also be punished in the same way.

Name:

Signature: