

SYLLABUS

Code/Name	MCE 111 / Chemistry
Type	Required
Credit/ECTS	4/4
Hour per Week	4 (3+1)
Level/Year	Undergraduate/1
Semester	Fall
Classroom	A004
Content	This course is intended to provide engineering students with a background in important concepts and principles of chemistry. Emphasis will be placed on those areas considered most relevant in an engineering context and practical applications in engineering and technology will be examined. Fundamental laws of chemistry including topics such as atomic and molecular structure, stoichiometry, chemical bonding, kinetics, reaction equilibria, acids, bases and electrochemistry.
Prerequisites	-
Textbooks	Primary Class Notes Supplementary Raymond Chang, Jason Overby, Chemistry, Mc-Graw-Hill Education, 14 th Ed., 2022. Ralph H. Petrucci, General Chemistry: Principles and Modern Applications, Pearson Canada, 11th Ed., 2017. Theodore E. Brown, Eugene H. Lemay, Chemistry the Central Science, Pearson Education 13th Ed., 2014.
Objectives	<ul style="list-style-type: none">• To learn the scientific method• To learn the skills for problem solving• To have general chemistry knowledge• To make a connection to the principles that govern the natural world• To connect basic principles of chemistry to issues in engineering professions
Course Outcomes	In this course you will be able to: CO1 Have a basic chemical terminology, facts, principles and methods CO2 Identify the synthesis, structure and periodic relationships between elements CO3 Understand the theoretical basis for atomic structure, chemical bonding and molecular structure CO4 Learn molecular structures and properties to describe and solve real world problems CO5 Use problem solving skills to quantitatively evaluate a chemical system and to describe chemical equilibrium, thermochemistry and reaction kinetics
Weekly Schedule of Topics	
W	Topic
1	Introduction to Chemistry
2	Matter and Measurement
3	Atoms, Molecules and Ions

4	Periodic Relationship Among the Elements
5	Mass Relationships in Chemical Reactions
6	Gases
7	Thermochemistry
8	Chemical Bonding I
9	Chemical Bonding II
10	Physical Properties of Solutions
11	Chemical Kinetics
12	Chemical Equilibrium
13	Acids and Bases
14	Electrochemistry

Professional Contribution Ability to explain the relationship between experimental observations, chemical principals and theories.

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	5	5	2	5	1	3	4	0	5	4	5
CO2	5	5	2	4	1	3	4	0	5	4	5
CO3	5	5	2	5	1	3	4	0	5	4	5
CO4	5	5	4	5	4	3	4	2	5	4	5
CO5	5	5	4	4	1	3	4	0	5	4	5

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions -

Requirements Basic knowledge of a usage of scientific calculator with mathematical functions

Course Policy

- Be in the class on time.
- English should always be used to communicate with one another.
- At least 70% attendance is required, otherwise a grade of **DZ** will be assigned.

Cheating & Plagiarism

- Copying or letting someone copy your work on exams, assignments, or reports is cheating.
- Cutting and pasting text, figures and tables from web sources or any other electronic source is plagiarism.
- The consequence of academic dishonesty is to receive a grade of **FF** for the course.

Evaluation

Midterm	40%
Final Exam	60%
Total	100%

Instructor

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Room	417	Office Hours	

Prepared by Çiğdem Dülgerbaki