PLEASE KEEP THIS COURSE SYLLABUS FOR FUTURE REFERENCE AS IT CONTAINS IMPORTANT INFORMATION

EASTERN MEDITERRANEAN UNIVERSITY
DEPARTMENT OF CHEMISTRY

COURSE CODE	*CHEM111*	**COURSE LEVEL**	*Freshman*	
COURSE TITLE	General Chemistry	**COURSE TYPE**	Faculty Core	
CREDIT VALUE	(4,1) 4	**ECTS VALUE**	6	
PREREQUISITES	None	**COREQUISITES**	None	
DURATION OF COURSE	One semester	**Semester and year**	**SPRING**	**2022-23**

COURSE WEB PAGE	You will have access to the class material on the course link which is available on Distance Learning Institute web page (http://lms.emu.edu.tr). We will shortly refer to it as the ***Moodle*** page. You will be able to reach - A copy of the course outline - Lecture presentation slides (Lecture notes) - General Chemistry Laboratory Booklet - Answer keys of quizzes and exams - Past exam papers - Exam schedules - Lab and Tutorial schedules - Other Important Dates - Announcements You will take your all quizzes and exams via the links that will be available on the course web page.

	Group(s)	Name	e-mail	Office	Telephone
Instructors	1	Elvan Yılmaz	elvan.yilmaz@emu.edu.tr	AS229	1086
Assistants	1	Cahit Özbilenler	cahit.ozbilenler@emu.edu.tr	AS225	1064

CATALOGUE DESCRIPTION

Matter and measurements; Atoms, Molecules and Ions; Mass Relations in Chemistry-stoichiometry; Reactions in Aqueous Solution; Gases, Thermochemistry; Quantum Theory and the Electronic Structure; Periodic Relationships among Elements; Chemical Bonding-Ionic Bonding, Covalent Bonding, Lewis Structures, Molecular Geometry and Hybridization

AIMS & OBJECTIVES

(Relationship of Course to Program Outcomes)

This course is the first component of the two general chemistry courses for first year sciences students. It offers the opportunity to the student to develop:

- an adequate background in fundamentals of general chemistry.
- systematic problem-solving skills through numerous conceptual and numerical problems requiring critical and analytical thinking skills in addition to a good grasp of chemical concepts.
- scientific literacy and awareness to become an informed citizen.
- basic laboratory skills.

LEARNING OUTCOMES

- Identify the classes, constituents, and properties of matter.
- Understand the atomic and molecular structure.
- Understand and use the mole concept.
- Identify and name the substances.
- Distinguish between types of substances.
- Represent molecules and compounds using empirical, chemical, and structural formulae.
- Understand mass relations in chemistry.
- Be able to write and balance chemical equations.
- Carry out stoichiometric calculations.
- Calculate solution concentration.
- Identify types of reactions.
- Identify acids and bases.
- Comprehend simple gas laws, ideal gas behaviour and kinetic theory of gases.
- Understand the role of energy in chemistry and become acquainted with chemical thermodynamics.
- Describe the quantum mechanical model of the atom.
- Write electron configurations and orbital diagrams.
- Understand periodicity and use the periodic table to write electron configurations.
- Distinguish between ionic, covalent and metallic bonding.
- Write Lewis structures of molecules and ionic compounds.
- Show the molecular geometry of covalent compounds.
- Learn system of units used in physical sciences.
- Use symbols and units correctly; and formulate appropriate mathematical and chemical equations for solving problems.
- Apply the theoretical concepts and methods of chemistry covered in this course to solve problems.
- Use dimensional analysis method for solving numerical problems.
- Use efficiently and effectively a variety of printed and electronic text, material (including the textbook) relevant to the course.
- Handle chemicals properly, performing experiments as a team safely, and write lab reports.
- Use decent scientific English for written and oral communication.

ATTENDANCE

Lectures:

- The students are expected to attend all lectures. Less than 50% attendance will result in "NG" grade. (See the Grading Criteria).
- Attendance is taken regularly. The instructor may take the attendance in the first or the second hour of a two-period session.
- Each student can follow his/her attendance records from the on-line attendance follow-up system in portal.

Lab sessions:

- Missing 2 or more experiments out of 4 results in failure from Chem111 with an NG grade.

ASSESSMENT (Exams & Home-works) (See also Grading Criteria)

Exams:

- There will be **two midterm exams**, and **one final exam**. Final exam will include questions from all topics covered in the whole semester. There will be no questions from the lab experiments in midterm and final exams.
- All students should have a non-programmable scientific calculator, which can be used in exams. Mobile phones and tablets are not allowed in the exams. You may not use them as calculator.
- Students can see their papers in the first 10 days following the announcement of results, but not later than that.
- All assessment (including lab report and lab exams) marks will be announced via the student portal; they will not be announced on notice boards or elsewhere.
- Exams regarding the lab sessions are explained in the Laboratory section of this course outline.

Make-up Exams

Caution:

- We strongly recommend the student not to miss exams given on the regularly scheduled dates.
- Students having not attended any one **Midterm** or **Final** exams are entitled to enter the Make-up Exam. One CAN NOT sit for the make-up exam to improve his/her already existing regular exam mark.
- There will be a **single make-up session** with different question sets for midterm and final exams. **You may make up only one exam**.
- The date will be right after the "Final Exams" period. It will be announced on the course web page.
- No medical report is needed for the make-up exam.
- No application is needed to sit in the make-up exam.
- There will be no make-up of make-up exams.
- Not attending any two exams including make-up exams will result in NG grade.

Objections:

Students' may inspect their marked exam papers on the course web page. According to EMU by-laws, objections should be made within 10 days of announcement of marks. Objections to any grade must first be made to the instructors. If still unsatisfied students may petition the head of department.

Method of Assessment:

Midterm I	22.5%
Midterm II	22.5%
Laboratory work	15%
Final	40%

Passing **old lab marks (6/15)** of repeating students are transferrable; therefore, they don't have to repeat the lab work.

LABORATORY

- Laboratory work is compulsory.
- **Four** experiments will be done during the semester. **Missing two or more experiments will result in failure in CHEM111with an NG grade**. In other words, you **must perform at least 3 experiments**.
- Students are expected to own a copy of General Chemistry Lab Manual, which is available on the course web page.
- Students must attend lab sessions only on the dates allocated to their group.
- Calculators are allowed and necessary.
- There will be a quiz about the experiment to be performed at the beginning of each lab session.
- Each student is expected to submit a lab report after the experiment.
- The lab session will be available on the course web page after the due date of the lab report. Any late submissions will be penalized by 10% deduction in your lab report mark.
- There will not be any lab make-up sessions.
- Lab quiz and report marks will be announced on the web page of the course.
- Rules and regulations are summarised in more detail in the lab manual. Lab assistants will provide further information and guidance.

GRADING CRITERIA

A to F	Letter grades are determined by a "curve system". No letter-grade templates apply.
NG **nil grade**	Conditions that will lead to NG grade. i) Not attending two exams or their make-up exams ii) Not attending two or more lab sessions iii) Less than 50% attendance

Important notice to all students repeating the course for a better grade:

Whatever grade you receive at the end of this semester will replace your previous grade.

TEXTBOOK

R. Chang and K.A. J.Overby, **Chemistry**, Mc Graw Hill International Edition, 13th ed., 2019 (ISBN: 978-1-260-08531-0)
Or
R. Chang and K.A. J.Overby, **Chemistry**, Mc Graw Hill International Edition, 14th ed., 2022 (ISBN10: 1260784479) (ISBN13: 9781260784473)

Important Note:

- You can buy the book from the online shop of the authorised bookstore (Deniz Shop) https://www.denizshop.com/dau-kitaplari
- You may use the following direct link to the book as well https://www.denizshop.com/chem-105-111-chemistry-13th-edition-connect-6599
- **Please be informed that only e-book will be available.**
- A registration code can be used by only one student. Never give this code to others.

LEARNING / TEACHING METHOD

- Regular classroom lectures and tutorials
- Biweekly regular lab sessions

COURSE CONTENT AND LECTURE SCHEDULE		
Week	**Date**	**Topics**
1	1Mar-3 Mar	Matter, Measurements and Dimensional Analysis
2	6 Mar-10 Mar	Atoms, Molecules and Ions Mass Relationships in Chemical Reactions
3	13 Mar-17 Mar	Mass Relationships in Chemical Reactions
4	20 Mar-24 Mar	Reactions in Aqueous Solutions
5	27 Mar-31 Mar	Reactions in Aqueous Solutions
6	3 Apr- 7 Apr	Gases
7	10 Apr- 14 Apr	Thermochemistry
8	17 Apr- 20 Apr	Thermochemistry
9,10	**24 Apr-8 May**	**Midterm Week**
11	9 May-12 May	Quantum Theory and Electronic Structure
12	15 May-19 May	Electron Configurations of Atoms and Ions Periodic Relationships Among the Elements
13	22 May-26 May	Periodic Relationships Among the Elements Chemical Bonding: Basic Concepts
14	29 May-31 May	Chemical Bonding: Basic Concepts Chemical Bonding: Molecular Geometry and Hybridization
15	5 June -8 June	Chemical Bonding: Molecular Geometry and Hybridization
16,17	**12 June-26 June**	**Final Exams**

ACADEMIC HONESTY – PLAGIARISM

Cheating is copying from others or providing information, written or oral, to others. Plagiarism is copying without acknowledgement from other people's work. According to university by laws cheating and plagiarism are serious offences punishable by disciplinary committee ranging from simple failure from the exam or project to more serious action (letter of official warning, suspension from the university for up to one semester). Disciplinary action is written in student records and may appear in student transcripts.