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

EASTERN MEDITERRANEAN UNIVERSITY
DEPARTMENT OF CHEMISTRY

COURSE CODE	*CHEM104*	**COURSE LEVEL**	*Freshman (Second Semester)*	
COURSE TITLE	ORGANIC CHEMISTRY	**COURSE TYPE**	Area Core	
CREDIT VALUE	(3,1,0) **3**	**ECTS VALUE**	5	
PREREQUISITES	None	**COREQUISITES**	None	
DURATION OF COURSE	One semester	**Semester and year**	**SPRING**	**2022 - 23**

Attention: All information and rules provided in this syllabus is subject to change in accordance with the new decisions of academic boards of EMU in parallel to the developments in Covid-19 Pandemic.

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COURSE WEB PAGE	-Login to the Learning Management System (https://lms.emu.edu.tr) for the web page of **Organic Chemistry** (CHEM104). -By using your Office 365 mail account you will be able to access the course web page. -Following information/tools will be provided to the students all-over the semester through the CHEM104 web page and/or MS Teams: **1.** Important dates, exam schedules, and announcements. **2.** Downloadable files of: - An updated copy of this course outline in pdf format - Lecture presentation slides (Lecture notes) - Practical Problems with answers - Printable Periodic table of elements
ONLINE COMMUNICATION	**MICROSOFTS TEAMS: CHEM104-01_2022-23-2 *(General)***
PERSONAL e-MAILS	All the important news and announcements will be published on the web page of the course (https://lms.emu.edu.tr). Usually, a copy of the news and announcements is also sent to your Office365 EMU e-mail address indicated in your student portal. **It is your responsibility** to make sure that this e-mail address you provided during your registration is **active**. Be sure to check your email address regularly.

TEXTBOOK	*Textbook:* Spencer L. Seager; Micheal R. Slabaugh; Maren S. Hansen: '**Chemistry for Today: General, Organic, and Biochemistry'**, 9th Ed**.** CENGAGE Learning, 2018. (ISBN Student Ed.: 978-1-305-96006-0, ISBN Loose-leaf Ed.: 978-1-305-96870-7) *Reference Book:* Solomons: '**Organic Chemistry**', Global Ed. John Wiley and Sons, Inc. 2017.

CATALOGUE DESCRIPTION

Introduction to organic chemistry; Bonding and isomerism; Classification of organic compounds and functional groups; Alkanes, alkenes, alkynes and aromatic compounds; Organic halogen compounds; Alcohols, phenols and thiols; Ethers and epoxides; Aldehydes and ketones; Carboxylic acids; Amines, carbohydrates, amino acids, peptides and proteins and lipids; Enzymes and vitamins; Role and interactions of organic compounds in nutrition.

AIMS & OBJECTIVES
(Relationship of Course to Program Outcomes)

- To teach the basic concepts of organic chemistry
- To teach organic synthesis methods
- To strengthen the ability to think creatively and systematically
- To introduce the structure of organic compounds and teach chemical changes
- To teach the importance and use of organic chemistry in the Health Sciences
- To teach learning in organic chemistry science

LEARNING OUTCOMES

Students who have successfully completed the course will have developed the following knowledge and concepts:

- Understanding the place and the importance of Organic Chemistry in Health Sciences
- Acquiring knowledge about hydrocarbons
- Acquiring knowledge about organic reactions
- Functional groups in organic structures can be identified and their importance is understood

Students who have successfully completed the course will have developed the following skills:

- To name and formulate organic substances
- Be able to define structures, properties and chemical reactions of hydrocarbons, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, lipids, enzymes and vitamins
- To be able to synthesize and analyse the basic concepts and methods of organic chemistry theoretically
- Efficient and effective use of books and other printed / electronic literature related to the course

Students who have successfully completed the course will have improved their credibility with the following appreciation, values and ideas:

- The fact that organic chemistry, a subdivision of the basic science of the sciences, which is a subdivision of science, reveals the quality and quantitative explanations of the chemical changes that take place in our world
- Be open-minded, inquisitive, investigator and creative
- To be aware of the existence of ethical publications in science

ASSESSMENT (Exams) (See also Grading Criteria)

Regular Exams:

Midterm (30 %):

- Midterm exam will be held in the Midterm Exam Period on the academic calendar. The exact date will be announced by the University administration through the student portal.
- The exam will be face-to-face.
- Multiple choice or classical (essay) type questions will be asked.
- There will be no questions from the lab experiments in the midterm exam.

Quiz I (5 %):

- The exact date of Quiz I is announced at the 'Exam Schedule' section of this course outline.
- The exam will be face-to-face.
- Multiple choice or classical (essay) type questions will be asked.
- There will be no questions from the lab experiments in the quiz I exam.

Quiz II (5 %):

- The exact date of Quiz II is announced at the 'Exam Schedule' section of this course outline.
- The exam will be face-to-face.
- Multiple choice or classical (essay) type questions will be asked.
- There will be no questions from the lab experiments in the quiz II exam.

Final Exam (45 %):

- Final exam will be held in the Final Exam period on the academic calendar. The exact date will be announced by the University administration through the student portal.
- The final exam will include questions from all topics covered in the whole semester.
- The exam will be face-to-face.
- Multiple choice or classical (essay) type questions will be asked.
- There will be no questions from the lab experiments in the final exam.

Other Important Exam Policies:

- Exams regarding the lab sessions are explained in the Laboratory section of this course outline.
- All assessment marks will be announced via the student portal; they will not be announced on notice boards or elsewhere.
- Within the first ten days following the announcement of the results of the examinations, each student can examine his / her exam papers with their instructors.

Make-up and Resit Exams:

Midterm and Final Make-up Exams:

- Students who have not attended the regular **Midterm and 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.
- 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 for make-up exams.
- Not attending any two exams (midterms or final), including make-up exams will result with an NG grade.

Resit Exam:

Those students with a "**D–**" or "**F**" grade can attend the resit exam. An online application is necessary. Resit exams will be held on **13 – 19 July 2023**. The exam program will be announced. The letter grade of the course will be assigned according to the RESIT score. However, the weight of the Resit Exam will be equal to the total weight of quizzes, midterms and final exams (85 %). Attendance and Lab will also be considered in the letter grade calculation. Students with an **NG** grade are not allowed to take the resit exam. There is NO MAKE-UP examination for the RESIT EXAMINATION.

Caution:

- ***The experience of the course instructors and statistics show that the average make-up and resit exams are almost always lower than those of regular exams due to several reasons. Therefore, we strongly recommend the students not to miss the exams on their regularly scheduled dates.***

Objections

- Students may inspect their marked exam papers from their course instructors. According to by-laws, these requests should be made within 10 days of the announcement of marks. Objections to any grade must first be made to the instructors. If still unsatisfied students may apply to the head of the department.

Method of Assessment:

Midterm	30 %
Quiz I	5 %
Quiz II	5 %
Final	45 %
Attendance	5 %
Lab	10 %
	Lab Reports 8 % (5 Reports, 1.6 % each)
	Lab Quizzes 2 % (2 Quizzes, 1 % each)

GRADING CRITERIA	
A to F	Letter grades are determined by a "curve system". No fixed letter-grade templates apply.
NG **nil grade**	1- Not attending any two exams (midterm or final), including make-up exams will lead to **NG** grade. 2- Not attending 3 or more lab sessions. 3- Not attending **50 %** of the whole academic activities (theoretical lectures, applications, labs, quizzes, and all exams).

ATTENDANCE POLICY

The attendance policy of the Faculty of Arts and Sciences in the Spring Semester of 2022-2023 will be as follows:
The net attendance rate from the whole academic activities (theoretical lectures, applications, labs, quizzes, and all exams) should be a minimum of 50% in order not to get an NG grade. The details will be explained in classes.

Lectures:

- The students are expected to attend all the face-to-face lectures.
- Attendance is taken regularly and it is 5 %. The instructor may take in the first or the second hour or both hours of a two-period session.
- Each student can follow his/her attendance records from the on-line attendance follow-up system in the portal.

Lab sessions:

- Missing 3 or more lab sessions results in failure from the CHEM104 course with an NG grade.
- **ATTENDANCE** is taken regularly and will be added to the net attendance.
- Each student can follow his/her attendance records from the on-line attendance follow-up system in the portal.

Tutorial sessions:

- **ATTENDANCE** is taken regularly and will be added to the net attendance.
- Each student can follow his/her attendance records from the on-line attendance follow-up system in the portal.

Examinations:

- **ATTENDANCE** is taken regularly and will be added to the net attendance.
- Each student can follow his/her attendance records from the on-line attendance follow-up system in the portal.

LABORATORY

- Laboratory work is compulsory.
- The laboratory work includes 5 experiments during the semester with two-week intervals. Missing three or more experiments will result in failure from the CHEM104 course with an NG grade. "Missing 3 or more experiments" means HAVING NO LAB REPORTS for 3 or more experiments.
- Do not copy a previously submitted report or submit someone else's report as your own. Those reports will receive a zero mark.

- **Lab grade will be counted in determining the course grade as 10 %.**
- Students are expected to own a copy of the CHEM104 Lab Manual, which is available on the course web page **(https://lms.emu.edu.tr/)**.
- Students who are late by 10 or more minutes will NOT BE ALLOWED into the LAB.
- Students must attend lab only on the dates allocated to their group.
- There will be two lab quizzes about the experiments that will be performed. First lab quiz will be from Experiment 1 and Experiment 2 on the day that Experiment 2 is performed. Second lab quiz will be from Experiment 3, Experiment 4 and Experiment 5 on the day that Experiment 5 is performed.
- There will be a lab final exam from all experiments immediately after the final exam of this course.
- Students are not allowed to the lab without a lab coat. Lab coats must be worn at all times in the lab. Lab coats are available in the Deniz Shop or the shops around the Campus.
- Long hair must be neatly tied up.
- Eating, drinking, chewing gum and smoking are hazardous and NOT ALLOWED in the LAB.
- Mobile phones are strictly forbidden and must be turned off.
- Each student is expected to submit a lab report after the experiment. No excuses are accepted for a late submission.
- Do not leave the lab sessions without informing the Lab instructors.
- Lab report marks will be announced via the student portal.
- Rules and regulations are summarised in more detail in the lab manual. Lab assistants will provide further information and guidance.

Exemption from the lab for students repeating CHEM104:
See the "Repeating Students" section of this course outline.

LEARNING / TEACHING METHOD

- Regular **FACE-to-FACE lectures** (3 hours/week)
- Data projector will be used during the lectures.
- **Tutorials** (2 hours/week on the designated weeks)
- **Lab sessions** (2 hours/week on the designated weeks)
- See the "Laboratory/Tutorial Section" to see the weekly schedule for lab and tutorial sessions

COURSE CONTENT AND LECTURE SCHEDULE

Week	Date	Topics
1	6 – 10 March	Introduction to organic chemistry; Bonding and isomerism; Classification of organic compounds and functional groups (Ch 1)
2	13 – 17 March	Introduction to organic chemistry; Bonding and isomerism; Classification of organic compounds and functional groups (Ch 1)
3	20 – 24 March	Alkanes, Alkenes, Alkynes and Aromatic compounds (Ch 2-4)
4	27 – 31 March	Organic Halogen compounds (Ch 6)
5	03 – 07 April	Organic Halogen compounds (Ch 6)
5	03 – 07 April	**QUIZ I**
6	10 – 14 April	Alcohols, Phenols and Thiols (Ch 7)
7	17 – 19 April	Alcohols, Phenols and Thiols (Ch 7)
8, 9	24 April – 08 May	**MIDTERM PERIOD**
10	09 – 12 May	Ethers and epoxides (Ch 8)
11	15 – 18 May	Aldehydes and Ketones (Ch 9)
12	22 – 26 May	Amines, Carbohydrates, Amino acids, Peptides and Proteins and Lipids (Ch 11, 14, 15, 16)
13	29 May – 02 June	**QUIZ II**
13	29 May – 02 June	Enzymes and vitamins (Ch 17)
14	05 – 09 June	Role and interactions of organic compounds in nutrition (Ch 18)
15, 16	12 – 26 June	**FINAL EXAM PERIOD**

LAB / TUTORIAL SCHEDULE					
Experiment	Experiment 1	Experiment 2	Experiment 3	Experiment 4	Experiment 5
GROUP-01 Tuesday 17:30-19:20	21 March	04 April	18 April	16 May	30 May
Lab Make-up Week	The week of **05 – 08 June** - Make-up for Experiment-1 and/or only one other missed experiment is allowed. - Follow the announcements on the web/lab for the dates of specific experiments.				
	NOTE: Lab sessions are performed FACE-to-FACE in General Chemistry Lab (ASG07) which is in the basement of the Faculty of Arts & Sciences Building.				

Topic	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4	Tutorial 5
GROUP-01 Tuesday 17:30-19:20	14 March	28 March	11 April	09 May	23 May

EXAM SCHEDULE	
Midterm	Midterm Exams period: **24 April – 08 May** (Follow your portal for the exact date, time & place)
Quiz I	Quiz I Exam Date & Time: **06 April 2023 Thursday 17:30**
Quiz II	Quiz II Exam Date & Time: **01 June 2023 Thursday 17:30**
Final	Final Exams Period: **12 – 26 June** (Follow your portal for the exact date, time & place)

REPEATING STUDENTS

Students repeating the course for a better grade (to improve CGPA):

- Whatever grade you receive at the end of this semester will replace your previous grade. This may result in a lower grade. In such instances, no appeals will be accepted to keep the old mark

Exemption from the lab:

- **Laboratory exemptions will only be given if the lab has been successfully completed (receiving a Pass grade).**
- Passing old lab marks **(6/10)** of repeating students (with the condition that they attended at least 3 lab sessions) are transferrable; therefore they don't have to repeat the lab work.
- **The exempted student list will be announced through the course web page.**
- The Students who are not in the exemption list and do not attend Lab sessions will fail the whole CHEM104 course and will receive an **NG** grade.

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 the 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 an official warning, suspension from the university for up to one semester). Disciplinary action is written in student records and may appear in student transcripts.

Periodic Table of Elements

	1 1A												13 3A	14 4A	15 5A	16 6A	17 7A	18 8A
1	1 **H** 1.008	2 2A																2 **He** 4.003
2	3 **Li** 6.94	4 **Be** 9.01											5 **B** 10.81	6 **C** 12.01	7 **N** 14.01	8 **O** 16.00	9 **F** 19.00	10 **Ne** 20.18
3	11 **Na** 22.99	12 **Mg** 24.30	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9 8B	10 8B	11 1B	12 2B	13 **Al** 26.98	14 **Si** 28.09	15 **P** 30.97	16 **S** 32.07	17 **Cl** 35.45	18 **Ar** 39.95
4	19 **K** 39.10	20 **Ca** 40.08	21 **Sc** 44.96	22 **Ti** 47.88	23 **V** 50.94	24 **Cr** 52.00	25 **Mn** 54.94	26 **Fe** 55.85	27 **Co** 58.93	28 **Ni** 58.69	29 **Cu** 63.54	30 **Zn** 65.39	31 **Ga** 69.72	32 **Ge** 72.61	33 **As** 74.92	34 **Se** 78.96	35 **Br** 79.90	36 **Kr** 83.80
5	37 **Rb** 85.47	38 **Sr** 87.62	39 **Y** 88.91	40 **Zr** 91.22	41 **Nb** 92.91	42 **Mo** 95.94	43 **Tc** 98.91	44 **Ru** 101.07	45 **Rh** 102.91	46 **Pd** 106.42	47 **Ag** 107.87	48 **Cd** 112.41	49 **In** 114.82	50 **Sn** 118.71	51 **Sb** 121.75	52 **Te** 127.6	53 **I** 126.90	54 **Xe** 131.29
6	55 **Cs** 132.91	56 **Ba** 137.33	57 **La** 138.91	72 **Hf** 178.49	73 **Ta** 180.95	74 **W** 183.85	75 **Re** 186.2	76 **Os** 190.2	77 **Ir** 192.22	78 **Pt** 195.08	79 **Au** 196.97	80 **Hg** 200.59	81 **Tl** 204.38	82 **Pb** 207.2	83 **Bi** 208.98	84 **Po** 208.98	85 **At** 209.99	86 **Rn** 222.02
7	87 **Fr** 223.02	88 **Ra** 226.03	89 **Ac** 227.03	104 **Rf** 261.1	105 **Db** 262.1	106 **Sg** 263.1	107 **Bh** 264.1	108 **Hs** 265.1	109 **Mt** 266.1	110 **Ds** 271	111 **Rg** 272	112 **Cn** 285	113 **Uut** 284	114 **Fl** 289	115 **Uup** 288	116 **Lv** 292	117 **Uus**	118 **Uuo** 294

Lanthanides	58 **Ce** 140.12	59 **Pr** 140.91	60 **Nd** 44.24	61 **Pm** 146.92	62 **Sm** 150.36	63 **Eu** 151.97	64 **Gd** 157.25	65 **Tb** 158.93	66 **Dy** 162.50	67 **Ho** 164.93	68 **Er** 167.26	69 **Tm** 168.93	70 **Yb** 173.04	71 **Lu** 174.97
Actinides	90 **Th** 232.04	91 **Pa** 231.04	92 **U** 238.03	93 **Np** 237.05	94 **Pu** 244.06	95 **Am** 243.06	96 **Cm** 247.07	97 **Bk** 247.07	98 **Cf** 251.08	99 **Es** 252.08	100 **Fm** 257.10	101 **Md** 258.10	102 **No** 259.10	103 **Lr** 260.11