

Syllabus: CHEMISTRY OF ORGANIC COMPOUNDS

Code number: 22

Cycle: Undergraduate

Semester: 3rd

Course Type

X	Background / General Knowledge
	Scientific area: Pharmacy

Credit units (ECTS): 7

Lectures (hours per week): 3

Tutorial (hours): 2

Laboratory (hours per week):

Course coordinator: [John K. Gallos](#)

Διδάσκων: [John K. Gallos](#)

Office 301, 1st floor old chemistry building

Office hours: Monday to Friday 12.00-13.30

E-mail: igallos@chem.auth.gr

Assistant personnel: -

Aims of the course: Students should become familiar with the basic principles of modern organic chemistry and understand their value in the function and reactivity of biomolecules as well as their interaction with small molecules. To this end, the chemistry and properties of the basic classes of organic compounds and biomolecules will be examined and discussed and moreover, students will be introduced to the principles of organic spectroscopy.

Skills: Familiarization with the basic principles of Organic Chemistry.

Teaching methods: Lectures, tutoring and laboratory exercises and practices.

Contents of the course:

Interpretation of the fundamental properties of the major classes of organic compounds and organic spectroscopy, a subject divided in the following chapters:

Infrared Spectroscopy and Mass Spectrometry

NMR Spectroscopy

Conjugated Systems and Pericyclic Reactions

Aromatic Compounds
Aromatic Substitution Reactions
Aldehydes and Ketones
Carboxylic Acids and their Derivatives
Chemistry of α -Carbon: Enols and Enolates
Amines
Carbohydrates
Amino acids, Peptides and Proteins
Lipids

Suggested Literature:

1. David Klein, «ΟΡΓΑΝΙΚΗ ΧΗΜΕΙΑ», Τόμος Β', Εκδόσεις Υτορία
2. John McMurry, «ΟΡΓΑΝΙΚΗ ΧΗΜΕΙΑ», Πανεπιστημιακές Εκδόσεις Κρήτης
3. K. Peter C. Volhardt, Neil E. Schore, «ΟΡΓΑΝΙΚΗ ΧΗΜΕΙΑ», Εκδόσεις Κυριακίδη

Educational activities:

Lectures, laboratory exercises, discussion with the students in every lecture.

Evaluation process:

(A) Optional intermediate tests, and
(B) Written examination at the end of the semester covering the knowledge of the students and their ability of critically evaluating different problems of Organic Chemistry. All examined subjects are graded equally. The duration of the examinations is 3 hours.

Use of ΤΠΕ / electronic distribution of the lectures

Lectures and tutorials are based on Power point presentation. The lectures are available online on the corresponding tutors' [site](http://www.chem.auth.gr) at www.chem.auth.gr.

Teaching (lectures, tutorials, supervisions)

Teaching of this course is accomplished through lectures and supervisions. Teaching in the Laboratory is accomplished through lectures.

A) Lectures.

The lectures (5 hours per week) are taking place in lecture room A on the ground level, of the Old Chemistry Building. The lectures are available online on the corresponding tutors' site at www.chem.auth.gr.

Διάλεξη	Τίτλος	Διδάσκων
1-5	Infrared Spectroscopy and Mass Spectrometry	Ι. Γάλλος
6-10	NMR Spectroscopy	Ι. Γάλλος
11-15	Conjugated Systems and Pericyclic Reactions	Ι. Γάλλος

16-20	Aromatic Compounds	I. Γάλλος
21-25	Aromatic Substitution Reactions	I. Γάλλος
26-30	Aldehydes and Ketones	I. Γάλλος
31-35	Carboxylic Acids and their Derivatives	I. Γάλλος
36-40	Chemistry of α -Carbon: Enols and Enolates	I. Γάλλος
41-45	Amines	I. Γάλλος
46-50	Carbohydrates	I. Γάλλος
51-55	Amino acids, Peptides and Proteins	I. Γάλλος
56-60	Lipids	I. Γάλλος
61-65	Complementary courses	I. Γάλλος

B) Tutorial

Two hours per week are used as tutorial hours (Tutor: J. K. Gallos).