

COURSE OUTLINE

(1) GENERAL

SCHOOL	Food and Nutritional Sciences		
ACADEMIC UNIT	Food Science and Human Nutrition		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	1390	SEMESTER	2st
COURSE TITLE	ORGANIC CHEMISTRY		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures and Practice Exercises	5	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	general background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

ORGANIC CHEMISTRY is the basic infrastructure course for understanding the structure and reactions of organic compounds.

The course material aims to introduce students to the basic modes of operation of the characteristic groups of organic molecules with their environment, which is a prerequisite for understanding their physical and chemical behavior in food and human nutrition. Understanding the mechanism of a general reaction as well as its stereochemical course leads to the understanding and interpretation of the products obtained.

It also refers to concepts and methodologies related to the classification of reactions, the importance of stereochemistry and optical purity of molecules, the need to know the basic spectroscopic techniques in the certification of the structure.

The aim of the course is for the students to understand the structure, physical properties and characteristic chemical reactions of the chemical molecules of the most basic homologous series and the correlation of stereochemistry with activity.

Upon successful completion of the course students will be able to:

- Describe the molecular structure of basic organic molecules, and correlate structural differences with their chemical activity and biochemical behavior.
- Indicate the products of basic organic reactions found in the metabolic pathways of food ingredients.
- Identify the factors that affect the stability of organic molecules and predict their conversions depending on the chemical environment.
- Know the basic spectroscopic techniques applied for the analysis and characterization of organic compounds

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

Search, analyze and synthesize data

- Decision making
- Autonomous Work
- Respect for the natural environment
- Exercise criticism and self-criticism
- Promoting free, creative and inductive thinking

(3) SYLLABUS

1. Basic homologous series of organic compounds, classification of organic reactions, basic mechanisms of organic reactions, basic definitions.
2. Basic spectroscopic methods for determining the structure of organic molecules.
3. Carbon chain formulations and stereochemistry.
4. Alkanes, alkenes, alkynes-conjugated polyenes, electrophilic addition reactions.
5. Alkyl halides, nucleophilic substitution reactions, cleavage reactions.
6. Carbonyl compounds, nucleophilic addition reactions.
7. Amines, acids, acid derivatives.
8. Aromatic compounds, electrophilic substitution reactions.
9. Sugars (mono-, oligo-, polysaccharides).
10. Amino acids - proteins.
11. Lipids, steroids - hormones.
12. Terpenes - carotenoids.
13. Vitamins - Nucleic acids.

(4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;">DELIVERY</p> <p><i>Face-to-face, Distance learning, etc.</i></p>	<p>Lectures in the amphitheater and laboratory exercises in the laboratory.</p>	
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</p> <p><i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use Powerpoint slides and selected videos. Communication with students via e-mail, e-class, e-student.</p>	
<p style="text-align: center;">TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	Activity	Semester workload
	Lectures	50
	Laboratory Exercises	75
	125	
<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Written final exam in course theory that includes:</p> <ul style="list-style-type: none"> - Short answer questions - Problem solving - Evaluation of theory elements <p>II. Examination in the laboratory part which is formed by:</p> <ol style="list-style-type: none"> 1. The participation of students in the laboratory: <ol style="list-style-type: none"> a) oral examination during the exercises (15%) b) evaluation of laboratory reports (15%) 2. The average of two (2) written exams (progress) (70%). <p>Students who achieve a grade greater than or equal to five (5) are exempt from the final exam. Otherwise they take the final exam in the laboratory part of the course which includes:</p> <ul style="list-style-type: none"> - Short answer questions - Multiple choice test 	

(5) ATTACHED BIBLIOGRAPHY

- ORGANIC CHEMISTRY FOR LIFE SCIENCES, David Klein, 1st Greek edition, Utopia, 2015.
- ORGANIC CHEMISTRY, J. Clayden, N. Greeves, S. Warren Utopia, 2016.
- PRACTICAL AND THEORETICAL ISSUES OF ORGANIC CHEMISTRY, E. Couladouros - V. Konstantinou, Laboratory Notes.