# Course Outline: "2101 - Organic Chemistry"

## 1. General information

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| **FACULTY/SCHOOL** | Physical Education, Sport Science & Nutrition | | |
| **DEPARTMENT** | Nutrition & Dietetics | | |
| **LEVEL OF STUDY** | Undergraduate | | |
| **COURSE UNIT CODE** | **2101** | **SEMESTER** | **2nd** |
| **COURSE TITLE** | **Organic Chemistry** | | |

| **INDEPENDENT TEACHING ACTIVITIES** in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits | **WEEKLY TEACHNG HOURS** | **CREDITS** |
|---|---|---|
| Lectures | 2 | |
| Laboratory Exercises | 2 | |
| | | |
| *Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4* | **4** | **5** |

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| ***COURSE TYPE*** *Background knowledge, Scientific expertise, General Knowledge, Skills Development* | General Knowledge |
| **PREREQUISITE COURSES** | No |
| **LANGUAGE OF INSTRUCTION** | GREEK |
| **LANGUAGE OF EXAMINATION/ASSESSMENT** | GREEK |
| **THE COURSE IS OFFERED TO ERASMUS STUDENTS** | YES (in English) |
| **COURSE WEBSITE (URL)** | |

## 1. LEARNING OUTCOMES

**Learning Outcomes**

*The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:Συμβουλευτείτε το* ***APPENDIX A***

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and* ***APPENDIX B***
- *Guidelines for writing Learning Outcomes*

The course aims to present and explain

• The fundamental principles and concepts of Organic Chemistry.

• The nomenclature of organic compounds

• The classification of reactions, investigation of the mechanism by which they evolve.

• The applications thereof to various functional groups of organic compounds.

The course aims to make students able to:

1. Write and call the main organic compounds.

2. They study, evaluate and apply the methods employed in food production, food preservation and analysis which induce reactions between organic compounds.

3. Study related disciplines such as Food Chemistry and Biochemistry as they know the properties of the building blocks.

4. Monitor the developments in the international literature

**General Competences**

*Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?*

*Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research*

*Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking …… (Other…….citizenship, spiritual freedom, social awareness, altruism etc.) …….*

- Individual/Independent work
- Group/Team work

## 2. COURSE CONTENT

• Creation, writing and stereochemistry of organic compounds.

• Chemical bonds, atomic and molecular - Hybridization, Coordination.

• Stereochemistry and stereoisomerism.

• Aromaticity conjugated-Inductive effect.

• Aliphatic and aromatic hydrocarbons, alcohols, phenols, ethers, sulfur compounds, carboxylic acids, esters, amines, synthetic polymers, heterocyclic compounds (nomenclature properties, the manufacture, use).

• Structural Biochemistry: Lipids, carbohydrates, amino acids, peptides, proteins (classification, origin, structure, isomerism, main members, physical and chemical properties).

• Nucleosides, nucleotides, nucleic acids (distinction, structures, states and properties).

• Summary Dynamic Biochemistry: Enzymes, coenzymes (structure, mode of action).

• Introduction to the metabolism-Bioenergetic

## 3. TEACHING METHODS - ASSESSMENT

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|---|---|---|
| **MODES OF DELIVERY** *Face-to-face, in-class lecturing, distance teaching and distance learning etc..* | In class lecturing | |
| **USE OF INFORMATION AND COMMUNICATION TECHNOLOGY** *Use of ICT in teaching, Laboratory Education, Communication with students* | E class | |
| **COURSE DESIGN** *Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc. The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.* | ***Activity/Method*** | ***Semester workload*** |
| | Lectures | 50 |
| | Laboratory Classes | 50 |
| | Personal Study | 25 |
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| | ***Total*** | ***125*** |
| **STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS**<br>*Detailed description of the evaluation procedures:*<br><br>*Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.*<br>*Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.* | Written final exam (100%) which includes:<br>- Multiple choice questions<br>- short- answer questions,<br>- open-ended questions,<br>- problem solving,<br>- written work, essay/report, | |

## 4. SUGGESTED BIBLIOGRAPHY

*-Suggested bibliography:*


1. Αρχές και εφαρμογές της ανοργάνου, οργανικής και βιολογικής χημείας, 1η / 2000, Caret/Denniston/Topping, Εκδότης: BROKEN HILL PUBLISHERS LTD
2. ΟΡΓΑΝΙΚΗ ΧΗΜΕΙΑ, Έκδοση: 1η/2017, John McMurry, Εκδότης: ΙΔΡΥΜΑ ΤΕΧΝΟΛΟΓΙΑΣ & ΕΡΕΥΝΑΣ-ΠΑΝΕΠΙΣΤΗΜΙΑΚΕΣ ΕΚΔΟΣΕΙΣ ΚΡΗΤΗΣ
3. Οργανική χημεία, Έκδοση: 3η έκδ./2001, Meislich Herbert,Neckamkin Howard,Sharefkin Jacob,Εκδότης: ΕΚΔΟΣΕΙΣ Α. ΤΖΙΟΛΑ & ΥΙΟΙ Α.Ε.
4. Βασική οργανική χημεία, Έκδοση: 1η έκδ./2008, Σπηλιόπουλος Ιωακείμ, Εκδότης: ΕΚΔΟΣΕΙΣ ΣΤΑΜΟΥΛΗ ΑΕ