

COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGR_201	SEMESTER	2 nd
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		3	
laboratory exercises		2	
TOTAL		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>	SPECIAL BACKGROUND SPECIALISED GENERAL KNOWLEDGE		
PREREQUISITE COURSES:	There are no prerequisite courses.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek.		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 																
<p>By the end of this course the student will be able to:</p> <ul style="list-style-type: none"> • understand the chemical formulas and nomenclature of organic compounds • know the main classes of organic compounds and their basic reactions • explain the structure, stability and activity of aromatic compounds using the theory of resonance • apply the basic laboratory techniques of Organic Chemistry 																
<p>General Competences</p> <p><i>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?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td style="width: 50%; border: none;"><i>Project planning and management</i></td> </tr> <tr> <td style="border: none;"><i>Adapting to new situations</i></td> <td style="border: none;"><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td style="border: none;"><i>Decision-making</i></td> <td style="border: none;"><i>Respect for the natural environment</i></td> </tr> <tr> <td style="border: none;"><i>Working independently</i></td> <td style="border: none;"><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td style="border: none;"><i>Team work</i></td> <td style="border: none;"><i>Criticism and self-criticism</i></td> </tr> <tr> <td style="border: none;"><i>Working in an international environment</i></td> <td style="border: none;"><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td style="border: none;"><i>Working in an interdisciplinary environment</i></td> <td style="border: none;"><i>.....</i></td> </tr> <tr> <td style="border: none;"><i>Production of new research ideas</i></td> <td style="border: none;"><i>Others...</i></td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>.....</i>	<i>Production of new research ideas</i>	<i>Others...</i>
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By the end of this course the student will, furthermore, have developed the following skills (abilities):

- Ability to demonstrate knowledge and understanding of concepts and applications related to Organic Chemistry
- Study skills needed for continuing professional development.
- Ability to interact with others on chemical or multidisciplinary issues.

Generally by the end of this course the student will have developed the following general abilities (from the above list)

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Respect for the natural environment

Criticism and self-criticism

3. SYLLABUS

- Introduction to Organic Chemistry and Organic Compounds
- Classification and Nomenclature of Organic Compounds
- Hybridization in Organic Compounds
- Isomerization and Stereochemistry
- Mechanisms of Organic Reactions
- Aliphatic hydrocarbons
- Alkyl halides
- Alcohols
- Carbonyl compounds (aldehydes, ketones) and derivatives
- Carboxylic Acids and Derivatives
- Isoprenoid compounds
- Resonance
- Aromatic compounds and derivatives

Laboratory Exercises

- Introduction to the Laboratory - Safety and health rules
- Recrystallization, Melting point
- Reactions of hydrocarbons
- Reactions of alcohols
- Detection of carbonyl group
- Detection and properties of amino acid
- Properties of mono- and disaccharides
- Determination of pI of the amino acid glycine

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face lectures and laboratory exercises.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	<ul style="list-style-type: none"> • Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. • Use of ICTs in student communication (learning support through the e-class platform). 	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i>	Activity	Semester workload
	Lectures	39

<p>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.</p> <p>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</p>	Laboratory practice	16
	Writing short lab reports	8
	Private study time of the students for the lab preparation and final examination - Participation in the examinations	62
	Course total (25 work load for each ECTS credit)	125
<p>STUDENT PERFORMANCE EVALUATION</p> <p>Description of the evaluation procedure</p> <p>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</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p>	<p>1. Laboratory work (Average score of individual reports of laboratory exercises) (A)</p> <p>2. Written final examination (B)</p> <p><i>Each case is graded on a scale of 0-10</i></p> <p>Final grade (FG): $FG = 0.3A + 0.7B$</p> <p><i>Minimum passing grade: 5 (Grade: 0-10)</i></p> <p>3. All the above are taking place in Greek.</p>	

5. ATTACHED BIBLIOGRAPHY

<p>Suggested bibliography :</p> <ol style="list-style-type: none"> 1. J. McMurry, Organic Chemistry, 8th Edition, 2012. 2. Introduction to Organic and Biological Chemistry Stuart J. Baum and John W Hill, Macmilan: New York, NY. 1993. <p>- Related academic sources and journals::</p> <p>The Journal of Organic Chemistry, (ACS Publications) https://pubs.acs.org/journal/jocea Biochemistry, (ACS Publications) https://pubs.acs.org/journal/bichaw</p>
