

COURSE GUIDE: 2015-16

COURSE DETAILS			
Name :	Organic Chemistry I		
Code :	50902208	Plan :	Chemistry degree (2009)
Academic year :	2016-2017	Level :	Degree
Course :	2nd	Type :	Obligatory
Semester :	1st semester		
TIME DISTRIBUTION IN ACCORDANCE WITH REGULATION			
ECTS :	6	In-class hours:	45
		Not in-class hours:	105
		Total time (in hours):	150
USE OF VIRTUAL PLATFORM:			Yes

LECTURER DETAILS			
Name	Ignacio Fernández de las Nieves		
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Personal webpage	Web de Fernández de las Nieves, Ignacio		

ACTIVITIES ORGANIZATION		
<i>Planned activities for learning and workload distribution per activity (in hours)</i>		
I. STUDENT'S ACTIVITIES (In-class / Online)	• Seminars [Example]	0,0
	• Teaching group [Example]	26,0
	• Work group / small group [Example]	19,0
	<i>Total In-class/Online time :</i>	
II. STUDENT'S AUTONOMOUS ACTIVITIES (not in-class)	•	105,0
	<i>Total not in-class time :</i>	
TOTAL WORKING HOURS		150,0

ELEMENTS OF INTEREST FOR COURSE LEARNING	
Justification of contents	
The current subject shares academic course with Organic Chemistry II in the second semester. Both of	

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them intend to establish the basic background in Organic chemistry which will enable to develop all the competencies needed in a chemist.

Other courses related

This subject is part of the Organic Chemistry basic module of 27 ECTS credits, and it is closely connected with the first-year Chemistry course, with Materials Science course and with the Organic Chemistry continuation course.

Minimum knowledge required to deal with the Course

It is necessary to have a good knowledge of chemistry, at least the required level to pass the first-year Chemistry course. Specifically, it would be useful to review the chemistry of organic functional groups and their nomenclature and formulation. All the recommended bibliography or reading is mostly in English.

COMPETENCIES

General competencies

General objectives of the University of Almería

- Ability to solve problems
- Oral and written communication skills in their own language
- Ability to work in a team

Other general objectives

- Understand and achieve the principles of the subject
- Application of knowledge

Specific competencies developed

Transversal

UAL 1. Ability for performing analysis and abstracting.
UAL 3. Oral and written communication skills in their own language.
UAL 6. Ability to solve problems.
UAL 8. Ability to work in a team.

Specific

E-C2. Main types of chemical reactions and their main features associated with them.
E-C4. Main techniques of structural investigations, including spectroscopy.
E-C10. Structural aspects of the chemical elements and their compounds, including stereochemistry.
E-C11. Properties of aliphatic, aromatic, heterocyclic, and organometallic compounds.
E-C12. The nature and behavior of the functional groups in organic molecules.
E-Q1. Ability to demonstrate knowledge and understanding of essential facts, concepts, principles and theories related to chemistry.
E-Q2. Ability to apply this knowledge to problem solving in both qualitative and quantitative terms using previously developed models.

LEARNING OBJECTIVES/OUTCOMES

Ability to solve problems: Analysis and overview of the problem, over proving information sources. Recognize a problem and capacity to solve it by breaking it down into manageable parts. Application of

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theoretical contents of the course in solving a particular problem, within the provided timing.

Oral and written communication in their own language: abilities to disseminate the knowledge acquired using a scientifically rigorous and grammatically correct language.

Ability to work in a team: Participation in seminars. Integration and active collaboration with others in achieving goals. Making in a responsible way and in correct timing, cooperative tasks that have been assigned within the group.

Understand and achieve the principles of the subject: Expand the knowledge on organic chemistry. Deepen it in a comprehensive way.

Application of knowledge: Application of knowledge and skills academically acquired towards problems and situations of real life in the field of organic chemistry.

- Rationalize organic molecules as three-dimensional structures with defined conformation and stereochemistry.
- Establish the influence of the functional groups which constitute a molecule on its structural, physical and chemical properties.
- Basic knowledge about the major spectroscopic techniques and their application in the structural elucidation of simple organic molecules.
- Understanding the importance of reaction mechanisms in the study of organic reactions.
- Based on the above, prediction of the potential reaction products according to the possible types of reactions and reactive centers of the substrate.
- Ability to prepare simple synthetic approaches.

CONTENTS			
Module	Introduction to the course		
Content	Introduction to the course		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Seminars [example]		0,0
Work group [example]	Practical case [example]		0,0
Seminars [example]	Lecture, debate [example]		1,0
Description of autonomous workload			
The student should become familiar with the elements developed in this course guide. He should pay particular attention to skills, to learning objectives and competencies assessment procedure. In addition, he must make a first contact with the proposed literature.			
Module	Structure and properties of organic compounds		
Content	Some background in Organic compounds		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Work group	Seminars		2,0

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Description of autonomous workload			
Review and expansion about nomenclature and formulation of organic compounds that the student has studied in previous courses. Representation of organic structures. Types of organic groups and their functional groups. Reactivity of organic molecules. Classification of reactions in organic chemistry.			
Content	Structure and Properties of Organic Molecules		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		2,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Structure and Stereochemistry of Alkanes		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		2,0
Work group	Practical case		1,0
Description of autonomous workload			
Content	Stereochemistry		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		2,5
Teaching group	Audiovisuals		0,5
Work group	Practical case	Molecular 3D models and audiovisuals on virtual machine	1,0
Work group	Practical case		1,0
Description of autonomous workload			
Content	Review of Module I		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Work group	Practical case		1,0
Description of autonomous workload			
The student will review the knowledge gained from a global approach and with a practical sense.			
Module	Reactivity of organic compounds		
Content	The study of chemical reactions		

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Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Seminars [example]		2,0
Work group [example]	Practical case [example]		1,0
Description of autonomous workload			
Content	Alkyl halides		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		3,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Alkenes		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		4,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Alkynes and Dienes		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		3,0
Work group	Practical case		1,0
Description of autonomous workload			
Content	Alcohols and Ethers		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		3,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Review Module II		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>

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Work group	Practical case	Multimedia media	1,0
Description of autonomous workload			
Module	Structural Characterization of organic compounds through spectroscopic methods		
Content	Infrared spectroscopy, ultraviolet spectroscopy and mass spectrometry		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		1,0
Description of autonomous workload			
Content	Nuclear Magnetic Resonance Spectroscopy		
Learning system and methodology			
<i>System</i>	<i>Learning procedures and activities</i>	<i>Observations</i>	<i>Hours In-class/ Online</i>
Teaching group	Lectures		1,5
Work group	Practical case	Audiovisuals	0,5
Work group	Others	Audiovisuals on virtual machines	0,5
Work group	Practical case		1,5
Description of autonomous workload			

EVALUATION SYSTEM

Assessment criteria

Mode A

Any student enrolled in Organic Chemistry I may attend to a global examination of the subject (official call) previously set by the Faculty. The exam will consist of a written test, which will assess general, transversal (Ual, Ual3 and Ual6) and specific (E-C2, E-C4, E-C10, E-C11, E-C12, E-Q1 and E-Q2) competencies.

To pass the course, the student must obtain at least a rating of 5 out of 10.

Mode B

It applies during the regular teaching period. Students who wish to apply to this option must submit to the teacher responsible for teaching group the corresponding "fiche" within a maximum of three weeks from the start of classes. This specific evaluation system will apply all the basic and transversal competencies (see distribution further below), as well as specifics (E-C2, E-C4, E-C10, E-C11, E-C12, E-Q1 and E-Q2). This evaluation system is an alternative to option A.

- The attendance track will be held by listing the students at least 15 times along the course, with no distinction between teaching or working groups. To get scoring in here the student should have been attended at least an 80%.
- Teachers will oversee the participation and progress of the students in the class and will make the corresponding annotations. This information may be discussed during tutorial time.

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- In the teaching group participation and harnessing will be tracked by the in situ formulation of questions, whether verbal or written, related to contents developed previously during the class.
- In work groups the student must solve, individually and outside the classroom, some selected exercises, problems and/or activities, which will be provided by the professor. They shall be returned to the corresponding professor in the deadlines that he may indicate. The work done by each student will be evaluated by little exams to be answered in the classroom.
- A global written exam will be conducted when finalizing the course, in time with the official call in June, in which the student shall achieve a minimum rating of 4 points out of 10.

To pass the course it is required a minimum score of 5 points out of 10. The final mark will be the result of applying the following weights:

- Class attendance: 10%
- Participation and achievement in teaching group (Ual1 and Ual3): 30%
- Participation and achievement in work group (Ual1, Ual3, Ual6 and Ual8): 40%
- Final written exam (minimum score of 4) (Ual1, Ual3 y Ual6): 20%

Marking system

	<i>Activity</i>	<i>(Number of hours)</i>	<i>Percentage</i>
I. STUDENT'S ACTIVITIES (In-class/Online)	• Seminars [example]		0%
	• Teaching group [example]		21%
	• Work group/ small group [example]		28%
II. STUDENT'S AUTONOMOUS ACTIVITIES (Autonomous work)	• Individual work [example]		51%

Assessment instruments

- Tests, exercises, problems.
- Observations of the process.
- Final tests (whether written or oral).

Monitoring mechanisms

- Attendance at tutorials
- Attendance and participation in seminars
- Access to the virtual platform
- Providing of classroom activities
- Providing of virtual platform activities
- Others: Class attendance

BIBLIOGRAPHY

Recommended bibliography

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Organic Chemistry (Wade, L. G.) – Followed bibliography along the course.
Nomenclatura y representación de los compuestos orgánicos (Quiñoá, E.; Riguera, R.)
Química Orgánica (Vollhardt, K.P.C.; Schore, N.E.)
Química Orgánica (Klein, D.)

Bibliography existing in the library of the University of Almeria

<http://almirez.ual.es/search/x?SEARCH=50902208>

WEB ADRESSES

<http://lms.ual.es/webct> - Aula Virtual

<http://www.librosite.net/> - Libro Site (Pearson Educación)

<http://www.pearsonhighered.com/wade/> - Wade online (en inglés)

<http://bcs.whfreeman.com/vollhardtschore5e> - Vollhardt 5ª edición (en inglés)

<http://www.ual.es/~ralvarez/scorm/> - Ayuda al estudio: REACCIONES ORGÁNICAS

<http://www2.ual.es/NMRMBC/> - Web del profesor de inglés

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