COURSE GUIDE: 2013-14

COURSE DETAILS

Name :	Organic Chemistry I		
Code :	50902208	Plan :	Chemistry degree (2009)
Academic year :	2014-2015	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

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ACTIVITIES ORGANIZATION

Planned activities for learning and workload distribution per activity (in hours)

I. STUDENT'S ACTIVITIES (In-class / Online)	• Seminars [Example]	0,0
	• Teaching group [Example]	26,0
	• Work group / small group [Example]	0,0
	Total In-class/Online time :	45,0
II. STUDENT'S AUTONOMOUS ACTIVITIES (not in-class)	•	105,0
	Total not in-class time :	105,0
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 te second semester. Both of

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

You must 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

Other general objectives

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

Specific competencies developed

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

LEARNING OJECTIVES/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 theoretical contents of the course in solving a particular problem, within the provided timing.
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			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
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	Nomenclature of Organic compounds		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Work group	Seminars		2,0
Description of autonomous workload			
Review and expansion about nomenclature and formulation of organic compounds that the student has studied in previous courses.			
Content	Structure and Properties of Organic Molecules		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
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			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		2,0
Work group	Practical case		1,0
Description of autonomous workload			

Content	Stereochemistry		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		3,0
Work group	Practical case	Multimedia media and molecular models	1,0
Work group	Practical case		1,0
Description of autonomous workload			

Content	Review of Module I		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
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		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
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			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		3,0
Work group	Practical case		2,0
Description of autonomous workload			

Content	Alkenes		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		4,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Alkynes and Dienes		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		3,0
Work group	Practical case		1,0
Description of autonomous workload			
Content	Alcohols and Ethers		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		3,0
Work group	Practical case		2,0
Description of autonomous workload			
Content	Review Module II		
Learning system and methodology			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
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			
System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		1,0
Description of autonomous workload			
Content	Nuclear Magnetic Resonance Spectroscopy		
Learning system and methodology			

System	*Learning procedures and activities*	*Observations*	*Hours In-class/ Online*
Teaching group	Lectures		2,0
Work group	Practical case	Multimedia media	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 the competencies A1 (understand and achieve the principles of the subject), A2 (applying knowledge) and B6 (problem solving). 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 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.
- 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: 30%
- Participation and achievement in work group: 40%
- Final written exam (minimum score of 4): 20%

Marking system

	Activity	*(Number of hours)*	*Percentage*
I. STUDENT 'S ACTIVITIES (In-	• Seminars [example]		0%

class/Online)	• Teaching group [example] • Work group/ small group [example]		21% 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

Organic Chemistry (Wade, L. G.) – Followed bibliography along the course.

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)