

COURSE SYLLABUS: 2019-20

COURSE DETAILS			
Course:	Organic Chemistry I		
Ccourse code:	50902208	Plan:	Chemistry degree (2009)
Academic year:	2019-2020	Level:	Degree
Degree Year:	2nd	Type:	Obligatory
Semester:	1st semester		

TIME DISTRIBUTION IN ACCORDANCE WITH REGULATION			
ECTS:	6	Total time (in hours):	150

USE OF VIRTUAL PLATFORM:	Yes
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LECTURER DETAILS			
Name	Ignacio Fernández de las Nieves		
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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 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
<i>General objectives of the University of Almería</i>
<ul style="list-style-type: none">Understand and achieve the principles of the subject

- Application of knowledge

Other general objectives

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

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 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.

PROGRAMME

Contents

0. Background in Organic chemistry.
1. Structure and Properties of Organic Molecules.
2. Structure, Conformation and Stereochemistry of Alkanes.
3. Stereochemistry.
4. The study of chemical reactions.
5. Alkyl halides.
6. Alkenes.
7. Alkynes and Dienes.
8. Alcohols and Ethers.
9. Infrared spectroscopy and mass spectrometry. Ultraviolet spectroscopy.
10. Nuclear Magnetic Resonance Spectroscopy.

Learning system and Methodology

- Lectures, seminars and academically addressed activities, exercises, teamwork, molecular 3D models and audio-visuals on virtual machine

Teaching Innovation Activities

Functional Diversity

Students with disabilities or special educational needs can contact the Delegation of the Rector for Functional Diversity (<http://www.ual.es/discapacidad>) to receive the appropriate guidance or advice and facilitate a better use of their training process. Likewise, they may request the implementation of the necessary adaptations of content, methodology and evaluation that guarantee equal opportunities in their academic development. The treatment of information about these students, in compliance with the LOPD, is strictly confidential. Teachers in charge will apply the adaptations approved by the Delegation, after notifying the Faculty and the course coordinator.

EVALUATION SYSTEM

Assessment criteria

Option A

Any student enrolled in Organic Chemistry I may attend to a global examination of the subject (**official call**) previously set by the Faculty, according to the conditions established by the regulations of the University of Almería. 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.

Option B

It applies during the regular teaching period (first quarter). To this specific evaluation system 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.

- 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 **working 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. Teamwork will also be assessed based on the teacher's observations and specific written tests during the corresponding sessions.
- At least two **intermediate written exams** will be done according to the schedule of the course. The announcement will be done at the beginning of the course.
- A **global written exam** will be conducted when finalizing the course, in time with the official call in February.

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:

- Participation and use in teaching group (Ual1 and Ual3): 10%
- Activities and exercises in working group (Ual1, Ual3, Ual6 and Ual8): 30%
- Intermediate exams (Ual1, Ual3 and Ual6): 40%
- Final written exam* (Ual1, Ual3 y Ual6): 20%

* This test is mandatory and requires a minimum mark of 4 out of 10 in order to be evaluated together with the rest of elements. If the obtained mark is below 4, the student would have failed the subject, and the overall mark would be the one obtained in the cited exam. If the student does not perform this final written exam, his/her final mark would be "no presentado".

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
- Delivery of activities in class

BIBLIOGRAPHY

Recommended bibliography

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