



Universitat de Lleida

DEGREE CURRICULUM  
**ORGANIC CHEMISTRY**

Coordination: MORERA PRAT, JOSEP MARIA

Academic year 2023-24

## Subject's general information

<b>Subject name</b>	ORGANIC CHEMISTRY			
<b>Code</b>	102345			
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	Degree	Course	Character	Modality
	Not informed	3	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB	PRAULA	TEORIA
	<b>Number of credits</b>	0.4	2.6	3
	<b>Number of groups</b>	1	1	1
<b>Coordination</b>	MORERA PRAT, JOSEP MARIA			
<b>Department</b>	ENVIRONMENT AND SOIL SCIENCES AND CHEMISTRY			
<b>Teaching load distribution between lectures and independent student work</b>	60 hours classroom lessons Self study 90 hours			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan			
<b>Distribution of credits</b>	3 teory, 2.6 praula, 0.4 pralab			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
MORERA PRAT, JOSEP MARIA	josepmaria.morera@udl.cat	6	

## Subject's extra information

It is **COMPULSORY** that the students bring the following elements of individual protection (EPI) to the practices at the laboratory.

- Laboratory gown from UdL
- Protection glasses
- Mechanical protection gloves

They can be purchased through the shop Údels of the UdL:

C/ Jaume II, 67 baixos  
Centre the Cultures i Cooperació Transfronterera

<http://www.publicacions.udl.cat/>

There will be a specific service for the *Campus Universitari d'Igualada*.

The use of other elements of protection (for example caps, masks, gloves of chemical or electrical risk, etc.) will depend on the type of practice to be done. In that case, the teacher will inform of the necessity of specific EPI.

Not bringing the EPI's described or not fulfilling the norms of general security that are detailed below imply that the student can not access to the laboratories or have to go out of them. The no realisation of the practices for this reason imply the **consequences in the evaluation** of the subject that are described in this course guide.

### GENERAL NORMS OF SECURITY IN LABORATORY PRACTICES

- Keep the place of realisation of the practices clean and tidy. The table of work has to be free from backpacks, folders, coats...
- No short trousers or short skirts are allowed in the laboratory.
- Closed and covered footwear is compulsory in the laboratory.
- Long hair needs to be tied.
- Keep the laboratory gown laced in order to be protected from spills of chemicals.
- Bangles, pendants or wide sleeves are not allowed as they can be trapped.
- Avoid the use of contact lenses, since the effect of the chemical products is much bigger if they enter between the contact lense and the cornea. Protection over-glasses can be purchased.
- No food or drink is allowed in the laboratory.
- It is forbidden to smoke in the laboratories.
- Wash your hands whenever you have contact with a chemical product and before going out of the laboratory.
- Follow the instructions of the teacher and of the laboratory technicians and ask for any doubt on security.

For further information, you can check the following document of the *Servei de Prevenció de Riscos Laborals de la UdL*: <http://www.sprl.udl.cat/alumnes/index.html>

## Learning objectives

At the end of the course the student must be able to:

- Know the basic rules of nomenclature of organic compounds
- Dissect the resonant forms of a compound and judge its importance
- Remember the main properties of organic compounds according to their functional group
- Justify the products of the organic reactions based on the reaction mechanisms
- Dissect the products of the organic reactions based on the reaction mechanisms
- Planning simple synthesis of organic products

## Competences

### Basic

B01 That students have demonstrated to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge coming from the vanguard of his/her field of study.

B02 That students know how to apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

B03 That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues.

B04 That students can transmit information, ideas, problems and solutions to a specialized and non-specialized public.

B05 That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

### Transversal

CT1. To develop a proper understanding and oral and written expression of Catalan and Spanish.

CT5. To apply essential notions of scientific thinking.

### General competences

CG3. To synthesize basic and technological subjects, which enable them to learn new methods and theories, and provide them with versatility to adapt to new situations.

### Specific competences

CE4. To apply the principles of fundamental knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering.

## Subject contents

1. -Formulation
2. -Organic reactions
3. -Alkanes
4. -Alkenes and alkynes
5. -Aromatic compounds
6. -Haloalkanes
7. -Organometallic compounds
8. -Alcohols and ethers
9. -Aldehydes and ketones
10. -Carboxylic acids and derivatives
11. -Amines

## Methodology

- Master classes. Theoretical explanation reinforced with examples.
- Problems. Discussion and correction of exercises proposed at home. The exercises will be provided to the student in a dossier.
- Practices. In the laboratory for groups. Each group will have to submit a report.
- Written evidence. Exercise resolution by the student individually.

## Development plan

Week	Methodology	Content	Classroom/Virtual hours	Self study hours
1-8	Classroom lessons/problems	Subjects 1-6	32	55
9	Exam	Subjects 1-6	2	
10-14	Classroom lessons/problems	Subjects 7-11	20	30
15	Laboratory practices	Laboratory practices	4	5
16	Exam	Subjects 7-11	2	
17-18	Tutorial			
19	Referral exam	Subjects 1-11		

## Evaluation

In the middle of the course there will be an eliminatory midterm exam. At the end of the course there will be a second midterm exam and an final exam. At the end of the course the student who passed the first midterm exam will have the possibility of taking the second midterm exam or doing the final exam. The student who has suspended the first midterm exam may only take the final exam. Each midterm exam will be worth 40% of the final mark of the subject and the final exam will be 80%.

The student who suspends may opt for a recovery test in the established data.

The exercises presented and evaluated and the practices (work in the laboratory + report) will weigh 10% each one of the final mark of the subject.

Students who have permission to be evaluated through alternative evaluation (see requirements and procedure in the evaluation regulations) must take the final exam, which will weigh 90% of the final mark of the subject, and the laboratory practicals, which will weigh 10% of the final mark of the subject.

## Bibliography

### Basic:

Peterson, W. R. Nomenclatura de las sustancias químicas. 5ª ed. Barcelona: Editorial Reverté, SA, 2020. ISBN 9788429176094.

Sales i Cabré, Joaquim; Vilarrasa i Llorens, Jaume. Introducció a la nomenclatura química : inorgànica i orgànica. 5ª ed. Barcelona [etc.]: Reverté, cop. 2003. ISBN 8429175512.

Peterson, W.R. Fundamentos de nomenclatura química. Barcelona: Editorial Reverté, SA, 2020. ISBN 9788429175745.

### Complementary:

Vollhardt, K. Peter C. Química orgánica. 1. Barcelona: Omega, DL 1990. ISBN 8428208824.

Bruice, Paula Yurkanis. Química orgánica. 5ª ed. Naucalpan de Juárez, MX: Pearson Prentice Hall, cop. 2008. ISBN 9789702607915.

Streitwieser, Andrew; Heathcock, Clayton H. Química orgánica. 3ª ed. Madrid [etc.]: Interamericana-McGraw-Hill, 1986. ISBN 8476053533.

Wade, Leroy G; Montaña Pedrero, Ángel-Manuel. Química orgánica. 5ª ed. Madrid, [etc.]: Pearson Educación, cop. 2004. ISBN 9788420541020.

Ege, Seyhan N. Química orgánica : estructura y reactividad. Barcelona [etc.]: Reverté, 1997. ISBN 8429170650 (O.C.).

Allinger, Norman L. ... [et al.]. Química orgánica. 2. Barcelona [etc.]: Reverté, DL 1991. ISBN 8429170154 (O.C.).