



Universitat de Lleida

## DEGREE CURRICULUM **BASIC CHEMISTRY**

Coordination: GATIUS CORTIELLA, FERNANDO

Academic year 2023-24

## Subject's general information

Subject name	BASIC CHEMISTRY			
Code	100602			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Human Nutrition and Dietetics	1	COMMON/CORE	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRALAB	PRAULA	TEORIA
	Number of credits	1	2	3
	Number of groups	3	2	1
Coordination	GATIUS CORTIELLA, FERNANDO			
Department	ENVIRONMENT AND SOIL SCIENCES AND CHEMISTRY			
Teaching load distribution between lectures and independent student work	Lectures 60h - Main 30h - Practical 10h - Seminars 20h Independent student work 90h			
Important information on data processing	Consult <a href="#">this link</a> for more information.			
Language	Català			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
DAVID , CALIN ADRIAN	calinadrian.david@udl.cat	1,2	
GALCERAN NOGUES, JOSE JUAN	josep.galceran@udl.cat	1,2	
GATIUS CORTIELLA, FERNANDO	fernando.gatius@udl.cat	4,1	
GUILLÉN MARTÍNEZ, PEDRO	pere.guillen@udl.cat	3,5	

## Subject's extra information

**VERY IMPORTANT:** if any activity cannot be carried out normally, it will be replaced by an alternative activity or followed virtually. Students must check Campus Virtual to find any changes that may occur, which will be communicated by means of a message in this platform.

The basic training of future graduates in Human Nutrition and Dietetics necessarily includes the understanding of chemical concepts and the acquisition of skills for their application to practical cases in a professional future or in other areas of their studies. It's this basic training, which enables the construction of a solid conceptual framework, what defines the studies in the university.

## Learning objectives

- . The student must be able to understand and describe the chemical compounds and their transformations.
- . The student must be able to apply his knowledge to specific situations in his specialty.
- . The student must know and apply the concepts specified in the theoretical and practical program.
- . The student has to work (both individually and as a part of a team) in solving problems. This subject is (mainly) evaluated with exercises, where the student has to apply the correct formulas with the corresponding units and interpret the results.

### 1) The level of knowledge that the student must have in order to pass the course implies:

To understand and apply the concepts specified in the theoretical program.

To know the concepts used to interpret different aspects of chemical transformations (and products).

To know the basic scientific terminology of chemistry (both for organic and inorganic compounds).

### 2) The main teaching objectives to be achieved are:

To understand and describe the structure of various compounds.

To know the different characteristics (and intrinsic properties) of substances.

To know the chemistry of food.

In addition, students will learn to apply this knowledge in the interpretation of specific situations.

## Competences

### General

CG3. Recognize one's own limitations and the need to maintain and update one's professional competence, with special recognize one's own limitations and the need to maintain and update professional competence, giving special importance to learning, in an autonomous and continuous way, new knowledge, products and techniques in nutrition and food, as well as motivation for quality.

### Basic

CB2 The students have to know how to apply their knowledge to their work or vocation in a professional manner and possess the competencies and the skills that are usually demonstrated through the development and defense of arguments and problem solving within their field of study.

### Transversal

CT5. To acquire essential notions of scientific thinking.

### Specific

CE1. To know the chemical, biochemical and biological fundamentals of application in human nutrition and dietetics.

## Subject contents

- SUBJECT PROGRAMME:

#### THEORY:

Chapter 1. Introduction. Atomic Structure. Stoichiometry. Solutions. Gases.

Chapter 2. Acid - base Reactions.

Chapter 3. Solubility and Precipitation.

Chapter 4. Introduction to Organic Chemistry.

Chapter 5. Functional groups.

Chapter 6. Isomerism.

Chapter 7. Reactions in Organic Chemistry.

#### PRACTICE:

1. Safety and hygiene in the (chemistry) laboratory.

2. Preparation and titration of solutions.

3. Molecular models.

4. Buffers.

5. Computer programs to practice molecular geometry and equilibria.

## Methodology

The course is divided into theoretical classes (all students), along with problem solving sessions, questions, exercises and seminars (in smaller groups) and laboratory sessions (also in smaller groups). Sessions of seminars and laboratory will be in small groups for a better interaction between the teacher and students.

## Evaluation

EXAM / ACTIVITY	% QUALIFICATION
1st Partial Ex.	20%
2nd Partial Ex.	50% (with final exam)
Seminars / Exercises	15%
Practical sessions	15%

Practical sessions are mandatory and both an exam (about the contents of each practical session) and the attitude in the laboratory will be evaluated in these activities.

The active participation of students will be taken into account in the seminar classes (in small groups) but also an additional academic work (dossier of exercises) will be evaluated.

Those students who can demonstrate the impossibility of attending class during the course due to work reasons, can request at the beginning of the course (from the center's studies director) an alternative evaluation that will take place on the same day of the second partial exam and will count for 85% of the final qualification of the subject. These students must attend the practical sessions and evaluate themselves in a test-type exam that will count for the remaining 15% of the subject's qualification.

## Bibliography

PETRUCCI R.; HARWOOD, W.S. *Química general*. Prentice Hall. Madrid, 1998.

PEIDRÓ, J.- *Problemas de química para el primer ciclo : un método didáctico, activo, para aprender a resolver problemas*, 3 vol. EUB, Barcelona, 1996.

SAÑA, J. - *Química per a les ciències de la naturalesa i l'alimentació* - Vicens Vives – 1993.

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CAREY F. A.; *Química Orgànica*. 3ª Ed. McGrawHill 1999.

HART H., CRAINE L.E., HART D.J., HADAD C.M.; - *Química Orgánica*. Ed. McGraw-Hill. 12ª Edición 2007.

MASTERTON W.L., HULEY C.N.; *Principios y reacciones*. 4ª ed. THOMSON-PARANINFO. 2003.

MEISLICH. - *Química Orgànica*. 3ª Ed. McGraw Hill 1998 .

QUIÑOÀ E. Y RIGUERA R., *Cuestiones y ejercicios de Química Orgànica*. Ed.- McGraw Hill 1999.