



Universitat de Lleida

DEGREE CURRICULUM
BASIC CHEMISTRY

Coordination: GATIUS CORTIELLA, FERNANDO

Academic year 2017-18

Subject's general information

Subject name	BASIC CHEMISTRY			
Code	100602			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Typology	Modality
	Double bachelor's degree: Degree Physiotherapy and Degree in Human Nutrition and Dietetics	1	COMMON	Attendance-based
	Bachelor's Degree in Human Nutrition and Dietetics	1	COMMON	Attendance-based
ECTS credits	6			
Groups	2GG,3GM,6GP			
Theoretical credits	0			
Practical credits	0			
Coordination	GATIUS CORTIELLA, FERNANDO			
Department	QUIMICA			
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 this link for more information.			
Language	Català/Castellà			
Office and hour of attention	-			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CASERO MAZO, EUDOXIO TOMÁS	casero@quimica.udl.cat	5,5	
DAGO BUSQUETS, ANGELA	adago@quimica.udl.cat	7	
GARCÉS GONZÁLEZ, JOSEP LLUÍS	jlgarces@quimica.udl.cat	,4	
GATIUS CORTIELLA, FERNANDO	fernando.gatius@udl.cat	4,3	
LARA AYALA, ISABEL	lara@quimica.udl.cat	,8	

Subject's extra information

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

The main competence of this subject is to understand the fundamentals of chemistry in Human Nutrition and Dietetics.

Students who pass the course must achieve specific competences:

To know how to use the equipment in the laboratory.

To know how to perform basic techniques used in the preparation of samples for their analysis.

To know how to describe and interpret the properties of different substances.

To use the correct environment for their training (Virtual Campus, email, electronic books).

To work in solving different problems both individually and as a part of a team.

Students who pass the course must achieve the strategic competence:

Making proper use of critical and scientific thinking.

Subject contents

- SUBJECT PROGRAMME:

THEORY:

Chapter 1. Introduction.

Chapter 2. Atomic Structure. Stoichiometry. Solutions. Gases.

Chapter 3. Principles of Thermodynamics.

Chapter 4. Acid - base Reactions.

Chapter 5. Solubility and Precipitation.

Chapter 6. Introduction to Organic Chemistry.

Chapter 7. Type and Properties of Organic Compounds.

Chapter 8. Oxygenated Organic Compounds.

Chapter 9. Organic Acids and Derivatives.

Chapter 10. Nitrogenous Compounds.

Chapter 11. Biomolecules.

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.	25%
2nd Partial Ex.	50% (with final evaluation)
Seminars / Exercises	15%
Practical sessions	10%

Practical sessions are mandatory and both a dossier of results (containing also the procedures and the calculations made in 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.

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.

CASERO T., RIBA M., VILARÓ F., VILLORBINA G. *Química Orgànica: Problemes Resolts*. Col·lecció EINES 55. Univ. de Lleida. 2007.

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

HART H., CRAINE L.E., HART D.J., HADAD C.M.; - *Química Orgànica*. 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.