Information about the course

Degree: Bachelor of Science Degree in Human Nutrition and Dietetics

Faculty: Faculty of Medicine and Health Sciences

Code: 1311109 **Name:** Organic Chemistry

Credits: 6,00 ECTS **Year:** 1 **Semester:** 2

Module: Basic Sciences Module

Subject Matter: Química **Type:** Formación Básica

Branch of knowledge:

Department: Biomedical Sciences

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

131A	Gloria Castellano Estornell **(Profesor responsable)**	GLORIA.CASTELLANO@UCV.ES
281ND	Isabel Victoria Peraita Costa **(Profesor responsable)**	iv.peraita@ucv.es

Module organization

Basic Sciences Module

Subject Matter	ECTS	Subject	ECTS	Year/semester
Biología	6	Biology and Genetics	6	1/1
Bioquímica	6	Biochemistry	6	1/2
Química	12	Basic Fundamentals of Chemistry	6	1/1
		Organic Chemistry	6	1/2
Fisiología	12	Physiology	6	1/2
Estadística	6	Biostatistics	6	1/1
Anatomía Humana	6	Human Anatomy	6	1/1
Antropología	12	Anthropology	6	1/1
Microbiología	6	Microbiology and Parasitology	6	1/2
Inglés	6	English	6	1/2

Recommended knowledge

NOMENCLATURE OF ORGANIC COMPOUNDS

Learning outcomes

At the end of the course, the student must demonstrate having acquired the following learning outcomes:

R1 - Hab1 - - Have the ability to collect and interpret data and information on which to base their conclusions, including, when necessary and relevant, reflection on social, scientific or ethical issues within their field of study.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Having the ability to collect and interpret data and information on which to base their conclusions, including, when necessary and relevant, reflection on social, scientific or ethical issues within their field of study.

Type of AR: Competencias

- Being able to handle complex situations or those that require the development of new solutions in both academic and professional settings within their field of study.

- To be able, through arguments or procedures developed and supported by themselves, to apply their knowledge, understanding of these and their problem-solving abilities in complex or professional and specialized work environments that require the use of creative and innovative ideas.

R2 - Compt1 - - To be able, through arguments or procedures developed and supported by themselves, to apply their knowledge, understanding of these and their problem-solving abilities in complex or professional and specialized work environments that require the use of creative and innovative ideas.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Having the ability to collect and interpret data and information on which to base their conclusions, including, when necessary and relevant, reflection on social, scientific or ethical issues within their field of study.

Type of AR: Conocimientos o contenidos

- Having acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and the working methodology in their field of study with a depth that reaches the forefront of knowledge.

Type of AR: Competencias

- Being able to handle complex situations or those that require the development of new solutions in both academic and professional settings within their field of study.

- To be able, through arguments or procedures developed and supported by themselves, to apply their knowledge, understanding of these and their problem-solving abilities in complex or professional and specialized work environments that require the use of creative and innovative ideas.

Assessment system

In-person modality

Assessed learning outcomes	Granted percentage	Assessment tool
	15,00%	Assessment of individual or group activities or practical exercises, which require students to research and organize information related to each subject, and solve cases or problems. This is done through a continuous assessment system throughout the course, which involves the submission and/or presentation of assignments, the objectives and content of which will be set by the instructor.
	20,00%	Evaluation of practical work in the laboratory, or culinary techniques workshop laboratory, through which the acquired skills must be demonstrated and that one is able to use them to solve the different situations and problems that arise in a laboratory; this evaluation may be carried out through one of the following methods, or a combination of several of them: an individual written test, the individual or group performance of a laboratory experiment, the submission of an individual or group report on the work carried out in the laboratory.
	60,00%	Written assessment of the knowledge and skills acquired. This test may consist of a series of open-ended or multiple-choice questions on the theoretical content of the subject and/or practical exercises (problem-solving).
	5,00%	Evaluation of the effectiveness of practical classroom classes, problem-solving or computer science sessions, seminars and tutorials. Through attendance and participation in the various activities planned.

Observations

The laboratory test grade is calculated as follows: 10% of the average of the practical work sheets orlaboratory practical questionnaires (group grade) and 10% of the laboratory practical TEST

exam (individual grade). Attendanceat laboratory practicals is compulsory. Only one absence from the laboratory is permitted if it isduly justified. A minimum grade of 4.0 is required in the written test on the course content and 4.0 in thewritten laboratory test in order to be eligible for the average. For students enrolled for the second time, the passing grades from the previous year are retained. CRITERIA FOR AWARDING HONORS: According to Article 22 of the Regulations Governing theEvaluation and Grading of Courses at the UCV, the distinction of “Honors” maybe awarded by the professor responsible for the course to students who have obtained agrade of “Excellent.” The number of “Honors” awards that may begranted may not exceed five percent of the students included in the same official record,unless this number is less than 20, in which case only one “Honors” award may be granted.

MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Training activities

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

M1	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission
M2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission
M3	Personalized attention in small groups. A period of instruction and/or guidance provided by a tutor to review and discuss the materials and topics presented in classes, seminars, readings, assignments, etc. Student attendance and their gradual progress in understanding the subjects will be evaluated.

M4 Application and sharing of multidisciplinary knowledge. This involves solving a problem that, in subsequent professional practice, would require the application of skills acquired through the modules and that will generate synergies in the assimilation of transversal and specific competencies. Group work skills will be specifically assessed.

M5 Student study: individual preparation of readings, essays, problem solving, seminars, papers, memoirs, etc. for discussion or submission in electronic format.

M7 Individual or group work sessions in groups supervised by the teacher, which take place in spaces with specialized equipment.

M8 Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support of the professor. This aspect can be monitored through attendance and active participation in the practical sessions.

M9 The teacher will present the content, analyze competencies, and explain and demonstrate skills, abilities, and knowledge in the classroom.
The whiteboard, computer, and projector will be used to display texts, graphics, etc.

IN-CLASS TRAINING ACTIVITIES

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS

ASSESSMENT	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Student study: individual preparation of readings, essays, problem solving, seminars, papers, memoirs, etc. for discussion or submission in electronic format. Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support of the professor. This aspect can be monitored through attendance and active participation in the practical sessions.	2,00	0,08

TUTORING	R1	Personalized attention in small groups. A period of instruction and/or guidance provided by a tutor to review and discuss the materials and topics presented in classes, seminars, readings, assignments, etc. Student attendance and their gradual progress in understanding the subjects will be evaluated.	2,00	0,08
LABORATORY	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Individual or group work sessions in groups supervised by the teacher, which take place in spaces with specialized equipment.	8,00	0,32

PRACTICAL CLASSES	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Application and sharing of multidisciplinary knowledge. This involves solving a problem that, in subsequent professional practice, would require the application of skills acquired through the modules and that will generate synergies in the assimilation of transversal and specific competencies. Group work skills will be specifically assessed. Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support of the professor. This aspect can be monitored through attendance and	18,00	0,72

active participation in the practical sessions.
The teacher will present the content, analyze competencies, and explain and demonstrate skills, abilities, and knowledge in the classroom.
The whiteboard, computer, and projector will be used to display texts, graphics, etc.

THEORETICAL CLASSES	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support of the professor. This aspect can be monitored through attendance and active participation in the practical sessions. The teacher will present the content, analyze competencies, and explain and demonstrate skills, abilities, and knowledge in the classroom. The whiteboard, computer, and projector will be used to display texts, graphics, etc.	30,00	1,20
TOTAL			**60,00**	**2,40**

TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS

INDEPENDENT GROUP WORK	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Personalized attention in small groups. A period of instruction and/or guidance provided by a tutor to review and discuss the materials and topics presented in classes, seminars, readings, assignments, etc. Student attendance and their gradual progress in understanding the subjects will be evaluated. Individual or group work sessions in groups supervised by the teacher, which take place in spaces with specialized equipment. Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support	20,00	0,80

of the professor. This aspect can be monitored through attendance and active participation in the practical sessions.

INDIVIDUAL SELF-EMPLOYMENT	R1, R2	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc... for discussion or submission Student study: individual preparation of readings, essays, problem solving, seminars, papers, memoirs, etc. for discussion or submission in electronic format. Individual or group work sessions in groups supervised by the teacher, which take place in spaces with specialized equipment. Practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All of this with the support of the professor. This aspect can be monitored through attendance and active participation in the practical sessions.	70,00	2,80

TOTAL	**90,00**	**3,60**

Description of contents

Description of content necessary for the acquisition of learning outcomes.

Theoretical content:

Block of content	Contents
ORGANIC CHEMISTRY INTRODUCTION	Nomenclature. Basic Concepts: nucleophilicity and electrophilicity, acid-base, reaction mechanisms, kinetic control, and thermodynamic control.
ALKANES, ALKENES, ALKINES	Stereoisomerism. Synthesis and reactivity
OXIGEN COMPOUNDS	ALCOHOLS, ETHERS, CARBONYL COMPOUNDS, HALOGENATED COMPOUNDS, ORGANOMETALLICS, SYNTHESIS AND REACTIVITY
Laboratory	- - COMPARATIVE STUDY OF ALCOHOLS, PHENOLS, AND CARBOXYLIC ACIDS - SYNTHESIS OF ISOAMYL ACETATE - EXTRACTION OF CAFFEINE FROM AN ENERGY DRINK//EXTRACTION OF BETACYANINS FROM BEETS

Temporary organization of learning:

Block of content	Sessions	Hours
ORGANIC CHEMISTRY INTRODUCTION	3	6,00
ALKANES, ALKENES, ALKINES	8	16,00
OXIGEN COMPOUNDS	15	30,00
Laboratory	4	8,00

References

Química Orgánica para Biotecnología. Ejercícios y cuestiones. ApuntesUniversitatPolitècnivade València. 2015Allinger. N; Jhonson. C; Lebel. N. Química Orgánica. EditorialReverté S.A. 2Edición. España.1986.Solomons G. Química Orgánica 2 Edición. EditorialLimusa, 1999.Pine S.H. Química Orgánica. Ed. McGraw-Hill.Vollhardt P, Schore N..OrganicChemistry: Structure andFunction. 6ª Edition. ISBN-10:14292049X, ISBN-13:9781429204941.Pine, S.H. , Hendrickson,J.B., Cram, D.J. y Hammond, G.S. Química Orgánica,4a. Ed., McGraw-Hill, México, S.A.,1982.Roberts J. D., Stewart R., Caserio M.C. QuímicaOrgánica. Del metano a lasmacromoléculas.Ed. Fondo Educativo Interamericano. 1974.Jones R.A. Y, Physical andmechanistic organic Chemistry. Cambridge. 1979.García J.M., Serna F.,García F.C.,Fundamentos de Química Orgánica. Estructura ypropiedades de los compuestosorgánicos.Universidad de Burgos. 2008.