Information about the subject

Degree: Bachelor of Science Degree in Nursing

Faculty: Faculty of Medicine and Health Sciences

Code: 1211104 **Name:** Clinical Biochemistry

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

Module: CORE COURSES 64.5 ECTS)

Subject Matter: BIOQUÍMICA **Type:** Basic Formation

Department: Biomedical Sciences

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

CORE COURSES 64.5 ECTS)

Subject Matter	ECTS	Subject	ECTS	Year/semester
ANATOMÍA HUMANA	6,00	Human and Functional Anatomy	6,00	1/1
FISIOLOGÍA	12,00	Human Physiology	6,00	1/2
		Physiopathology	6,00	2/1
BIOQUÍMICA	6,00	Clinical Biochemistry	6,00	1/1
ESTADÍSTICA	6,00	Biostatistics and Research Methodology	6,00	1/2
PSICOLOGÍA	6,00	Psychology of Care	6,00	1/1
IDIOMA MODERNO	6,00	English	6,00	1/2
FARMACOLOGÍA	6,00	Pharmacology	6,00	2/1
NUTRICIÓN	6,00	Nutrition and Dietetics	6,00	2/1
SOPORTE VITAL	6,00	Emergency Care and Life Support	6,00	4/1

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1   R10. Definir la estructura y función del cuerpo humano. Comprender las bases moleculares y fisiológicas de las células y los tejidos.

R2   R48. Describir las características morfológicas de los principales microorganismos, las diferencias entre células eucariotas y procariotas, las características de la membrana celular y los principales mecanismos de transporte a través de la misma.

R3   R49. Establecer las distintas vías metabólicas (metabolismo: anabolismo y catabolismo). Identificar los principales parámetros en bioquímica clínica y sus rangos de normalidad.

R4   R50. Describir las fases del proceso analítico y resolver cálculos de concentraciones.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

	Weighting			
	1	2	3	4

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4	75,00%	Written exams
R4	20,00%	Practical tests and assignments
R1, R2, R3, R4	5,00%	Attendance and participation

Observations

Evaluation

This course does not allow for a single final assessment option, as it requires mandatory practical activities with the active participation of students.

Final exam: All students will take a written test as a single exam at the end of the course. This test will consist of two parts: a first section on basic concepts and/or problems of the subject, which the student must pass, and a second section with multiple-choice questions, which will only be graded if the first section is passed. The final exam will account for 60% of the final grade. Passing the final exam is required in order to average it with the continuous assessment grade and, therefore, to pass the course.

Continuous assessment: The student will carry out the activities proposed by the professor as deemed appropriate to ensure the student's active participation and the achievement of the competencies established in this syllabus.

Grading· The grade recorded for students who fail the final exam will be the exam grade out of 10.· Students who pass the exam but do not achieve the minimum required in continuous assessment will be given a grade of 4.5.

Use of AI programs

Students may use AI for:

   ·Asking questions about learning activities
   ·Assisted learning (alternative explanations or self-assessment exercises)
   ·Searching for resources and alternative references for study

Students may not use AI for:

   ·Recording or transcribing, in whole or in part, any classroom activity in order to obtain summaries or notes made by AI
   ·Generating text for assignments related to course activities, unless explicitly authorized by the teacher
   ·Presenting AI-generated work as their own

·Providing AI with prompts, exercises, or assessments to obtain automatic answers

Citation and attribution criteria

·If AI is used in any activity, it must be cited indicating which part of the activity it was used in, which AI tool was used, and for what purpose (source consultation, style analysis, knowledge expansion, etc.)

COURSE DELIVERY FOR SECOND AND SUBSEQUENT ENROLLMENTS: There will be a specific group for students who are not in their first enrollment and a professor assigned to that group. The professor responsible for this group (second and subsequent enrollments) will contact students through the virtual campus, indicating the dates and times of the corresponding tutorials. Assessment is the same as for first-time enrollment in Clinical Biochemistry, with the final exam required to pass the course. Other assignments must be completed as defined on the University platform, and at least 10% of these must be submitted in order to average them with the final exam grade.

International exchange students: Students must contact the professor via the platform at the beginning of the course. The course will be followed through the platform, where the required assignments will be posted. Assessment will consist of a final exam (worth 70% of the total grade) and continuous assessment (written tests on the platform, worth 30%).

CRITERIA FOR AWARDING HONORS: In accordance with the current UCV regulations on assessment and grading, the "Matrícula de Honor" (honors distinction) may be awarded to students who obtain a grade of 9.0 or higher. The number of "Matrículas de Honor" awarded may not exceed five percent of the students enrolled in the group for that academic year, unless fewer than 20 students are enrolled, in which case a single "Matrícula de Honor" may be granted. Exceptionally, honors may be awarded across different groups of the same subject globally . However, the total number of honors awarded will remain the same as if assigned per group, though they may be distributed among all students based on a common criterion, regardless of group. The criteria for awarding the "Matrícula de Honor" will be based on those stipulated by the course instructor and detailed in the "Observations" section of the assessment system in the syllabus.

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.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1   Presentation, explanation, and demonstration of content by the lecturer, and active listening, elaboration, and formulation of questions that organise the information received

M2   Activities carried out in specialised areas and with specialised equipment

M3   Personalised attention and small-group work. Period of instruction and/or guidance provided by a tutor in order to review and discuss the materials and topics presented in classes, seminars, readings, assignments, etc

M4   Set of oral and/or written tests used in the initial, formative, or summative assessment of the student

M5   Student study: Individual preparation of reading materials, essays, problem-solving activities, seminars, assignments, reports, etc., to be presented or submitted in lectures, practical classes, and/or small-groups. Work carried out on the university platform (https://campusvirtual.ucv.es/)

M6   Group preparation of reading materials, essays, problem-solving activities, assignments, reports, etc., to be presented or submitted in lectures, practical classes, seminars, and/or small-groups. Work carried out on the university platform (https://campusvirtual.ucv.es/)

M7   Group work sessions supervised by the lecturer. Case studies, diagnostic analyses, problem-solving activites, fieldwork, computer lab activities, visits, data searches, online libraries, Internet, etc. Meaningful knowledge construction through student interaction and activity.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Participatory lecture Presentation, explanation, and demonstration of content by the lecturer, along with active listening, and the development and formulation of questions that organise the information received. M1, M4	R1, R2, R3, R4	33,00	1,32
Laboratory Activities carried out in specialised areas and with specialised equipment M2, M3, M4, M6, M7	R4	23,00	0,92
Support sessions Personalised and small-group mentoring. Period of instruction and/or guidance provided by a tutor with the aim of reviewing and discussing the materials and topics presented in classes, seminars, readings, assignments, etc M3	R1, R2, R3, R4	2,00	0,08
Assessment Set of oral and/or written tests used in the initial, formative, or summative evaluation of the student M4	R1, R2, R3, R4	2,00	0,08
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Independent work Individual preparation of reading materials, essays, problem-solving activities, seminars, assignments, reports, etc., to be presented or submitted in lectures, practical classes, and/or small-group sessions. Work carried out on the university platform (www.plataforma.ucv.es). M5, M6	R1, R2, R3, R4	80,00	3,20
Group work Group preparation of reading materials, essays, problem-solving activities, assignments, reports, etc., to be presented or submitted in lectures, practical classes, seminars, and/or small-group tutorials. Work carried out on the university platform (www.plataforma.ucv.es) M7	R1, R2, R3, R4	10,00	0,40
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
BLOCK I	Introduction to Cell and Molecular Biology
BLOCK II	Introduction to Structural and Metabolic Biochemistry
BLOCK III	Introduction to Clinical Biochemistry
BLOCK IV	Practice 1. Introduction to Concentration Calculations. Practice 2. Introduction to Laboratory Equipment Handling.

Temporary organization of learning:

Block of content	Number of sessions	Hours
BLOCK I	3,00	6,00
BLOCK II	11,00	22,00
BLOCK III	14,00	28,00
BLOCK IV	2,00	4,00

References

Books:
   ·Lehninger Principles of Biochemistry. Cox, M.M. & Nelson, D.L. Omega Publishing. 7th Edition, 2018.
   ·Stryer, Lubert; Berg, Jeremy M.; Tymoczko, John L. *Biochemistry*. Reverté Publishing. 7th Edition, 2013.
   ·William B. Coleman, Gregory J. Tsongalis. *Molecular Pathology: The Molecular Basis of Human Disease*. 2nd Edition. Academic Press, 2017.
   ·Castaño López, M.A., Díaz Portillo, Jacobo, Paredes Salido, Fernando. *Clinical Biochemistry: From Pathology to the Laboratory*. Ergon Publishing, 2008.
Web Resources:
   ·BioROM 2010, a compilation of learning materials for Biochemistry, Molecular Biology, and Biotechnology: http://sebbm.es/BioROM/indices/index.html
   ·Jena Library of Biological Macromolecules, a database of biologically relevant macromolecules: http://www.fli-leibniz.de/IMAGE.html
   ·Biosphere Project, basic concepts of biology (Spanish Ministry of Education resource): http://recursostic.educacion.es/ciencias/biosfera/web/profesor/index.htm