



1. General information

Course: PHYSICS

Type: BASIC

Degree: 341 - UNDERGRADUATE DEGREE PROGRAMME IN BIOCHEMISTRY

Center: 501 - FACULTY OF ENVIRONMENTAL SCIENCES AND BIOCHEMISTRY

Year: 1

Main language: Spanish

Use of additional
languages:

Web site:

Code: 13301

ECTS credits: 6

Academic year: 2023-24

Group(s): 40

Duration: First semester

Second language:

English Friendly: N

Bilingual: N

Lecturer: JUAN CARLOS BALLESTEROS APARICIO - Group(s): 40

Building/Office	Department	Phone number	Email	Office hours
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Lecturer: MARCO ANTONIO LOPEZ DE LA TORRE HIDALGO - Group(s): 40

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Lecturer: BENITO SANTOS BURGOS - Group(s): 40

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2.21	FÍSICA APLICADA		Benito.Santos@uclm.es	

2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

Code	Description
E03	Understand and know how to explain the physical and chemical bases of biochemical processes and the techniques used to investigate them
G01	To possess and understand the knowledge in the area of Biochemistry and Molecular Biology at a level that, based on advanced textbooks, also includes cutting-edge aspects of relevance in the discipline
G02	To know how to apply the knowledge of Biochemistry and Molecular Biology to professional practice and to possess the necessary intellectual skills and abilities for this practice, including the capacity for: information management, analysis and synthesis, problem solving, organization and planning and generation of new ideas.
G03	Be able to collect and interpret relevant data, information and results, draw conclusions and issue reasoned reports on relevant social, scientific or ethical issues in connection with advances in Biochemistry and Molecular Biology.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Have a clear understanding of the physical quantities, the systems of units in which they are measured and the equivalence between them.

To know the principles of Newtonian mechanics, applying them to the movement of a particle and a particle system.

Acquire basic knowledge of the field concept, with emphasis on the electric and magnetic fields and also on electrostatic forces and potentials, relating them to those produced by ions and molecular dipoles.

Acquire basic knowledge of wave motion.

Familiarize yourself with laboratory work: learn to take experimental measurements by controlling sources of error, quantify their scope and correctly express the result of a measurement with error and units.

Know what electromagnetic radiation is and what its causes are. Know the electromagnetic spectrum.

6. Units / Contents

Unit 1:

Unit 2:

Unit 3:

Unit 4:

Unit 5:

Unit 6:

Unit 7:

7. Activities, Units/Modules and Methodology							
Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures		1.42	35.5	N	-	
Study and Exam Preparation [OFF-SITE]	Self-study		2.72	68	N	-	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities		0.6	15	Y	Y	
Practicum and practical activities report writing or preparation [OFF-SITE]	Self-study		0.88	22	Y	Y	
Final test [ON-SITE]	Assessment tests		0.09	2.25	Y	N	
Mid-term test [ON-SITE]	Self-study		0.09	2.25	Y	N	
Individual tutoring sessions [ON-SITE]	Lectures		0.2	5	N	-	
Total:			6	150			
Total credits of in-class work: 2.4			Total class time hours: 60				
Total credits of out of class work: 3.6			Total hours of out of class work: 90				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	35.00%	35.00%	
Mid-term tests	35.00%	35.00%	
Practicum and practical activities reports assessment	30.00%	30.00%	
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Unit 1 (de 7):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
Final test [PRESENCIAL][Assessment tests]	.5
Unit 2 (de 7):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
Final test [PRESENCIAL][Assessment tests]	.5
Unit 3 (de 7):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
Final test [PRESENCIAL][Assessment tests]	.5
Unit 4 (de 7):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
Final test [PRESENCIAL][Assessment tests]	.5
Unit 5 (de 7):	
Activities	Hours
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	15
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	22
Unit 6 (de 7):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
Final test [PRESENCIAL][Assessment tests]	.5
Unit 7 (de 7):	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	.83
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	.5
Final test [PRESENCIAL][Assessment tests]	.16
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	30
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	22.5
Final test [PRESENCIAL][Assessment tests]	2.66
Study and Exam Preparation [AUTÓNOMA][Self-study]	53.33
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	15
Total horas: 123.49	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
R. A. Serway, J. W. Jewett	Física	Thomson Editores-Paraninfo				
P. A. Tipler	Física para la Ciencia y la Tecnología	Reverté				
R. A. Serway, J. W. Jewett	Física	Thomson Editores-Paraninfo				
J. W. Jewett y R. A. Serway	Physics for scientists and engineers with modern physics	Thomson Learning				
R. Villar, C. López y F. Cussó	Fundamentos Físicos de las Procesos Biológicos	ECU				
J. W. Kane y M. M. Sternheim	Física	Reverté				