UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: PRINCIPLES OF PHYSICS II
Code: 59303
Type: BASIC
ECTS credits: 6
Degree: 315 - UNDERGRADUATE DEGREE IN BUILDING ENGINEERING
Academic year: 2023-24
Center: 308 - SCHOOL POLYTECHNIC OF CUENCA
Group(s): 30
Year: 1
Duration: C2
Main language: Spanish
Second language:
Use of additional languages:
English Friendly: N
Web site:
Bilingual: N

Lecturer: **PEDRO HUERTAS GALLARDO** - Group(s): **30**

Building/Office	Department	Phone number	Email	Office hours
E. Politécnica Cuenca (2.13)	FÍSICA APLICADA	969179100ext4844	pedro.huertas@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
E05	Knowledge of the theoretical foundations and basic principles applied to building, fluid mechanics, hydraulics, electricity and electromagnetism, calorimetry and hygrometer, and acoustics.
G01	Ability for analysis and synthesis
G03	Ability to manage information
G04	Problem resolution
G06	Critical thinking
G07	Teamwork
G12	Autonomous learning
G21	Command of Information and Communication Technologies (ICT)

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Understanding of the fundamental equations of fluid dynamics and statics.

Understanding of the basic principles of thermodynamics.

Correctly handle the electromagnetic magnitudes in three dimensions.

Understanding of the fundamental elements of electronics: capacity, self-induction, resistance and electromotive force, for its handling in DC and AC circuits

Understanding the fundamentals of acoustics in both its geometric and waving approach.

Use of computer tools for the numerical resolution of geometric and numerical problems.

Use of the appropriate approach for heat conduction.

6. Units / Contents

Unit 1:
- **Unit 1.1**
- **Unit 1.2**
- **Unit 1.3**
- **Unit 1.4**
- **Unit 1.5**
- **Unit 1.6**
- **Unit 1.7**
- **Unit 1.8**

Unit 2:
- **Unit 2.1**
- **Unit 2.2**
- **Unit 2.3**
- **Unit 2.4**

Unit 3:
- **Unit 3.1**

- **Unit 3.2**
- **Unit 3.3**
- **Unit 3.4**
- **Unit 3.5**
- **Unit 3.6**
- **Unit 3.7**
- **Unit 3.8**
- **Unit 3.9**

Unit 4:

- **Unit 4.1**
- **Unit 4.2**
- **Unit 4.3**
- **Unit 4.4**
- **Unit 4.5**
- **Unit 4.6**
- **Unit 4.7**
- **Unit 4.8**
- **Unit 4.9**
- **Unit 4.10**

Unit 5:

- **Unit 5.1**
- **Unit 5.2**
- **Unit 5.3**
- **Unit 5.4**
- **Unit 5.5**
- **Unit 5.6**
- **Unit 5.7**
- **Unit 5.8**
- **Unit 5.9**

Unit 6:

- **Unit 6.1**
- **Unit 6.2**
- **Unit 6.3**
- **Unit 6.4**
- **Unit 6.5**
- **Unit 6.6**
- **Unit 6.7**
- **Unit 6.8**

Unit 7:

- **Unit 7.1**
- **Unit 7.2**
- **Unit 7.3**
- **Unit 7.4**
- **Unit 7.5**
- **Unit 7.6**
- **Unit 7.7**
- **Unit 7.8**
- **Unit 7.9**
- **Unit 7.10**

Unit 8:

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]	Combination of methods	E05 G01 G06	1	25	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	E05 G01 G04 G06	1	25	N	-	
Computer room practice [ON-SITE]	Guided or supervised work	E05 G21	0.16	4	Y	Y	
Laboratory practice or sessions [ON-SITE]	Group Work	E05 G07 G21	0.12	3	Y	Y	
Writing of reports or projects [OFF-SITE]	Cooperative / Collaborative Learning	E05 G03	1.6	40	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	E05 G12	2	50	N	-	
Individual tutoring sessions [ON-SITE]	Guided or supervised work	E05 G01 G03 G04 G06 G12	0.02	0.5	N	-	
Mid-term test [ON-SITE]	Assessment tests	E05 G01 G03 G04 G06	0.04	1	Y	N	
Final test [ON-SITE]	Assessment tests	E05 G01 G03 G04 G06	0.06	1.5	Y	Y	
		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
Test	80.00%	80.00%	
Practicum and practical activities reports assessment	20.00%	20.00%	
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
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	40
Study and Exam Preparation [AUTÓNOMA][Self-study]	50
Individual tutoring sessions [PRESENCIAL][Guided or supervised work]	.5
Mid-term test [PRESENCIAL][Assessment tests]	1
Final test [PRESENCIAL][Assessment tests]	1.5

Unit 1 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3

Unit 2 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3

Unit 3 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5

Unit 4 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	3.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3.5

Unit 5 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	3.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3.5

Unit 6 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	2.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2.5

Unit 7 (de 8):

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	4.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	4.5

Unit 8 (de 8):

Activities	Hours
Computer room practice [PRESENCIAL][Guided or supervised work]	4
Laboratory practice or sessions [PRESENCIAL][Group Work]	3

Global activity

Activities	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	25
Laboratory practice or sessions [PRESENCIAL][Group Work]	3
Individual tutoring sessions [PRESENCIAL][Guided or supervised work]	0.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	25
Computer room practice [PRESENCIAL][Guided or supervised work]	4
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	40
Study and Exam Preparation [AUTÓNOMA][Self-study]	50
Mid-term test [PRESENCIAL][Assessment tests]	1
Final test [PRESENCIAL][Assessment tests]	1.5
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Giles, Ronald V.	Mecánica de los fluidos e hidráulica	McGraw-Hill		978-84-481-1898-3	2003	
Nelson, E. W.	Mecánica vectorial: estática y dinámica	McGraw-Hill		84-481-2950-4	2004	
Serway, Raymond A.	Física	Thomson-Paraninfo		84-9732-169-3	2003	
Tipler, Paul Allen	Física para la ciencia y la tecnología	Reverté		978-84-291-4430-7	2013	
Belmar, F	Problemas de Física: mecánica, electromagnetismo y ondas	Tébar Flores		84-7360-186-6	1998	
González, Félix A. (González Hernández)	La física en problemas	Tébar Flores		84-7360-141-6	1995	
Young y Freedman	Física Universitaria	Pearson		978-607-32-2124-5	2013	
Alonso, Marcelo	Física	Addison Wesley		968-444-224-6	1998	
Juana Sardón, José Maria de	Electromagnetismo: problemas de exámenes resueltos	Paraninfo		84-283-2053-5	1993	