

SUBJECT TEACHING GUIDE

G275 - PHYSICS 1

Degree in Industrial Electronic Engineering and Automatic Control Systems First Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Industrial Electronic Engineering and Automatic Control Systems			Type and Year	Core. Year 1 Core. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G275 - PHYSICS 1				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS DE LA TIERRA Y FISICA DE LA MATERIA CONDENSADA				
Name of lecturer	LUIS FERNANDEZ BARQUIN				
E-mail	luis.fernandez@unican.es				
Office	Facultad de Ciencias. Planta: + 2. DESPACHO PROFESORES (2016)				
Other lecturers	JAVIER ALONSO MASA				

3.1 LEARNING OUTCOMES
- The student will be able to present, analyse and interpret experimental results in short reports of technological and scientific character.
- Describe adequately the concepts as well as to establish and present written reports on the importance of models when dealing with a physical finding.
- To know accurately concepts and models associated to every subject included in the subject contents.
- To solve numerical problems associated to the contents, using different basic mathematical tools that allow to establish a correct result.
- To be able to defend orally results related to practical situations dealing with contents of the subject.

4. OBJECTIVES

This subject is aiming at providing the student beginning to perform his/her Engineering degree with the knowledge and ythe understanding of the fundamental concepts, laws, and principles ruling the Mechanics.

To appreciate Physics as a way of understanding nature and to be able to judge orally the practical situations associated to the contents of the subject.

To identify the key points of a physical phenomenon and to analyse it through an experiment , bearing in mind the proposed model and the mathematical methods.

To analyse and present the obtained results taking into account the precision of the used instruments.

6. COURSE ORGANIZATION

CONTENTS

1	T0. Introduction to Physics and Measurements.
1.1	T1. Vectors.
1.2	T2. Kinematics of the particle.
1.3	T3. Relative movement.
2	T4. Particle dynamics.
2.1	T5. Work and energy.
3	T6. Particle systems and collisions.
3.1	T7. Rigid solid dynamics.
3.2	T8. Oscillating movement.
4	T9. Heat and Thermodynamics.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Experimental lab work.	Others	No	No	15,00
Written exam of a block of subjects.	Written exam	No	Yes	30,00
Final written exam. The details on the evaluation follow the marking established in detail in Spanish language. These will be conveyed to the students.	Written exam	Yes	Yes	55,00
TOTAL				100,00
Observations				
For all evaluation items it is expected that if a new Health Alert due to COVID-19 is pronounced, on-line evaluation will be arranged. Any indication of academic misconduct and/or plagiarism will be forwarded to UC authorities to apply a severe penalty.				
Observations for part-time students				
Part-time students may be exempt of experimental work at the lab. In such a case the marking will be included in the final exam.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Serway, R.A. 2005, Física para ciencias e ingeniería Vol. 1. (Thomson, Méjico)

Tipler, P.A. et al. 2001, Física para la ciencia y la tecnología Vol. 1. (Reverté, Madrid)

Young, Hugh D. y Freedman, Roger A. 2013 Física universitaria con física moderna Vol 1 (Pearson, México)