

## SUBJECT TEACHING GUIDE

### G322 - PHYSICS 1

#### First Degree in Chemical Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	First Degree in Chemical Engineering			Type and Year	Core. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G322 - PHYSICS 1				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Knowledge Field					
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	JOSE ANTONIO ARAMBURU-ZABALA HIGUERA				
E-mail	antonio.aramburu@unican.es				
Office	Facultad de Ciencias. Planta: + 2. DESPACHO PROFESORES (2012)				
Other lecturers	MARIA CECILIA PARDO SANJURJO INES SANCHEZ DE MOVELLAN SAIZ				

4. OBJECTIVES
Provide the knowledge and comprehension of the fundamental laws, concepts, and principles that rule the mechanical behavior of matter.
Identify the key points of a physical phenomena, how to analyze them from an experimental point of view taking into account the proposed mode, the mathematical tools required. Provide quantitative results that can be validated with the experiment.
Analyze and present the obtained results taking into account the accuracy of the used instruments and methods

6. SUBJECT PROGRAM	
CONTENTS	
1	Vectors
2	Kinematics of the particle.
3	Relative movement.
4	Dynamics of the particle.
5	Work and energy.
6	Collisions.
7	Harmonic oscillations.
8	Dynamic of a system of particles.
9	Rigid body dynamics.
10	Statics.
11	Introduction to thermodynamics.

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
midterm exam (week 4)	Written exam	No	Yes	30,00
midterm exam (week 8)	Written exam	No	Yes	30,00
final exam	Written exam	Yes	Yes	30,00
Lab work	Laboratory evaluation	No	No	10,00
<b>TOTAL</b>				<b>100,00</b>
Observations				
<p>Throughout the course, the progress of the student will be monitored during the lectures devoted to the discussion of the problems. A continuous feedback with the students will be pursued to check whether the competences have been acquired .</p> <p>For a correct continuous evaluation, a number of tests will be carried out during classes throughout the semester in relation to the topics covered. The mark of these tests will count 10% of the final mark.</p> <p>To evaluate the progress, we will consider the work at the lab, and the corresponding reports. Those can be written in Spanish or English. The analysis of the collected data, conclusions, presentation, spelling and orthography will be taken into account.</p> <p>In case of a lockdown imposed by the sanitary alert, the different tests will be carried out using the telematic means offered by the University of Cantabria. These might include personal interviews, quizzes with multiple choices, on-line exams, or other tests of similar characteristics.</p>				
Observations for part-time students				
It will try to give facilities to do lab works and exams according to the situation of part-time students.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Serway-Jewet, "Física para Ciencias e Ingeniería", vol. 1. 6ª edición. Thomson 2005 (available in English).

