Universidad Zaragoza

Academic Year/course: 2024/25

39601 - Basic physics I

Syllabus Information

Academic year: 2024/25
Subject: 39601 - Basic physics I
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 608 -
ECTS: 6.0
Year: 1
Semester: First semester
Subject type: Basic Education
Module:

1. General information

The subject and its expected results respond to the following approaches and objectives: Analyze and solve autonomously problems that integrate different aspects of physics, recognizing the various physical and technical fundaments underlying the problem.

The development of the subject of Physics requires knowledge of:

- Physics: understanding the fundamental equations and laws of mechanics and thermodynamics.

- Mathematics: mastery of the basic notions of calculus.

A level of second year of baccalaureate in both mathematics and physics is recommended to take the course. As well as simultaneously take the subject Mathematics I of the degree.

2. Learning results

Upon completion of the subject, the student will be able to:

- Application of the basic concepts of the general laws of mechanics and thermodynamics.

- Use the computer as a tool to support the calculation.

- Handle the scientific and technical terminologyof the subject.

3. Syllabus

The program of the course comprises 6 topics:

- I. Kinematics.

- II. Single and multi-particle dynamics. Static.

- III. Dynamics of the rigid solid.

- IV. Oscillatory motion.

- V. Elasticity and fluids.

- VI. Thermodynamics

4. Academic activities

The course consists of 6 ECTS credits, which represents 150 hours of student work during the semester. 40% of this work (60 h.) will be done in the classroom, and the rest will be autonomous.

The program offered to the student includes the following activities:

- Theoretical classes: Theoretical activities taught in a fundamentally expository manner by the professor.
- Practical classes: Practical discussion activities and exercises carried out in the classroom that require a high level of student participation. Practical classes may also involve the performance of experimental practices including the use of different instruments and appropriate software.
- Group and individual tutoring. They will be scheduled according to the needs of the course.

5. Assessment system

Students must demonstrate that they have achieved the expected learning results through the following assessment activities . There is possibility of passing the subject through two different ways:

Continuous Assessment:

To be eligible for the Continuous Evaluation system, at least 80% of the classes must be attended. It will consist of two written

tests. To pass this part, a grade of 4.0 or higher on each written test is required.

The final grade for the course will be the average of both tests.

In order to pass the course, the student must obtain an average grade of 5.0 or higher.

Global assessment:

Global Evaluation will consist of a final written test whose grade must be higher than or equal to 5.0 to pass the course.

The final grade of the subject will be the grade obtained in the final written test.

The same evaluation procedure will be followed in the two global evaluation calls.

Note: in case the student does not pass the course through Continuous Evaluation, they will be able to do it through Global Evaluation . In addition, in case the student has passed the course through Continuous Evaluation and wants to improve their grade, they can take the 1st call of the Global Evaluation without the risk of lowering his/her grade.

6. Sustainable Development Goals

5 - Gender Equality
7 - Affordable and Clean Energy