

29802 - Physics I

Syllabus Information

Academic Year: 2019/20

Subject: 29802 - Physics I

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

326 - Escuela Universitaria Politécnica de Teruel

Degree: 440 - Bachelor's Degree in Electronic and Automatic Engineering

444 - Bachelor's Degree in Electronic and Automatic Engineering

ECTS: 6.0

Year: 1

Semester: 440 - 440-First semester o Second semester

444-First semester

107-First semester

444 - First semester

Subject Type: Basic Education

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on participation and the active role of the student favors the development of communication and decision-making skills. A wide range of teaching and learning tasks are implemented, such as lectures, assignments, computer lab sessions, autonomous work, and tutorials.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum.

Further information regarding the course will be provided on the first day of class.

4.2.Learning tasks

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This is a 6 ECTS course organized as follows:

1.- Lectures T1 (43 hours - 1.72 ECTS, classroom activity)

This activity is planned to display the contents illustrated with practical examples to facilitate the understanding and assimilation of the main concepts. Problem-solving tasks and illustrative examples will take place in the practice sessions with the cooperation of students. Students will be encouraged to solve some exercises proposed by the teacher prior to the lectures. This activity will take place on-site, in the classroom.

2.- Laboratory sessions T3 (10 hours - 0.40 ECTS, classroom activity)

Laboratory sessions' scripts will be available for the students via Moodle. Scripts consist of a theoretical introduction and the description of the steps to follow during the lab activity. Reading the script before attending the laboratory session is mandatory for the students. Writing a full report including the main results is recommended after completing the lab sessions.

3.- Assignments T6 (8 hours - 0.32 ECTS, non-classroom activity)

Assignments could be:

1. Writing of lab sessions' reports.
2. Tasks for individual or teamwork about different course parts. Students may be supervised during these tasks.

4.- Autonomous work T7 (84 hours - 3.36 ECTS, non-classroom activity)

Students are expected to dedicate time for personal study, problem-solving tasks and writing lab sessions' reports.

5.- Assessment T8 (5 hours - 0.20 ECTS, classroom activity)

The final exam will be planned at the end of the semester, but also continuous assessment will constitute a learning tool for formative and summative alternative assessment during the semester. In this way, students can check their learning outcomes during the progress of the course.

6.- Tutoring

Teacher's office hours will be available for the student to solve questions and discuss unclear course contents.

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Classroom activities

Activity Type 1 (lectures) 30 hours

Activity Type 2 (problem-solving) 15 hours

Activity Type 3 (practice sessions) 14 hours

Non-presential activities

Activity Type 6 (practical work) 21 hours

Activity type 7 65 hours (autonomous study)

Final evaluation Activity

Activity Type 8 (written test) 05 hours

4.3.Syllabus

The course will address the following topics:

MECHANICS

Principles of mechanics

1. Kinematics.
2. Dynamics.
3. Rigid body dynamics.
4. Statics.

Applied mechanics

5. Oscillatory motion.
6. Elasticity.
7. Fluid dynamics.

THERMODYNAMICS

8. Heat and temperature. Heat transfer.
9. Thermodynamics processes. First law of thermodynamics.
10. Thermal machines. Second law of thermodynamics.

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the website (<http://eina.unizar.es> or <http://eupt.unizar.es>).

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=29802&year=2019