

Academic Year/course: 2021/22

39116 - Classical Mechanics II

Syllabus Information

Academic Year: 2021/22

Subject: 39116 - Mecánica clásica II

Faculty / School: 100 - Facultad de Ciencias

Degree: 577 - Joint Program in Physics and Mathematics

ECTS: 7.0

Year: 2

Semester: Second semester

Subject Type: Compulsory

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as:

- Lectures: Development and progressive discussion of the course contents in the classroom, based on the material prepared by the teacher and the bibliography provided.
- Practice sessions: Solving practical cases in the classroom, with active participation of students. Students are provided with a collection of exercises, some of which are solved in the classroom.
- Laboratory sessions: Students prepare and elaborate in pairs, two laboratory activities, which will focus on the course contents. Students will have an explanatory script. The teacher will supervise the implementation of the experiments, data collection and analysis. Students will prepare after the session a written report on the work done.
- Tutorials: The solving of doubts and explanation of concepts will take place in the teacher's office at a specified time.

4.2. Learning tasks

The course includes the following learning tasks:

- Lectures (5 ETCS).
- Practice sessions (1.5 ETCS). The students will solve problems related to the topics explained in the lectures.
- Laboratory sessions (0.5 ETCS).
- Tutorials.

4.3. Syllabus

The course will address the following topics:

Lectures

1. Particle systems.
2. Rigid Body. Plane motion
3. Rigid Body. Free motion, Euler equations and Lagrangian mechanics.
4. Small oscillations and normal modes.
5. Mechanical Waves.
6. Relativistic Mechanics.

Laboratory sessions

1. Rigid body.
2. Mechanical Waves.

4.4. Course planning and calendar

Laboratory sessions dates will be set at the beginning of the semester according to the number of students enrolled and the availability of laboratories.

Exam: The written exam will last 3 hours. It will be held on the date indicated by the Faculty of Sciences. For the practice laboratory test, it will be convened in due time with the students who must do it.

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Faculty of Sciences.

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=39116>