

68526 - Discipline content for Physics

Información del Plan Docente

Academic Year	2017/18
Subject	68526 - Discipline content for Physics
Faculty / School	107 - Facultad de Educación
Degree	360 - University Master's in Secondary School Teaching: Physics and Chemistry 415 -
ECTS	4.0
Year	XX
Semester	Indeterminate
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

Physicist disciplinary contents is thought for the science students whose degree is different from a Physicist degree and its goal is to complete the physicist knowledge helping students in the teaching processes of physicist subjects in Secondary Education.

Face-to-face sessions will consist of the next activities:

- The teacher showing representative physical events for the course contents.
- Group work to identify the main physical principles to apply.
- Individual search of internet materials about physical concepts, interactive and audio-video resources.
- Common setting of materials.
- Learning portfolio.
- Student presentations.

The first sessions it will be dedicated to:

- Presentation of the course and the teaching guide
- Analyze formation of the students (previous formation, physicist knowledge, motivations, etc.)

The next sessions it will be useful to confront necessities of students with the different area of physics contents. Students will develop a presentation around a topic of physics contents.

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

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2.1.Learning goals

In order to pass the course, the student should be able to:

1. Apply the basic physical concepts with a global and phenomenological perspective with a focused didactic treatment for a secondary education level.
2. Identify the structure and levels of matter and to identify basic forces working at the nuclear, atomic-molecular and cosmic contexts.
3. Identify the physical events working in the natural environment analyzing them and the exchanges of energy in the processes.
4. Apply physical concepts to solving problems of the contemporary world looking for the implications in the social and technological field.
5. Identify different agents making and orienting activities and expositions for learning physical concepts as a complement to the school and evaluate how these actions work with de curricular contents.

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

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

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. Its aim is not to introduce students in every brach of Physics, but to improve some questions and, especially, to develop a scientific, technological and social perspective of some relevant areas. The majority of the course contents will be presented in relation to the contemporary research, the human culture and other disciplinary areas.

5.2.Learning tasks

The course includes the following learning tasks:

- The teacher showing representative physical events for the course contents.
- Group work to identify the main physical principles to apply.
- Individual search of internet materials about physical concepts, interactive and audio-video resources.
- Common setting of materials.
- Learning portfolio.
- Student presentations.

5.3.Syllabus

The course will address the following topics:

1. Matter and Universe.
2. Optics.

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3. Classical Mechanics.
4. Mechanics of fluids.
5. Waves.
6. Thermodynamics.
7. Electromagnetism.

5.4.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 Faculty of Education website.

5.5.Bibliography and recommended resources