60039 -

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	538 - Master's in Physics and Physical Technologies
ECTS	5.0
Course	1
Period	First semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

For this course the learning process is based on:

- Cooperative classroom techniques.
- Case studies and problem-based learning
- Practical classes and laboratory experiences

5.2.Learning activities

1. Classroom activities and active learning laboratory (40 hours)

2. Laboratory experiences (10 hours):
   - Propagation and transformation of a laser beam according to safety rules.
   - Fusion processes and laser assisted ablation applied to material processing.

5.3.Program

Course program:

1. Laser description. Technical specifications
2. Optical characteristics and laser beam transformation
3. Main type of lasers (description, characteristics, applications)
4. Matter-Radiation interaction
5. Laser systems in industrial processes
6. Safety in laser environment
7. Industrial processes

Laboratory activities

P.1. Laser beam propagation and transformation in accordance with laser safety standards

P.2. Laser assisted ablation and fusion processes applied to material processing.

5.4.Planning and scheduling

Schedule of classes is not available yet. The dates for the project presentations will be fixed. Students will be expected to stay for all the presentations.

5.5.Bibliography and recomended resources