60939 - Photonics and optical engineering

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	533 - Master's Degree in Telecommunications Engineering
ECTS	2.5
Course	2
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

- **M1. Lectures** (9 hours).
- **M9: Laboratory** (16 hours), combining laboratory assignments with visits to different photonics research and development facilities.
- **M6: Group assignment** (20 hours)
- **M10: Academic tutoring.**
- **M11: Evaluation.** Based on a final test, laboratory work and the results of the group assignment.

5.2.Learning activities

- **Lectures:** 9 hours presenting the basic contents of the course

- **Laboratory assignments:** 4 sessions of 2 hours each and 8 hours in 4 different visits to research and development facilities.
- **Group assignments:** each group of students, under the supervision of a teacher, will be asigned a case study related to photonics or optical engineering.

5.3.Program

- UNIT 1. Introduction to photonics and optical engineering. Fields of application
- UNIT 2. Optoelectronics. Synchronous detection in optical instrumentation
- UNIT 3. Integrated optics and optical sensors
- UNIT 4. Advanced applications of optical fibers
- UNIT 5. Interferential optics
- UNIT 6. Optical engineering for industry

5.4.Planning and scheduling

The schedule for lecture and laboratory sessions and the evaluation dates will be provided by the university before the beginning of the semester.

5.5.Bibliography and recomended resources

The students will have access to a collection of lecture notes prepared by the teachers, which will cover all the contents of this course.