

60939 - Photonic and optical engineering

Información del Plan Docente

Academic Year	2017/18
Subject	60939 - Photonic and optical engineering
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	533 - Master's Degree in Telecommunications Engineering
ECTS	2.5
Year	2
Semester	First semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

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

2.1.Learning goals

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. A wide range of teaching and learning tasks are implemented, such as

- **M1 Lectures** (9 hours).

60939 - Photonic and optical engineering

- **M9 Laboratory sessions** (16 hours). They combine laboratory assignments with visits to different photonics research and development facilities.
- **M6 Group assignment** (20 hours).
- **M10 Tutorials**.
- **M11 Assessment**. A set of a final test, laboratory work, and the mark of the group assignment.

5.2.Learning tasks

The course includes the following learning tasks:

- **Lectures** (9 hours). Presentation of the main course contents combined with the active participation of students.
- **Laboratory sessions** (16 hours). 4 sessions of 2 hours each (8 hours in total) and 4 visits to research and development facilities (8 hours in total).
- **Group assignments**. In groups and under the supervision of the teacher, students will be assigned a case study related to photonics or optical engineering.

5.3.Syllabus

The course will address the following topics:

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

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 EINA website.

5.5.Bibliography and recommended resources

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