Course guides
32064 - LST - Laser Systems and Technology

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 731 - OO - Department of Optics and Optometry.
Degree: DOCTORAL DEGREE IN PHOTONICS (Syllabus 2007). (Optional subject).
MASTER'S DEGREE IN PHOTONICS (Syllabus 2009). (Optional subject).
ERASMUS MUNDUS MASTER'S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND BIOPHOTONICS (Syllabus 2010). (Optional subject).

Academic year: 2015 ECTS Credits: 5.0 Languages: English

LECTURER
Coordinating lecturer: FIDEL VEGA LERIN
Others: SANTIAGO VALLMITJANA

TEACHING METHODOLOGY
Presencial teaching + activities

LEARNING OBJECTIVES OF THE SUBJECT
The aim of the subject is to provide a detailed description of the laser systems currently used in both scientific and industrial fields. Specific attention will be paid to cutting-edge applications.
The subject will begin with a brief introduction to the basic concepts of lasers. We will work on characteristics and properties of electromagnetic radiation emitted by lasers, components needed and techniques involved in shaping and characterization of laser beams. Laser beam interaction with materials will be studied in detail.
The final part will deal with laser system, their specifications, control and integration in automatic systems. Scientific and Industrial applications will be studied with special interest.

CONTENTS
- Laser fundamentals.
- Laser beam characterization, shaping and transmission.
- Laser beam interaction with materials.
- Laser systems.
- Laser systems applications.

**GRADING SYSTEM**

- Homework
- Final project
- Exam

**EXAMINATION RULES.**

The usual in University teaching

**BIBLIOGRAPHY**

**Basic:**