Course guides
32087 - FOE - Optical Element Manufacturing

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: 2.5 Languages: English

LECTURER
Coordinating lecturer: Josep Arasa
Others: Santiago Royo

TEACHING METHODOLOGY
Presencial Teaching + activities

LEARNING OBJECTIVES OF THE SUBJECT
Fabrication of optical elements is one of the key aspects for proper optical performance. Several techniques are applied to transform the native material into an optical element until the desired specifications are achieved. The fabrication of microoptics, conventional glass or plastic optics, fibers and compound optical elements will be analyzed in depth in this course. Students will be provided with the basic knowledge on the fabrication techniques of optical elements from two different sides: the manufacture of the element itself and the manufacture of an assembled compound optical system.

CONTENTS

(ENG) Basic classification of optical materials

(ENG) Mechanical properties of optical materials

(ENG) Fabrications processes: Pressing, molding, turning, drilling, loose abrasive, polish, fixing

(ENG) Pre and post processing: oven cycles, deposition of; epoxy, wax and pitches, thinfilms, AR coating, metal coating

(ENG) ISO standard for optical fabrications
GRADING SYSTEM

Elaboration and defense of a short discussion on a theoretical or applied topic related to optical fabrication.
- Evaluation results will be based on students’ interest and participation in discussions and forums; on the consistency of the discussion held on optical fabrication; and on the question and answer session following the presentation, with questions made either by the lecturer or by other students.

EXAMINATION RULES.

The usual in University teaching

BIBLIOGRAPHY

Basic:

Complementary: