Course guides
32076 - AOI - Advanced Optical Instrumentation

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).
DOCTORAL DEGREE IN OPTICAL ENGINEERING (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: Montserrat Arjona
Others: Josep Arasa

TEACHING METHODOLOGY
Presencial Teaching + activities

LEARNING OBJECTIVES OF THE SUBJECT
The aim of the course is to offer an in-depth overview of optical instruments that are not usually considered basic, but the use of which, however, is essential in many industrial, metrological, control, and biomedical applications. The course begins with the definition of the additional optical parameters and the optical systems components that are needed to obtain an effective and operative description of the instruments. It goes on to analyse the function, the design and the characteristics of optical instruments which include elements such as: systems with a constant increase, telecentric systems, anamorphic systems. Finally, applications in which this type of advanced optical instruments making a special emphasis in Photomicrography and Specialized Optical Microscopy.

CONTENTS

(ENG) Section 1: Introduction to the optical instruments.

(ENG) Section 2: Importance of the diaphragms in the optical instruments.

(ENG) Section 3: Non standard applications of optical components in the optical

(ENG) Section 4: Photomicrography
(ENG) Section 5: Specialized Optical Microscopy techniques

GRADING SYSTEM

Two aspects are assessed: students' knowledge of the topics covered in the first part of the course and the assignment they have carried out. The first evaluation involves a written test and the second the presentation of the assignment.

EXAMINATION RULES.

The usual in University teaching

BIBLIOGRAPHY

Basic:

Complementary: