Course guides
32079 - DH - Digital Holography

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 1022 - UAB - (ANG) pendent.
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: Juan Campos (UAB), Estela Martin (UB)
Others: Estela Martin (UB)

TEACHING METHODOLOGY
Presencial Teaching + activities

LEARNING OBJECTIVES OF THE SUBJECT
Digital holography is a widespread technique allowing dynamic wave front control, with many applications such as beam steering and shaping, adaptive optics, optical interconnections and holographic optical tweezers, among others. The student will learn how to compute a digital hologram, encode it in a limited diffractive element and optically reconstruct it. This subject is mainly experimental and it is essentially held in the computer room and in the Laboratory.

CONTENTS

(ENG) Introduction

(ENG) Diffractive elements: constraints

(ENG) Encoding methods

(ENG) Other techniques

(ENG) -
GRADING SYSTEM

- At the end of the term the students should give an oral presentation and prepare a dissertation about a practical work developed during the course, which includes the development of a modern hologram encoding method and its optical reconstruction. This is about 75% of the evaluation.
- They should also write down short reports on the practical sessions (about 25% of the evaluation).

EXAMINATION RULES.

The usual in University teaching

BIBLIOGRAPHY

Complementary: