Course guides
13968 - APT - Advanced Photonic Technologies

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 748 - FIS - Department of Physics.
Degree: 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: Adolfo Esteban-Martin
Others: Jordi Martorell, Valerio Pruneri

TEACHING METHODOLOGY

- LEARNING OBJECTIVES OF THE SUBJECT

The course is focused on several advanced applications of photonic technologies providing an overview in recent advances and state of the art of devices. In particular it will try to bridge basic and fundamental science and industrial potentials. Additionally, students will visit ICFO labs to understand more deeply some of the concepts and to be in touch with some of the advanced photonics technologies under development.

CONTENTS

- Frequency Conversion Processes

- Frequency conversion devices

- Integrated electro-optic devices for the telecom and sensing industry

- Spontaneous parametric processes and entangled photons for quantum

- SHG in random media

- SHG in the whispering gallery modes of spherical micro-resonators. Applications to sensing
GRADING SYSTEM

Attendance (60%) and multiple-choice exam (40%)

BIBLIOGRAPHY

Basic: