Course guides
32056 - PPMAT - Photonic Materials

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 10041 - UB-FQ - (ANG) pendent.

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: Frank Güell
Others: Daniel Navarro, Verònica Ahufinger, Jordi Mompart

TEACHING METHODOLOGY

Presencial Teaching + activities

LEARNING OBJECTIVES OF THE SUBJECT

This subject aims at providing the student with a solid background in fundamental concepts and mechanisms present in photonic materials. Materials are the first link in the chain of applied photonics. Their optical properties will be introduced and related with electronic band structure. These fundamental properties will serve to describe and understand the physics and technology of elemental photonic and optoelectronic structures, such as photonic crystals and optical microcavities.

CONTENTS

- Crystalline and electronic structure of solids
- Fundamentals of carrier transport in solids
- Optical processes in solids
- Silicon for photonic applications
- Photonic Crystals
- Optical microcavities
**GRADING SYSTEM**

Minimum attendance: 80% of the lecture time.

Examination: The students prepare a presentation on a subject of the lecture. The presentation consists in a written part and in a 20 minutes presentation.

**EXAMINATION RULES.**

The usual in the University teaching

**BIBLIOGRAPHY**

**Basic:**