Course guides
32139 - PHM - Photonic Materials

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: 5.0  Languages: English

LECTURER
Coordinating lecturer: Frank Güell
Others: B. Garrido

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 will prepare a presentation on a subject of the lectures, which will consist in a 15 minutes oral presentation (50% final mark). Global examination (50% final mark).

EXAMINATION RULES.

The usual in the University teaching

BIBLIOGRAPHY

Basic: