

230564 - NANO - Nanophotonics

Coordinating unit:	230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit:	893 - ICFO - Institute of Photonic Sciences
Academic year:	2015
Degree:	ERASMUS MUNDUS MASTER'S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND BIOPHOTONICS (Syllabus 2010). (Teaching unit Optional) MASTER'S DEGREE IN PHOTONICS (Syllabus 2013). (Teaching unit Optional)
ECTS credits:	3
Teaching languages:	English

Teaching staff

Coordinator: NIEK VAN HULST, ICFO.

Others: GONÇAL BADENES GUIA, ICFO.
ROMAIN QUIDANT, ICFO.
JORDI MARTORELL PENA, ICFO.

Degree competences to which the subject contributes

Transversal:

1. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.
2. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding how companies are organised and the principles that govern their activity, and being able to understand employment regulations and the relationships between planning, industrial and commercial strategies, quality and profit.
3. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.
4. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

Teaching methodology

Presencial teaching + activities

Learning objectives of the subject

NanoPhotonics is where optics and nanotechnology meet. NanoPhotonics plays an important role in current (and future) ultra-small and ultra-sensitive sensing, imaging, optical circuitry, data storage. Both concepts and applications will be treated in details.

230564 - NANO - Nanophotonics

Study load

Total learning time: 75h	Theory classes:	22h 30m	30.00%
	Practical classes:	0h	0.00%
	Laboratory classes:	0h	0.00%
	Guided study:	2h 15m	3.00%
	Self study:	50h 15m	67.00%

230564 - NANO - Nanophotonics

Content

-Basics

Degree competences to which the content contributes:

-Fabrication of nanophotonic structures

Degree competences to which the content contributes:

-Optical addressing the nanoscale

Degree competences to which the content contributes:

-Plasmonics

Degree competences to which the content contributes:

-Single emitters

Degree competences to which the content contributes:

-NanoPhotonic wires

Degree competences to which the content contributes:

-Photonic Crystals

Degree competences to which the content contributes:

-Light propagation within disordered structures

Degree competences to which the content contributes:

-Nonlinear Nanophotonics

Degree competences to which the content contributes:

230564 - NANO - Nanophotonics

-Applications in biology, materials science, telecom and photonics

Degree competences to which the content contributes:

Qualification system

Assistance - literature study - small specialized presentation - evaluation meeting with tutor.

Regulations for carrying out activities

The usual in University teaching

Bibliography

Basic:

Novotny, L.; Hecht, B. Principles of nano-optics. Cambridge: Cambridge University Press, 2006. ISBN 0521832241.

Others resources: