32138 - NDPCM - Optical Metamaterials

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 748 - FIS - Department of Physics
Academic year: 2015
Degree: MASTER'S DEGREE IN PHOTONICS (Syllabus 2009). (Teaching unit Optional)
                          ERASMUS MUNDUS MASTER'S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND
                          BIOPHOTONICS (Syllabus 2010). (Teaching unit Optional)
ECTS credits: 2,5  Teaching languages: English

Teaching staff
Coordinator: KESTUTIS STALIUNAS
Others: RAMON HERRERO

Teaching methodology
PRESENCIAL TEACHING + ACTIVITIES

Learning objectives of the subject
An introduction of the main concepts and a prespective of the current research on light propagation and light dynamics in spatially modulated materials like Photonic Crystals or Methamaterials, allowing the understanding of the latest scientific literature in this field
**Content**

-An introduction of few fundamental concepts, subjects of current interest in the topic of nonlinear dynamics of optical systems will be studied.

**Fundamentals in the general theory of Photonic Crystals**

**One dimensional Photonic Crystals**

**Two and three dimensional Photonic Crystals**

**Modification of diffraction**

**Nonlinear Photonic Crystals**

**Solitons**

**Slow light**

**Other specific topics of current research interest (will vary depending on situation)**
(ENG) (CAT) - Other sorts of Metamaterials

Degree competences to which the content contributes:

(ENG) (CAT) - Other specific topics of currents research interest

Degree competences to which the content contributes:

Qualification system

The full grade will be assigned according to the attendance to and participation in the lectures, and upon completion of a project based on either what has been discussed in the lectures or a scientific paper related to the topics discussed in the course.

Regulations for carrying out activities

THE USUAL IN UNIVERSITY TEACHING

Bibliography

Basic:


Complementary:

Depending on the contents of the course.