Course guides
32073 - LD - Non-Linear Dynamics in Photonic Crystals and Metamaterials

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 731 - OO - Department of Optics and Optometry.
Degree: Academic year: 2015  ECTS Credits: 2.5
Languages: English

LECTURER
Coordinating lecturer: GASPAR ORRIOLS
Others: KESTUTIS STALIUNAS, RAMON HERRERO

TEACHING METHODOLOGY
PRESENCIAL TEACHING + ACTIVITIES

LEARNING OBJECTIVES OF THE SUBJECT
An introduction of the main concepts and a perspective of the current research on light propagation and light dynamics in spatially modulated materials like Photonic Crystals or Metamaterials, allowing the understanding of the latest scientific literature in this field

CONTENTS
- 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)**

**GRADING 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.

**EXAMINATION RULES.**

THE USUAL IN UNIVERSITY TEACHING

**BIBLIOGRAPHY**

**Basic:**