

**COURSE ON NON-LINEAR OPTICS**  
**UNIVERSITY OF PAMPLONA, 2018**

**Professor:** Dr. Hernando Garcia

**Class Time:** 10:00 - 12:00 AM, Tuesday-Friday

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**Course Materials**

• **REQUIRED:** “Nonlinear Optics,” Robert Boyd (2008) Third Edition, Academic Press.

**Prerequisites:** University Physics I, II, III

**Lectures:** Nonlinear optics in the study of the interaction of light with matter where the intensity of light is so high such that the electronics charge distribution of matter get modified. The course is design at the level of a beginning graduate student. The porpoise of the lectures is to covers the basics of nonlinear optics, emphasis will be given to the interaction of light with matter, first order process, parametric processes, third order nonlinear process and ultrafast optics.

**Outline of the course**

EC104 / (10:0-12:0)

<b>Date</b>	<b>Subject</b>
21/05/2018	Wave propagation in matter
22/05/2018	Dispersion Relations
23/05/2018	Introduction to Nonlinear Optics
24/05/2018	Laser and Population Genetics
25/05/2018	Second Harmonic Generation
28/05/2018	Parametric processes, and third order processes
29/05/2018	Nonlinear susceptibility in two level systems, density matrix approach
30/05/2018	Ultrafast lasers
31/05/2018	Ultrafast Optical Phenomena