Course Syllabus

Department/Faculty
School of Engineering

Graduate Program
Materials Engineering and Nanotechnology

Degree
☒ Academic Master's ☒ Doctorate (PhD) ☐ Professional Master's

Course Name
Photonic Materials and Structures

Professor(s)
Prof. Christiano José Santiago de Matos, Ph.D
Prof. Eunézio Antônio de Souza, Ph.D

Office hours
48

Course Overview

Will be presented materials and structures (micro and nanometric) capable of manipulating and/or changing the properties of light.

Program content:

- Motivation and review of electromagnetic waves
- Optical properties of metals and metallic structures
- Optical properties of dielectrics and dielectric structures
- Semiconductor optical properties
- Materials with optical gain and lasers
- Non-linear materials
- Metamaterials

Letter Grade Assignment
Grade A (Excellent) - Grade points between 9 and 10
Grade B (Good) - Grade points between 8 and 8.9
Grade C (Satisfactory) - Grade points between 7 and 7.9
Grade D (Unsatisfactory) - Grade points between 0 and 6.9

Texts, Materials, and supplies

Basic Bibliography
SIMMONS, J. H., POTTER, K. S. Optical Materials. Academic Press. 2000.
VERDEYEN, J. T. Laser Electronics. 3rd Ed. Prentice Hall. 1995.
AGRAWAL, G. P. Nonlinear Fiber Optics. 5th Ed. Academic Press. 2012.
JOANNOPOULOS, J. D., JOHNSON, S. G., WINN, J. N., MEADE, R. D. Photonic Crystals: Molding the Flow of Light. 2nd Ed. Princeton University Press. 2009.
Scientific Literature Articles.

Campus Higienópolis: *Rua da Consolação, 896 – Edifício João Calvino - 8º andar ● Consolação ● São Paulo - SP ● CEP 01302-907*
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