



Dados Básicos

Programa:	Instrumentação e Óptica Aplicada (31022014007P2)
Nome:	OPTICAL COMMUNICATION SYSTEMS
Sigla:	IOA
Número:	6048
Créditos:	4
Período de Vigência:	04/06/2019 à -
Disciplina obrigatória:	Não
Ementa:	1. Introduction to optical fibers; 2. Basic concepts of electromagnetic fields: wave equation, polarization, birefringence, cylindrical dielectric waveguides; 3. Transmission in optical fibers: attenuation, group velocity, material dispersion, waveguide dispersion, modal dispersion, chromatic dispersion; 4. Lasers and Optical Amplifiers: interaction between atoms and electromagnetic fields, two-level system, absorption, spontaneous emission, stimulated emission, population inversion, pumping schemes, semiconductor lasers, pn junction, heterojunction lasers, tunable lasers; 5. Optical detectors: light detection, semiconductor photodiodes, PIN photodiode, APD photodiode, responsivity; 6. Noise sources in photodetectors: receiver noise, thermal noise, shot noise, noise in optical amplifiers, probability of error detection; 7. Fiber optic systems: modulation and multiplexing, detection of digital signals, sensitivity, detection with pre-amplification.
Bibliografia:	[1] Agrawal, G. P.; Fiber-Optic Communication Systems, 3rd Edition, Editora John Wiley & Sons, ISBN: 0471215716, 2002. [2] Palais, J. C.; Fiber Optic Communications, 1st Edition, Editora Prentice Hall, ISBN: 0130085103, 2004. [3] Saleh, B. E. A.; Teich, M. C.; Fundamentals of Photonics, 1st Edition, Editora Wiley Interscience, 1991.

Curso(s)

Curso	Nível	Carga Horária
Instrumentação e Óptica Aplicada	Doutorado	60.0 (hs)

Área(s) de Concentração obrigatória(s) à Disciplina

INSTRUMENTAÇÃO E FOTÔNICA

Turma(s)

Não existem turmas associadas à disciplina.

Fechar

