



BIOFOTONICA B

Anno immatricolazione	2017/2018
Anno offerta	2018/2019
Normativa	DM270
SSD	FIS/03 (FISICA DELLA MATERIA)
Dipartimento	DIPARTIMENTO DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE
Corso di studio	ELECTRONIC ENGINEERING
Curriculum	PERCORSO COMUNE
Anno di corso	2°
Periodo didattico	Secondo Semestre (06/03/2019 - 14/06/2019)
Crediti	3
Ore	23 ore di attività frontale
Lingua insegnamento	Italian
Tipo esame	SCRITTO E ORALE CONGIUNTI
Docente	MINZIONI PAOLO (titolare) - 3 CFU
Prerequisiti	=
Obiettivi formativi	The main goal of the course is to provide basic information about Photonics that will be developed and treated in more detail mainly in the courses of the Master Degree in Electronics (with specialization in Photonics)
Programma e contenuti	The course starts from the description of the main fundamentals that underlie the sources used in the field of Photonics, with particular attention to the laser sources. Are subsequently introduced the fundamental properties of Gaussian beams which represent a good model for the beam emitted by the laser and are discussed the main components and devices that can be used to manipulate the laser beams. The aim of the second part of the course is to provide an introduction to optical fibers and integrated optics.

	<p>Conventional sources and laser sources</p> <p>Propagation of optical waves and Gaussian beams</p> <p>Optical components</p> <p>Optical devices for modulation, deflection and amplification of light</p> <p>Optical fibers and integrated optical circuits</p> <p>Short description of the main applications (telecommunications, biomedical applications, sensors, industrial applications)</p>
Metodi didattici	<p>Lectures (hours/year in lecture theatre): 20</p> <p>Practical class (hours/year in lecture theatre): 0</p> <p>Practicals / Workshops (hours/year in lecture theatre): 10</p>
Testi di riferimento	<p>=We will mainly refer to scientific papers and on the slides used in the lessons</p>
Modalità verifica apprendimento	<p>The exams consists in a presentation prepared by the student in which a particular topic is treated in detail and on a general discussion about the techniques presented in the course</p>
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Obiettivi Agenda 2030 per lo sviluppo sostenibile	<p>\$bl legenda sviluppo sostenibile</p>