



# UNIVERSITÀ DI PAVIA

Anno Accademico 2018/2019

## MICROSENSORI, MICROSISTEMI INTEGRATI E MEMS

<b>Anno immatricolazione</b>	2017/2018
<b>Anno offerta</b>	2018/2019
<b>Normativa</b>	DM270
<b>SSD</b>	ING-INF/01 (ELETTRONICA)
<b>Dipartimento</b>	DIPARTIMENTO DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE
<b>Corso di studio</b>	BIOINGEGNERIA
<b>Curriculum</b>	PERCORSO COMUNE
<b>Anno di corso</b>	2°
<b>Periodo didattico</b>	Primo Semestre (01/10/2018 - 18/01/2019)
<b>Crediti</b>	6
<b>Ore</b>	45 ore di attività frontale
<b>Lingua insegnamento</b>	Italian
<b>Tipo esame</b>	SCRITTO E ORALE CONGIUNTI
<b>Docente</b>	ANNOVAZZI LODI VALERIO (titolare) - 1 CFU CARLI FABIO - 1 CFU MALCOVATI PIERO - 2 CFU MERLO SABINA GIOVANNA - 2 CFU
<b>Prerequisiti</b>	Principles of mechanics. electronic circuits. electromagnetic waves.
<b>Obiettivi formativi</b>	This course represents a general introduction to microelectromechanical systems.
<b>Programma e contenuti</b>	The principle of operation of linear accelerometers, resonators, gyroscopes, pressure sensors are described. A detailed analysis of electrostatic actuators is carried on. The basic elements of MEMS fabrication are described. MOEMS are then reviewed, in particular with regard to micromirrors for laser scanning and optical switches. Electrical and optical methods for device characterization are illustrated. Electronic interfaces for MEMS devices are discussed. Biomedical applications

	such as Lab-on-chip are also covered. Specific seminars are proposed each year.
<b>Metodi didattici</b>	Lectures (hours/year in lecture theatre): 46 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
<b>Testi di riferimento</b>	Copies of transparencies and supplementary material available on the course web-site
<b>Modalità verifica apprendimento</b>	The final exam consists in a close-book written test.
<b>Altre informazioni</b>	The final exam consists in a close-book written test.
<b>Obiettivi Agenda 2030 per lo sviluppo sostenibile</b>	<a href="#">\$ b _legenda_sviluppo_sostenibile</a>