



APPLIED BIOELECTROMAGNETISM

Enrollment year	2017/2018
Academic year	2018/2019
Regulations	DM270
Academic discipline	ING-INF/02 (ELECTROMAGNETIC FIELDS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC ENGINEERING
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	2nd semester (06/03/2019 - 14/06/2019)
ECTS	6
Lesson hours	50 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	PASIAN MARCO (titolare) - 6 ECTS
Prerequisites	Physics, in particular basic electromagnetism
Learning outcomes	<p>This course is intended for the MS student in Bio-engineering. It provides the basic competences to understand the use of microwaves (and radio frequencies) in the field of bio-engineering, either for diagnostics or therapies.</p>
Course contents	<ul style="list-style-type: none">- Fundamental aspects of the electromagnetism- Fundamental aspects of microwave devices and antennas- Dielectric characterization of biological materials- Dosimetry, specific absorption rate (SAR)- Regulations about electromagnetic fields- Interaction between electromagnetic fields and biological systems- Ex-vivo and in-vivo measurements- Numerical techniques for the analysis of the interaction between

	<p>biological systems and microwaves</p> <ul style="list-style-type: none"> - Imaging and diagnostic techniques at microwaves - Biomedical devices at microwaves - Implantable and wearable microwave devices
Teaching methods	<p>Lectures (hours/year in lecture theatre): 42</p> <p>Practical class (hours/year in lecture theatre): 8</p> <p>Practicals / Workshops (hours/year in lecture theatre): 0</p>
Reccomended or required readings	<p>Material made available by the lecturer</p>
Assessment methods	<p>Oral examination</p>
Further information	
Sustainable development goals - Agenda 2030	<p>\$lbl legenda sviluppo sostenibile</p>