

Program	09TT- Engineering in Telecommunication Technologies and Services
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Course number and name	
Number	95000094
Name	Bioengineering and Telecommunications Bioingeniería y Telecomunicación
Semester	Y3-S6

Credits and contact hours	
ECTS Credits	3
Contact hours	45

Coordinator's name	María Elena Hernando Pérez
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Specific course information		
Description of course content		
The course goal is to provide students with basic training in the field of bioengineering from the perspective of telecommunication engineering technologies and expertise.		
List of topics to be covered		
1. Historical antecedents of bioengineering; fundamentals of neurophysiology, electrophysiology and cardiac mechanics, 2. modelling of biomedical systems and applications, 3. Fundamentals of bioinstrumentation and bioelectromagnetism, 4. Biomedical signals and medical images for diagnosis, monitoring and therapy, 5. Applications of telecommunication and information technologies in medicine, 6. Interoperability of medical records, 7. Applications of ambient intelligence, biophotonics, assistive technologies and training in minimal invasive surgery.		
Prerequisites or co-requisites		
None		
Course category in the program		
<input type="checkbox"/> R (required)	<input checked="" type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

Specific goals for the course	
Specific outcomes of instruction	
RA100 - Develop the ability to work in a team by finding sources of information.	
RA101 - Develop the capacity of oral presentation of technical information.	
RA180 - Understand the main cutting edge technologies in biomedical engineering,	

which are based on information technologies and communications.
 RA181 - Application of the student's knowledge in a professional manner and acquisition of skills for the development and sustaining of arguments and solving problems within biomedical engineering.
 RA182 - Ability to gather information and interpret relevant data to make judgments in the field of biomedical engineering.

Student outcomes addressed by the course

CG1, CG2, CG3, CG4, CG7, CG8
 CECT3

Bibliography and supplemental materials

- Wiley Encyclopedia of Biomedical Engineering, Metin Akay (Ed.), Wiley-Interscience, 2006.
- The Biomedical Engineering Handbook (Second Edition), Joseph D. Bronzino, CRC Press, IEEE Press, 2000.
- Anatomía y Fisiología, Gary A. Thibodeau y Kevin T. Patton, Elsevier, 2009.
- Presentations available in the web of the course (Moodle).

Teaching methodology

<u> X </u> lectures	<u> </u> problem solving sessions	<u> X </u> collaborative actions	<u> </u> laboratory sessions
Other: Teamwork, oral presentations.			