



Universidad Autónoma  
de Madrid

## BIOMEDICAL ENGINEERING DEGREE

**ACADEMIC YEAR 2020/2021(1<sup>st</sup> year)**



Studies

Biomedical Engineering Degree



Centre

**Management Administration Student:**

Technical College  
Campus de Cantoblanco  
28049 – Madrid  
Phone: 91 497 22 23/ 22 26  
[Web Page](#) ↗

**Teaching:**

Technical College  
Campus de Cantoblanco  
28049 – Madrid  
Phone: 91 497 22 23/ 22 26  
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Faculty of Sciences  
C/ Francisco Tomás y Valiente, 7  
Campus de Cantoblanco  
28049 – Madrid  
Phone: 914978264  
[Web page](#) ↗

Faculty of Medicine  
C/ Arzobispo Morcillo, 2 y 4  
28029 – Madrid  
Phone: 914975344/5457/5458 y 5307  
[Web page](#) ↗



Knowledge Branch

Engineering and Architecture



ECTS Credits

240



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#### ECTS CREDITS

Basic training (FB)	78
Compulsory (OB)	105
Optional (OP)	24
External practical (PE)	24
End-of-degree Project (TFG)	9
<b>Total</b>	<b>240</b>

#### FIRST YEAR

Code	Subject	Credits	Type	Semester
<u>19695</u>	MATHEMATICS I	6	FB	1
<u>19696</u>	PHYSICS I	6	FB	1
<u>19697</u>	GENERAL CHEMISTRY	6	FB	1
<u>19698</u>	ANATOMY	6	FB	1
<u>19699</u>	CELLULAR BIOLOGY AND GENETICS	6	FB	1
<u>19700</u>	MATHEMATICS II	6	FB	2
<u>19701</u>	PHYSIOLOGY	6	FB	2
<u>19702</u>	BIOCHEMISTRY	6	FB	2
<u>19703</u>	PROGRAMMING	6	FB	2
<u>19704</u>	ELECTRONICS TECHNOLOGY	6	OB	2

#### SECOND YEAR IMPLANTATION: YEAR 2021/2022

Code	Subject	Credits	Type	Semester
19705	MATHEMATICS III	3	FB	1
19706	ALGORITHMS AND DATA STRUCTURES	6	FB	1
19707	DIGITAL CIRCUITS	6	OB	1
19708	SIGNALS AND SYSTEMS	6	OB	1
19709	BIostatistics	3	OB	2
19710	DIGITAL SIGNAL PROCESSING	6	OB	2
19711	BIOMEDICAL DATA MANAGEMENT	6	OB	2
19712	ADMINISTRATION AND MANAGEMENT OF BUSINESS AND TECHNOLOGICAL PROJECTS	6	FB	2
19713	PHYSICS II	9	FB	1 y 2
19714	PATHOPHYSIOLOGY	9	OB	1 y 2

#### THIRD YEAR IMPLANTATION: YEAR 2022/23



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Code	Subject	Credits	Type	Semester
19715	BIOMECHANICS AND BIOMATERIALS	6	OB	1
19716	ELECTRONIC BIOINSTRUMENTATION	6	OB	1
19717	FUNDAMENTALS OF MACHINE LEARNING	6	OB	1
19718	INFORMATION SYSTEMS	6	OB	1
19719	FUNDAMENTALS OF DIGITAL IMAGE PROCESSING	6	OB	1
19720	SENSORS AND BIOSIGNAL CONDITIONING	6	OB	2
19721	FUNDAMENTALS OF WIRELESS DEVICES AND ELECTROMAGNETIC COMPATIBILITY	3	OB	2
19722	BIOMEDICAL DATA SCIENCE	6	OB	2
19723	FUNDAMENTALS OF BIOMEDICAL DIGITAL SIGNAL PROCESSING	3	OB	2
19724	TECHNOLOGICAL FUNDAMENTALS FOR MEDICAL IMAGING	6	OB	2
19725	CHEMICAL BIOSENSORS	3	OB	2
19726	FUNDAMENTALS OF CLINICAL MEDICAL IMAGING	3	OB	2

#### FOURTH YEAR IMPLANTATION: YEAR 2023/2024

19727	HOSPITAL ROTATIONS	12	PE	1
	ELECTIVES A	18	OP	1
19728	BIOETHICS	3	OB	2
19729	PROFESSIONAL INTERNSHIP	12	PE	2
19730	HOSPITAL ROTATIONS EXTENSION	12	PE	2
	ELECTIVES B	6	OP	2
19731	BACHELOR THESIS	9	TFG	2

#### OPTIONAL SUBJECTS A

Code	Subject	Credits	Type	Semester
19732	NANOBIMATERIALS	6	OP	1
19733	CLINICAL SIMULATION AND MODELING	6	OP	1
19734	TISSUE ENGINEERING AND REGENERATIVE MEDICINE	6	OP	1
19735	BIOMEDICAL TECHNOLOGIES OF RADIOFREQUENCY, MICROWAVE AND ELECTROMAGNETIC SECURITY	3	OP	1
19736	BIOMEDICAL SIGNAL PROCESSING EXTENSION	3	OP	1
19737	SYSTEMS AND APPLICATIONS FOR e-HEATH	6	OP	1

#### OPTIONAL SUBJECTS B



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<b>Code</b>	<b>Subject</b>	<b>Credits</b>	<b>Type</b>	<b>Semester</b>
19738	ENTREPRENEURSHIP FOR KNOWLEDGE-BASED COMPANIES	6	OP	2
19739	DRUG DISCOVERY AND THERAPY EVALUATION	6	OP	2
19740	REHABILITATION TECHNOLOGIES	6	OP	2