



MSc Biomedical Engineering and Technology

Academic year
2024-2025



KEY INFO

Duration: 1.5 years (3 academic semesters)

Studies start: October 2024

Course attendance: Full-time, compulsory

ECTS: 90

Teaching Language: English

Tuition fees: 1200 €

Call for applications 2023-2024: till 15/09/2024

Click [here](#) for more info

TARGET GROUP

Those holding a Bachelor (B.Sc.) university degree related to engineering, technology, life, and health sciences or other relevant to biomedical engineering sciences, who wish for a career change in Biomedical Engineering

PROGRAM'S GOALS

a/ **intensive introduction** to biomedical engineering,

b/ **problem-solving** skills development,

c/ **active interaction** with the biomedical engineering industry,

d/ **prepare** students for **PhD studies**.

PROGRAM'S TOPICS

- In vitro and in vivo diagnostic technologies,
- Medical Imaging,
- Biomedical instrumentation,
- Rehabilitation and biomaterials,
- Biomedical informatics,
- Artificial intelligence,
- Deep learning,
- Emergency medicine,
- Science, technology, ethics,
- Marketing, management and sales,
- Research methodology,
- Labor market – The biomedical engineering profession.

TEACHING STAFF

a/ Invited professors from **8 Universities:**

- *University of West Attica, Greece (host institution),*
- *National Kapodistrian University of Athens, Greece,*
- *Instituto Politécnico do Porto, Portugal,*
- *Universidad Rey Juan Carlos, Spain,*
- *Georgia Institute of Technology, USA,*
- *University of Plymouth, UK,*
- *Universitatea Politehnica din București, Romania,*
- *Trier University of Applied Sciences, Germany.*

b/ Invited Researchers from biomedical engineering research facilities.

c/ Invited biomedical engineers from the labor market.

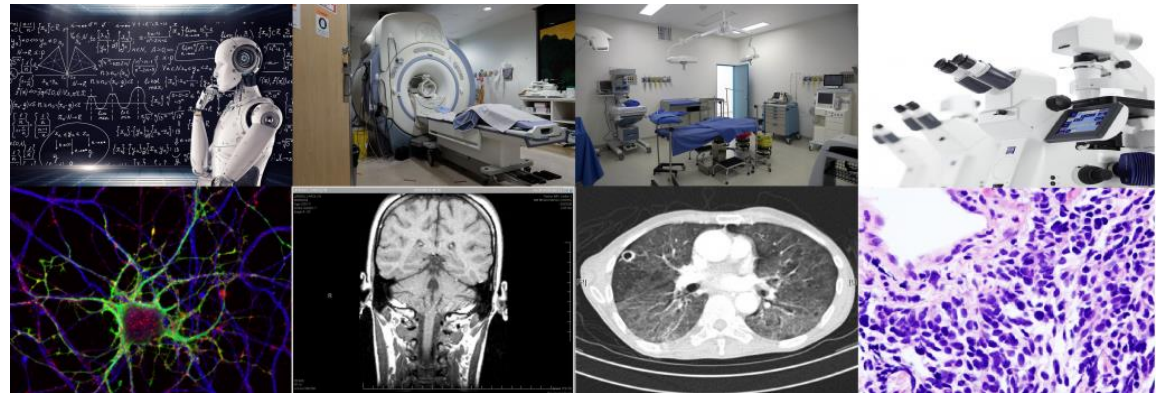
CONTACT INFO

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CAREER PROSPECTS

The field of Biomedical Engineering stands as one of the largest industrial sectors globally, boasting tens of thousands of manufacturers producing over 500,000 different types of biomedical products. Specifically, in 2022, the European medical technology industry employed over 730,000 individuals across 32,000 companies, demonstrating a dynamic and growing job market (source: Medtech Europe). Similarly, in the US, the biomedical engineering sector currently sustains approximately 19,300 jobs, with expectations of a 6% increase by 2030 (source: United States Bureau of Labor Statistics).

Given that a) modern medicine and biology are heavily reliant on evolving technology and b) the aging population drives the need for technologies supporting prolonged, high-quality life, biomedical engineers are poised to play pivotal roles in the upcoming technological era.

Career opportunities for biomedical engineers may include:

- **Biomedical Technology Industry** (service, application specialist, sales and marketing, field engineer, etc.),
- **Hospitals, clinics, healthcare centers,**
- **Research and academia,**
- **Computing and information technology,**
- **Other engineering-related fields,**
- **Business and Administration,**
- **Management and Finance,**
- **Start-ups, spin-off businesses,**
- **Teaching.**

A recent study conducted by the BME Department in February 2022 investigated real-world conditions and the Biomedical Engineering (BME) labor market in Greece. The study revealed that BME graduates often secure job placements even before completing their studies, with an impressive 55.6% finding their first job in the BME market prior to graduation. Participants perceive BME jobs as highly interesting (74.1%), within favorable work environments (71.0%), offering satisfactory career prospects (45.6%), along with satisfactory net salaries (44.0%) and working hours (50.8%).

The study concluded that there is a significant demand for biomedical engineers in the Greek labor market, despite the country's ongoing economic recession spanning the past 12 years.

PROGRAM CURRICULUM 2024-2025

1 ST SEMESTER		
COURSE TITLE	R: Required E: Elective	ECTS
The science of Biomedical engineering	R	2.5
Research methodology	R	2.5
Biology-Biotechnology	R	5
The Biomedical engineering industry sector I	R	5
Biostatistics	E	5
Medical signal and image processing	E	5
Biomedical marketing	E	5
Quality Assurance and Medical Device Regulations	E	5
Biomechanics and Biomaterials	E	5
REQUIRED ECTS FOR THE 1ST SEMESTER		30

2 ND SEMESTER		
COURSE TITLE	R: Required E: Elective	ECTS
Diagnostic Medical Imaging Systems	R	5
Biomedical Instrumentation	R	5
The Biomedical engineering industry sector II	R	5
Emergency medicine	E	5
Control systems in biomedical engineering	E	5
Bioinformatics	E	5
Human-machine interaction in healthcare	E	5
Machine Learning in Medicine and Biology	E	5
Science, Technology, Society: Biomedical Engineering, Social Aspects, Ethics	E	5
REQUIRED ECTS FOR THE 2ND SEMESTER		30

3 RD SEMESTER		
COURSE TITLE	R: Required E: Elective	ECTS
Diploma thesis	R	30
REQUIRED ECTS FOR THE 3RD SEMESTER		30

For the program's successful completion, a minimum of ninety (90) ECTS is required, with at least 30 ECTS per semester. *Elective courses are organized only if selected by more than 30% of registered students.*