Biomedical Engineering

MASTER's degree education
If life is a journey, then education is the ticket - this is our credo and the manner in which we quantify the importance of education at Grigore T. Popa University of Medicine and Pharmacy of Iasi, a medical higher education institution with over 135 years of tradition.

Viorel Scripcariu, MD, PhD,
Rector of The “Grigore T. Popa” University of Medicine and Pharmacy of Iasi, Romania

The Grigore T. Popa University of Medicine and Pharmacy of Iasi has been included in the Times Higher Education World University Rankings.

Currently the university has over 10,000 students, including 2,500 international students from over 60 countries.
Reasons to pursue Biomedical Engineering Master’s Degree

The Master of Science in Biomedical Engineering was created to respond to increased needs for healthcare in our society. A biomedical engineer acts as an integrator between medical specialists and technological specialists.

The broad technological background that is essential in biomedical engineering also makes biomedical engineers attractive to conventional industrial sectors.

Integrated approaches to enable prevention of injury and disease and support healthy aging and engineered novel therapeutics.
1st Year

Mandatory Disciplines

1st semester
- Functional Anatomy, Applied Physiology
- Applied biochemistry and cell biology
- Biomedical Data Analysis, Advanced Bioengineering Methods Laboratory
- Research methods in biomedical engineering
- Professional Practice

2nd semester
- Biomedical Materials
- Biotechnology and Biosafety
- Hospital Medical Equipment, Management and Entrepreneurship
- Professional Practice

Elective Disciplines
- Biomimetics and Bio-inspired Structures
- Cellular Toxicology
- Health Technology Management
- Pharmaceutical analysis of Bioactive compounds
- Metrology and Certification of Medical Devices
- Micro & Nanotechnologies for Medical Applications
2nd Year

Mandatory Disciplines (1st semester)
- Clinical applications of medical devices, Translational Medicine

Elective Tracks

Track A
Clinical Bioengineering
- Assistive devices and technologies, Telemedicine & e-health
- Radiation therapy and Dosimetry

Track B
Advanced Biomaterials
- Tissue Engineering and Regenerative Medicine
- Biomaterials biocompatibility, Implant design and Technology

Track C
Medical Biotechnologies
- Laboratory clinical analysis, Quality insurance by GMP/GLP
- Cosmetics and Pharmaceuticals Biotechnologies

Mandatory Disciplines (2nd semester)
- Professional Practice / Preparation of Master Thesis
Where biomedical engineer is working?

- Hospitals
- Biomedical industries
- Prosthetics companies
- Private practice
- Pharmaceutical and biotechnology industries
- Engage themselves in advance study in biomedical engineering or a related field.
How do biomedical engineers differ from other engineers?

- Biomedical engineers must integrate biology and medicine with engineering to solve problems related to living systems.
- Biomedical engineers are expected to integrate their engineering skills with their understanding of the complexity of biological systems in order to improve medical practice.
**Master’s degree in Biomedical Engineering**

- 2 years graduate degree, 120 credits
- Curriculum designed to develop professional competencies
- Clinical education across diverse areas of practice

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<tr>
<th>Master’s degree in Biomedical Engineering</th>
<th>Maximum 45 students/year</th>
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<tr>
<td><strong>FEE</strong></td>
<td><strong>2500 euro/year</strong></td>
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**Admission Process:**

Education in *biomedical field* is an essential part of the medical educational process. “Grigore T. Popa” University of Medicine and Pharmacy of Iasi pays maximum attention to this subject area and has concluded partnerships with hospitals. It is able of providing its students with a solid set of theoretical knowledge and with a complex practical traineeships, meant to refine their training as future professionals.
Learning outcomes of the study programme (Diploma Supplement)

Track A
Clinical Bioengineering

• Ability to apply different methods for signal and image processing for implementing a project in biomedical engineering field and to use of assistive technology devices and services and to understand the functional approach to the assessment of assistive technology needs and various technologies used by people with disabilities

• Ability to apply knowledge of engineering science in the solution of radiation therapy and dosimetry, and to use and to design an e-health or a telemedicine system
Learning outcomes of the study programme (Diploma Supplement)

Track B
Advanced Biomaterials

- Design complex materials for tissue engineering and advanced techniques for investigation and therapy and realize their application;
- Identify the functional characteristics and properties of the elements for implant / prosthesis according to the applicable standards in the field apply the principles of production of orthoses, prostheses and other medical devices.
Track C
Medical Biotechnologies

- Performing of laboratory clinical analysis, selection of working techniques, principles and methods of dosing, investigating correlations between physiological and pathological variations in order to establish a positive and differential diagnosis;
- Identify and manipulate equipments and specific advanced techniques for obtaining and processing of bioproducts. Perform the quality control according to the international ethical standards, and the risk assessment.
Why Iasi, Romania?

- The Palace of Culture
- Moldavia and Bucovina Metropolitan Cathedral
- "Vasile Alecsandri" National Theatre
- Union Museum
- Union square

History and culture
Why Iasi, Romania?

Health through movement
Living costs in Iasi

- A coffee 1.5-4 €
- Restaurant menu 7 €
- A refreshment 1 €
- 1 sandwich 2 €
- 1 pizza 4-5 €
- 1 bottle of water 500 ml 0.5 €
- 1 bus ticket 0.45 €
- Rent a car (start price) 15 €/day
- Room rent 100-200 €/month
- A ticket to Romanian National
- Opera/Theatre/Cinemacity/Concerts 4-5 euro
So, you’d like a career in biomedical engineering... the Biomedical Engineering Master Programme is waiting for you with high technology and modern laboratories...

• The degrees diplomas awarded are recognized in the European and non-European countries, which enables foreign graduates to integrate in different medical fields easier
• Start thinking now about what your passions are and discover your talent!
• If you choose a study path that interests you, you will have more chances to stay with it and do well, do not hesitate to contact us:

Email: bioinginerie@umfiasi.ro
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“The human foot is a masterpiece of engineering and a work of art”
Leonardo da Vinci

Excellence in education!

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