

GRIGORE T. POPA UNIVERSITY OF MEDICINE AND PHARMACY IASI, ROMANIA
Faculty of Medical Bioengineering

Biomedical Engineering

MASTER's degree education



GRIGORE T. POPA UNIVERSITY OF
MEDICINE AND PHARMACY IASI

excellence in medical education since 1879

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 foreign 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*

Mandatory Disciplines

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 Track

1st semester

Track A

- Clinical Bioengineering

Track B

- Advanced Biomaterials

Track C

- Medical Biotechnologies

- Advanced Biosignal & Medical Image Processing
- Assitive devices and technologies
- Radiation therapy and Dosimetry
- Telemedicine & e-health

- Tissue Engineering and Regenerative Medicine
- Functional biomechanics, prosthesis and implants
- Biomaterials biocompatibility
- Implant design and Technology

- Bioprocess Design
- Laboratory clinical analysis
- Quality insurance by GMP/GLP
- Cosmetics and Pharmaceuticals Biotechnologies

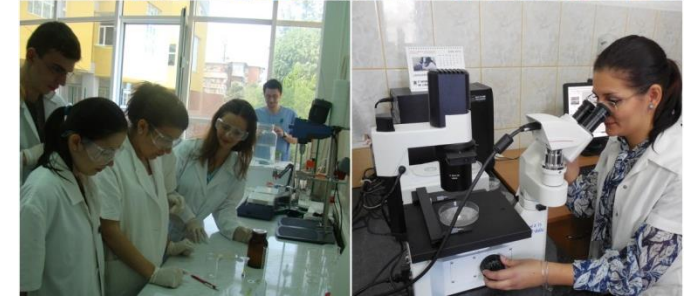
Mandatory Disciplines

2nd semester

- Profesional 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.



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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

Master's degree in Biomedical Engineering	Maximum 45 students/year
FEE	2500 euro/year

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 knowlegde and with a complex practical traineeships, meant to refine their training as future professionals

Learning outcomes of the study programme



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



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.



Learning outcomes of the study programme



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



Union Museum



“Vasile Alecsandri” National Theatre



Union square



Why Iasi, Romania?

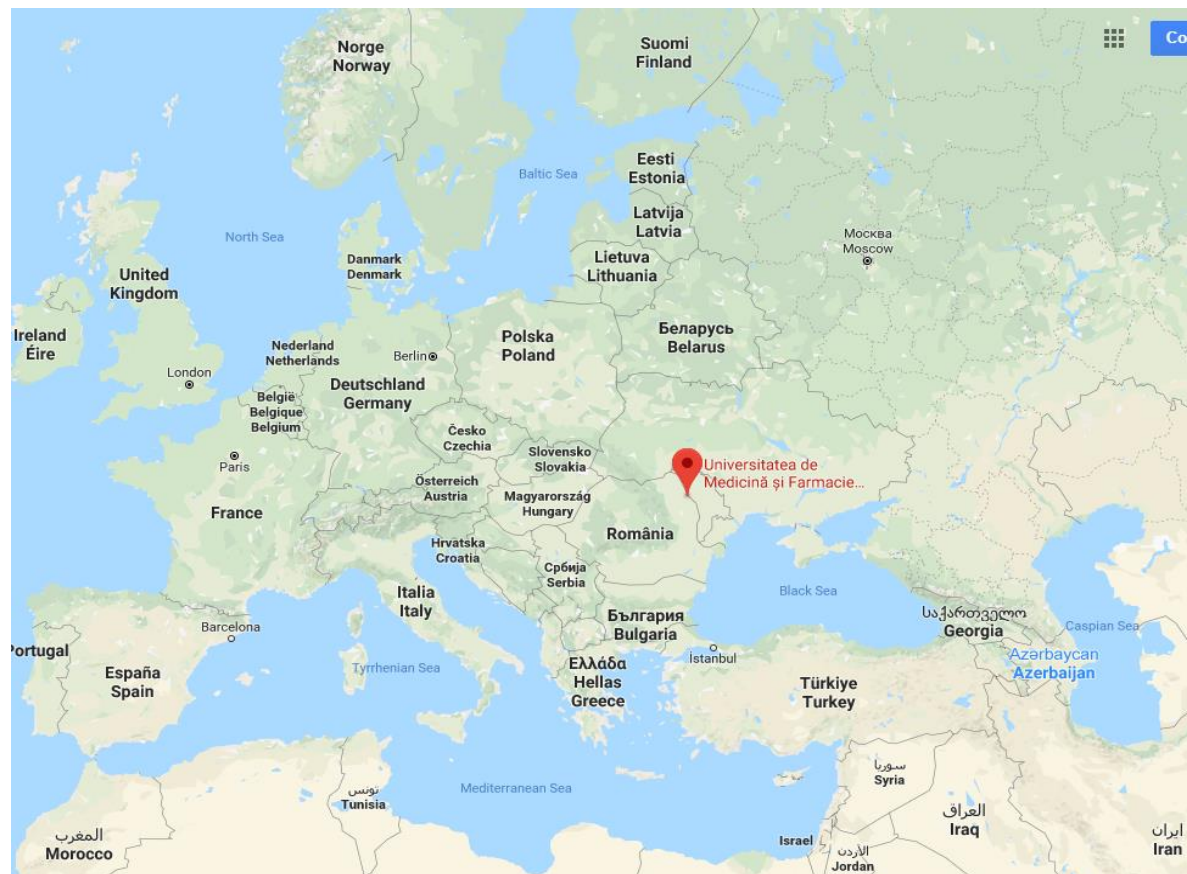
Health through movement



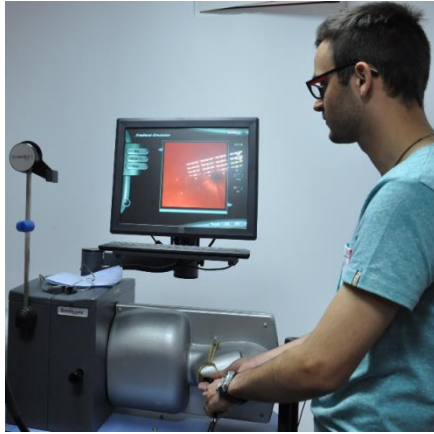
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Living costs in Iasi

- 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:**



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“The human foot is a masterpiece of engineering and a work of art”

Leonardo da Vinci

Excellence in education!

