MEDICAL ENGINEERING

VISIONARY

Dipl.-Ing.
Full-time

Campus
LINZ

Engineers for Qualified Medical Product Development and Placement

The international Master's degree programme enables students to engineer medical devices as well as products and to position them on the market. They can choose out of a catalog of electives in the fields of Electronics, Biomechanics, Medical Device Software and Materials Technology. These are enhanced by courses in Medical Technology (e.g. Advanced Systems for Diagnostics, Clinical Treatment Systems and Bionic Implants), Medical Systems Engineering (including Product Management and Regulatory Affairs), Medicine, Mathematics and Statistics. As part of project work and master's thesis, students can apply their skills within companies, research institutes or hospitals to develop, produce and/or integrate modern medical devices or products. Graduates are qualified as engineers with the ability to develop medical devices and products within the EU-regulatory framework and to consider FDA regulations. Application areas are medical imaging systems, assisted medical robotics, pacemakers, bionic prostheses, AI-based support systems and many more.

Career Profile

It is the solid professional and scientific knowledge paired with applied engineering skills which prepares graduates for leadership functions in larger projects, in product development or, alternatively, for an academic career as a researcher. Medical engineers are employed in research, engineering, production and fields of regulatory affairs, for quality control, as product managers and also as qualified advisors for technical sales. Graduates can apply their knowledge immediately.

Focus of Studies

In small teams students gain experience, how to develop medical products. Therefore we combine scientific methods with practical applications.

- Applied Mathematics and Statistics
- Medicine for Medical Engineers
- Advanced Medical Imaging and Diagnosis Systems
- Clinical Treatment Systems and Bionic Implants
- Electives in the fields of Electronics, Biomechanics, Medical Device Software, Materials Technology
- Regulatory Affairs
- Medical Systems Engineering
- Projectwork and Master's Thesis
- Students can participate in a number of R&D projects during the programme

Study Abroad

Students can participate in international activities (e.g. in Europa, USA or Asia). Projects abroad, conferences with international speakers or participation in international fairs – the possibilities are manifold.

Essential Information

Degree:
Dipl.-Ing.
The academic degree 'Dipl.-Ing.' corresponds to the international degree MSc.

Duration:
4 Semesters (120 ECTS)

Annual Intake:
23

Admission Requirements:
graduates of Medical-/Biomedical Engineering Bachelor's degree programmes in engineering with 180 ECTS points or more

Application:
online
www.fh-ooe.at/application
EU-member: 30th June
Non-EU-member: 31st March

Admission Procedure:
interview

Language of Instruction:
English

Tuition Fees:
EU/EEA citizens: 363.36 EUR per semester (plus Austrian Student Union fee).
Citizens from non-EU/EEA countries: 726.72 EUR per semester (plus Austrian Student Union fee). Scholarships available.

Curriculum NEW

List of courses	ECTS credits per semester			
	1	2	3	4
Basics				
Applied Mathematics	4	2,5		
Applied Statistics		2,5		
Selected Topics in Medicine for Medical Engineers	1	1		
Catalog of Electives (choose 15 ECTS per semester)				
Electronics				
Electronic Circuit Design	2,5			
Power Supply Systems		2,5		
Embedded Systems	2,5	2,5		
Biomechanics				
Musculoskeletal Systems Modeling and Simulation	2,5			
3D Motion Capture and Analysis	2,5			
Biomechanical Laboratory		2,5		
Numerical Methods in Biomechanics		2,5		
Medical Device Software				
Applied Software Life Cycle Processes	2,5			
Applied Programming	2,5	2,5		
Artificial Intelligence		2,5		
Materials Technology				
Advanced Materials	5			
Surface Technology		2,5		
Molecular Test Systems		2,5		
Medical Technology				
Advanced Medical Imaging and Diagnosis Systems	5	2,5		
Clinical Treatment Systems		3,5		
Bionic Implants	2,5	1,5		
Technological Innovation in Medicine	2,5	1,5		
Medical Systems Engineering and Project				
Applied Systems Engineering			4	
Requirements and Usability Engineering			2,5	
International Product Management			2	
Regulatory Affairs			2,5	
Project Scientific or Professional			19	
Master Thesis				
Master Thesis				28
Master's Examination				2
Optional Courses				
German Language	3	3		
Introduction to Programming-Tools	2,5			
Cellular Biophysics	1			

Total (excl. optional courses)	30	30	30	30

ECTS: European Credit Transfer and Accumulation System.

Praxis and Research

Medical Engineering is the branch of industry that most often registers new products with the European Patent Office. Each year, the market grows by roughly 5% and global research expenditures meanwhile exceed 30 billion dollars. With our own research focuses in Medical Simulation Systems, Motion Measurement and Prosthetics, as well as Medical Microscopy/Biomedical Life Sciences, we are pushing innovation and provide our students with research-oriented, state-of-the-art education.

Did You Know that ...

... Medical Engineering considers many innovative technologies and delivers highly safe and effective medical devices and medical products. They help to support human beings and improve the quality of their lifes. Actually, more than 500 graduates of FH Upper Austria show their expertise within this amazing branch.

Contact

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