INTERNATIONAL MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

International Master Programme jointly organised by University of Groningen (The Netherlands; co-ordinator), Aachen (Germany), Dublin (Ireland), Ghent and Brussels (Belgium) and Prague (Czech Republic).

120 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: DOUBLE/JOINT MASTER OF SCIENCE

COURSE CONTENT

The International Master course prepares students from Europe and beyond for a profession in Biomedical Engineering.
The biomedical engineer generates knowledge from the molecular to the organ and system level. You will develop new materials, devices, tools, systems and methods for the early diagnosis, prevention and treatment of disease in order to improve and guarantee the health care and quality of life of the society.

Biomedical Engineering (BME) is a broad multidisciplinary area, involving many sub-specialisations, varying from regenerative medicine to implant design and from PET-scan imaging to biosensors. It is, for a single university, difficult to have in depth knowledge of all sub-specialisations in Biomedical Engineering to teach their students on an adequate level. In addition a genuine European and international learning experience is difficult to gain when students stick to a single university. Therefore a consortium of six well reputed universities has merged their knowledge and specific expertise into a two-year European Master in Biomedical Engineering.

The student follows the first and second year at two different universities but any combination is possible. In this way, the student has maximum freedom to create a master's programme tailored to his/her interests and to choose the preferred specialisation.

COURSE STRUCTURE

During the first two semesters (60 credits) each university teaches the students about basic biomedical engineering topics. These courses define the basic level of competence of students. These basic courses prepare the student for a subsequent specialisation. Traineeships have to be followed in a hospital and/or industry.

In the third semester (30 credits) students move to one of the other participating universities to follow lectures within a specific **specialisation domain**. Lectures are based on key research lines of these universities, so students get state-of-the-art knowledge, preparing them optimally for future developments in BME:

- **Groningen:** Biomaterials & Nanotechnology, Imaging Physics
- **Aachen:** Tissue Engineering, Artificial Organs & Implants, Image-Guided Therapy & Molecular Imaging
- **Dublin:** Tissue Biomechanics & Regenerative Medicine, Neural Engineering
- **Ghent & Brussels:** Radiation physics & Medical imaging, Biophysics for Medical Applications
- **Prague:** Medical Instrumentation, Modern Physical Methods in BME, Medical Imaging Instrumentation

> Master's dissertation

In the final semester students work, individually, on a master project and write a master dissertation. This project can be a research and/or a design assignment. The project will be finalised with a written report and an oral presentation. During this project the student applies all acquired knowledge and skills:

- to solve a problem by designing a device (in case of a design assignment);
- to formulate answers to a scientific question by performing scientific research (in case of a research assignment).

Assessment will be based on the report and a presentation.

CAREER PERSPECTIVES

Students are trained to do research and critically reflect on their work and they are well prepared to perform as a PhD-student at a university, do research in large industry R&D-departments or to perform applied research (e.g. design of a second generation discus prosthesis, minimally invasive heart support devices ...).

Thanks to their broad and solid scientific training and international view these students are also well prepared for the task of product manager in an industry, leading an R&D-department of an industry, working as a project leader on applied research, medical physics engineer in a hospital. Their teamwork skills and knowledge of biomedical engineering make them suitable for hospital or clinical engineers who support and improve patient care by applying engineering and management skills to health care technology. They are involved in technical support of daily practice, training of health care professionals, introducing safety programmes, etc.

The broad view on the various BME-fields, the capability in making judgements, integrating medical, cultural, social, ethical insights make them very well suited for functions in government/public health, consultancy in a wide spectrum of functions (from product design to safety regulations), notified bodies (screening new products for a CE-mark), health insurance, improving health care and controlling costs.

INTERNATIONAL MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

120 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: DOUBLE/JOINT MASTER OF SCIENCE

TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Na geschiktheidsonderzoek:

- Ba ingenieurswetenschappen (inclusief Ba ingenieurswetenschappen: architectuur)
- Ba ingenieurswetenschappen: bouwkunde
- Ba ingenieurswetenschappen: chemische technologie en materiaalkunde
- Ba ingenieurswetenschappen: toegepaste natuurkunde
- Ba ingenieurswetenschappen: elektrotechniek
- Ba ingenieurswetenschappen: werktuigkunde-elektrotechniek
- Ba ingenieurswetenschappen: computerwetenschappen
- ander diploma van (academische) bachelor

TAAL

Je voldoet aan de taalvoorwaarden op basis van je Vlaams diploma.

PRAKTISCHE INFORMATIE

Studieprogramma:
https://studiegids.ugent.be
> faculteiten > opleidingstypes > ga naar de opleiding van je keuze

Alternatieve trajecten

Meer informatie over voorbereidings- en brugprogramma's op www.ugent.be/ea
volg > alles voor toekomstige studenten > voor wie al een diploma heeft

Infomomenten

Masterbeurs
www.ugent.be/masterbeurs
Infosessie
24 april 2019 - 17 u.-19 u. doorlopend, Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33 - Foyer
www.ugent.be/nl/studeren/masteropleidingen

Contact
Prof Dr Patrick Segers – Faculty of Engineering and Architecture
Study Programme Committee Biomedical Engineering
Campus UZ, Corneel Heymanslaan 10, 9000 Gent
Patrick.Segers@ugent.be
www.ugent.be/ea/bme

Meer info
Afdeling Studieadvies – Campus Ufo, Ufo,
Sint-Pietersnieuwstraat 33, 9000 Gent, T 09 331 00 31
studieadvies@ugent.be – www.ugent.be/studieadvies

INTERNATIONAL MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

120 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: DOUBLE/JOINT MASTER OF SCIENCE

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

To ensure quality of the programme the enrolment is limited to 20 students per consortium university. The consortium reserves at least 15 places for third-country students. The admission is granted to applicants who meet the following selection criteria: a Bachelor in Engineering or equivalent. Applicants in the final year of their Bachelor's study may also apply. Certificate is to be delivered to the coordinating institute in Groningen.
Degree certificates, originating from other than the consortium universities, will be judged by the consortium secretariat that use lists of universities with a sufficient level of quality.

LANGUAGE

More information regarding the required knowledge of English:
www.ugent.be/languagerequirements
See also: www.biomedicaltechnology.eu

PRACTICAL INFORMATION

Study programme

www.ugent.be/coursecatalogue
> by Faculty > Programme types > select your Programme

Application deadline

The International master has a specific application procedure.
www.biomedicaltechnology.eu

Enrolling institution

University of Groningen (The Netherlands)

Tuition fee

Separate amounts and procedures apply.
Payment upon enrolment is rare but mostly settled between the programme coordinators.
Application for enrolment is directly through the secretariat of the Programme. For programme specific information, please contact the programmes directly: www.biomedicaltechnology.eu

Contact
Faculty of Engineering and Architecture
International Relations Officer – Degree students
Annelies Vermeir – annelies.vermeir@ugent.be
T +32 9 264 36 99 – internationalplateau.ea@ugent.be

Last update: January 2019