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, the required European and international scope is difficult to gain when students stick to a single university.
Therefore a consortium of six universities has joined their knowledge and specific expertise into a two-year European Master in Biomedical Engineering. The student follows the first and second master 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. With these basic courses the student can then follow every specialisation, offered in the third and fourth semester. Traineeships have to be followed in a hospital and/or industry.
In the third semester (30 credits) students move to another one of the participating universities to follow lectures on a specific **specialisation**. 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

The fourth semester encompasses the master's dissertation to be performed within the context of the chosen specialisation at one of the six participating universities.

> Master's dissertation

An individual master's dissertation will be performed by the student. 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 will apply 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 perform research and critically reflect on their work and are well prepared to perform as a PhD-student at a university, do research at a large industry R&D-department or to perform applied research (e.g. design of a second generation discus prosthesis, minimally invasive heart support devices ...). Thanks to their broad scope 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.

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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
Opleidingsgebonden infosessie
18 april 2018 - 17 u.-19 u. doorlopend, Campus Ufo, Ufo, Sint-Pietersnieuwstraat 33 - Foyer
www.ugent.be/nl/studeren/masteropleidingen

Contact
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www.ugent.be/ea/bme

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

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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
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