

Biomedical Engineering

Master of Science in Engineering



Introduction

The MSc in Biomedical Engineering is a unique study programme offered jointly by the Technical University of Denmark (DTU) and the Faculty of Health and Medical Sciences at the University of Copenhagen (KU). It aims at educating engineers with a comprehensive understanding of the clinical problems in modern medicine and provides the ability to suggest novel technological solutions. Students are enrolled at both universities and spend 70 per cent of their time at DTU and the remaining 30 per cent at KU.



The students have the opportunity to specialize in five attractive and challenging focus areas:

- Medical Imaging & Radiation Physics
- Biomedical Signal Processing
- Bioinstrumentation
- Biomodelling, Cellular Signalling & Transport Phenomena
- Biomechanics & Biomaterials

The scientific environment includes many internationally reputed research groups within Ultrasound Imaging, Magnetic Resonance, Positron Emission Tomography, Biomechanics, Hearing Aids, Image Interpretation, Biomedical Signal Processing, Brain Computer Interface, Cellular Signalling as well as other areas.

The open and informal environment makes it easy to find an interesting subject for the MSc thesis and a chance to participate in world class research.



Career opportunities

With the MSc in Biomedical Engineering, you will be able to analyze complex problems and develop rational and robust solutions. Based on your advanced knowledge of mathematics, science, medicine and technology, you will have many exciting career opportunities in:

Hospitals

- Develop and optimize methods and equipment
- Participate in clinical research
- Test and maintain complex technical installations
- Training of other staff groups

Companies/industries

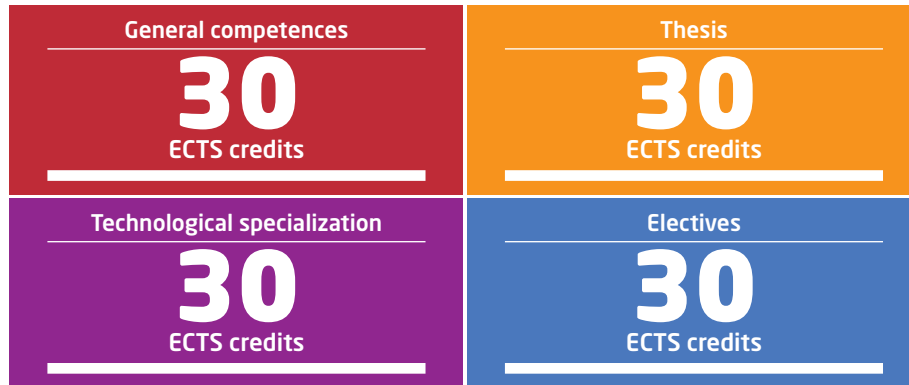
- Research and product development
- Participation in research planning
- Sales, marketing and services

Universities/research institutions

- Teaching
- Research

Structure of the MSc programme

The MSc programme is an inter-disciplinary, research-based, 2-year programme taught in English requiring a workload of 120 ECTS credit points. It comprises four categories of courses:



General competency courses are designed to offer students the range of skills necessary to meet the complex challenges of a biomedical engineering career and include:

- Pathophysiology
- Statistical Design and Analysis of Experiments
- An advanced statistical course
- Medical Product Development



Technological specialization courses give the students an in-depth academic and technological knowledge necessary for obtaining state-of-the-art competences within a field of specialization. By combining the technological specialization courses with appropriate elective courses, students can create their own highly individual study programme within the following topics:

- Medical Imaging and Radiation Physics
- Biomedical Signal Processing
- Bioinstrumentation
- Biomodelling
- Cellular Signalling
- Transport Phenomena
- Biomechanics
- Biomaterials



The elective courses are an important part of the programme. Students can choose from a large pool of courses at DTU and KU to pursue their own scientific and professional interests. In addition to the above, elective courses can be found in several biomedical engineering areas such as:

- Biological Systems
- Biophysics
- Optics
- Micro and Nanotechnology

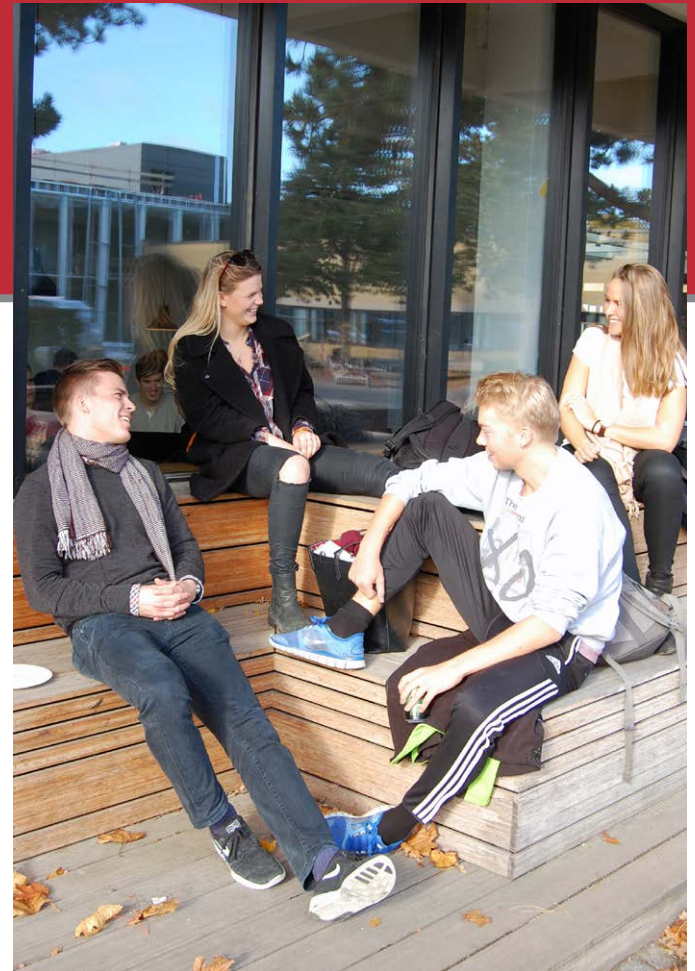


Thesis

The master's thesis marks the completion of the MSc programme. The project can be carried out at DTU or KU and in many cases in collaboration with one of our many industrial and hospital partners. The projects include elements of fundamental research, innovation and application.

Student life

This MSc programme has a unique social environment with an equal gender balance and a good atmosphere supporting learning and networking between students. Project work plays a central role in many of the courses and gives the students the perfect opportunity to work as a team and help build a large social network.



How to apply

DTU opens the MSc application site in November.

Apply at: www.dtu.dk/bme

Once all applications are received, they will be reviewed and evaluated by an admission committee. Subsequently, applicants may be invited for a 15-30 minute phone or Skype interview.



Offer of admission is based on several factors, including past academic performance, English language proficiency, statement of purpose, and letters of recommendation. Students should have good skills in mathematics, physics, chemistry, programming, engineering, and physiology and must hold a bachelor degree in biomedical engineering or closely related academic fields.

For a list of specific requirements, please visit: www.dtu.dk/bme and check 'Prerequisites'.



Contact

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