Bachelor of Science (BSc) and Master of Science (MSc)

Medical Engineering

INFORMATION

The Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) offers a broad range of studies that is unique in its diversity across all of Germany. The Faculty of Engineering, being one of the five faculties at FAU, is preceded by its excellent reputation in science as well as in commerce. For more than 40 years, highly qualified engineers and computer scientists are being educated in more than 20 extremely modern and interdisciplinary study lines.

Numbers and facts

of FAU

39,628 students
244 study programmes
30 programmes for early studies
Third-party funding of
171 million euros

Number of students

Numbers and facts: Faculty of Engineering

10,149 students
20 study programmes
6 programmes for early studies
Third-party funding of
62.5 million euros

Fields of Activity

- Further/new development of imaging techniques
- Development of highly complex devices for diagnostics and therapy
- Development and application of novel materials for implants and prostheses
- Development of surgical robots and assisting systems

In addition to working in research, various job opportunities present themselves to graduates of healthcare engineering in locations like medical technology companies or hospitals. A specialisation on topics like development, quality control, sales, and counselling or technical service and training for the handling of medical technical devices are further important assignment areas.

City of Erlangen and region

Erlangen, a lively city full of students, open to the world and with a strong standing in economics, is situated at the center of the dynamic “Metropolis of three cities” Erlangen-Nuremberg-Fürth. With more than 100,000 inhabitants (1/3 students), Erlangen offers the ideal size for living, learning and enjoying one’s time. The broad variety in the areas of cultural and leisure options opens up many possibilities for night owls as well as culture and sports enthusiasts. For more info, see www.erlangen.de and www.nuernberg.de

www.medizintechnik.studium.fau.de

For arrival by train, car or bus, please check:
www.tf.fau.de/infocenter/campussuche
1. General or subject-related (technical) qualification for university entrance

The master course of studies in Medical Engineering with a regular study period of 4 semesters, is a bachelor course of studies in Medical Engineering, with a scientific and practical orientation.

2. Requirements for Access and Enrollment

- Basic study requirements: 240 ECTS points (3 years)

3. The master programme Medical Engineering (4 semesters) can be started after successfully completing a subject-related bachelor programme.

4. Master studies

The master programme Medical Engineering (4 semesters) can be started after successfully completing a subject-related bachelor programme. 8 offers entering branches of study and the formation of one’s own profile. Only one branch is taught in English!

- Medical Electronics

   In the medical electronics programme, in-depth skills regarding hardware and software systems of medical devices are acquired. Fundamental knowledge of the engineering sciences in the field of electrical engineering, electronics, and information technology are the basis for this branch.

- Medical Image and Data Processing

   This branch is the only one taught 100% in English! Deepened expertise and methodological competence for software systems in medical engineering are to be acquired. They range from basic algorithms for image enhancement, image reconstruction, image registration, and computer-based diagnosis to medical information systems.

- Medical Devices, Manufacturing Engineering, and Prosthetics

   In this branch of study, the graduates gain in-depth expertise and methodological competence for construction and manufacturing of high-class medical-technical devices and implants in consideration of the interdisciplinary and special biological surroundings. Additionally, a research internship is integrated in the curriculum, which deepens scientific work. Depending on the choice of studies – either Medical Image & Data Processing, Medical Electronics, or Medical Devices & Manufacturing – one may decide on several propositions of the particular obligatory modules of the respective course of study. The M. Sc. graduation is the condition to continue your research-oriented career with a doctorate’s programme.

What about the career prospects?

The global market for medical devices is valued at approximately 200 Billion Euros at present. The growth of the market is predicted to be approx. 11%, which correlates to the average growth of sales per year. The positive result shows that the fact alone, 10 % of all medical engineers’ positions originate from Germany (number 2) and that approx. 170,000 employees are engaged in the medical engineering sector in Germany. Especially trained employees for medical engineering are still sought-after.