



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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# Master's degree



## Medical Engineering / Medizintechnik (MSc)

FH Aachen University of Applied Sciences • Jülich

### Overview

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| Degree                                   | Master of Science (MSc)  |
| Teaching language                        | <ul style="list-style-type: none"><li>• English</li><li>• German</li></ul>   |
| Languages                                | English and German<br><br>The lecturer may choose the language of instruction in consultation with the students.   |
| Full-time / part-time                    | <ul style="list-style-type: none"><li>• full-time</li></ul>  |
| Programme duration                       | 4 semesters  |
| Beginning                                | Winter and summer semester   |
| Application deadline                     | <p>In general, the application deadline starts around the beginning of November of every year for the programme beginning the following March, and around mid-June of every year for the programme beginning the following September. We recommend regularly checking our site for new updates before March/September of each year.</p> <p>See <a href="https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc/bewerbung">https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc/bewerbung</a> for current application deadlines. We only accept online applications!</p>  |
| Tuition fees per semester in EUR         | None   |
| Combined Master's degree / PhD programme | No   |
| Joint degree / double degree programme   | No   |
| Description/content                      | <p>Students acquire a wide-ranging, integrated knowledge and understanding of the scientific and technical fundamentals of their field of study. They have at their disposal a critical understanding of the basic theories, principles and methods dealt with during their studies, and are in a position to broaden this knowledge independently.</p> <p>Moreover, students gain the ability to collect and interpret data and use it to infer scientifically based judgements, as well as to implement appropriate solutions that take into account social, scientific, and ethical issues, and to construct continuous learning processes independently. They learn how to formulate and defend opinions and solutions with reference to their specific field, to exchange information, ideas, problems and solutions with experts and laymen, and to work</p> |

responsibly in modern professional life.

Our modern, well-equipped labs play a major role in ensuring that students are later able to apply their knowledge to their chosen careers. Advanced students plan projects together, work towards a common goal and then present their results in a written report as well as to the class.

Our instruction methods include problem-based approaches and integrated team work. By taking modules in business and management, research planning and scientific writing, students obtain skills necessary for their future success.

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## Course Details

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### Course organisation

In general, the programme includes a research-oriented part that allows students to continuously develop their specialist expertise over three semesters and concludes with the Master's thesis in the fourth semester. In the first three semesters, courses are offered that encompass and significantly expand upon the theoretical foundations of the Bachelor's programme. The ratio of research-oriented work and lectures is 1:1. In this way, the development of scientific topics is made possible, methodological competence can be expanded, and specialised knowledge from current scientific issues can be conveyed. The programme usually concludes with the Master's thesis and the colloquium in the fourth semester.

The following subjects are offered (This is an exemplary list. Not all subjects have to be offered; additions are possible):

#### Advanced basic modules

- Biochemistry
- Biomedical Applications
- Biomedical Engineering in Ophthalmology
- Cellular and Molecular Biophysics I
- Cellular and Molecular Biophysics II
- Medical Physics
- MRI Introduction
- Physics of Medical Imaging
- Project Management

#### Advanced method modules

- Advanced Biomechanics
- "Computermodellierung dynamischer Systeme"
- Integrated Circuit Design
- Medical Image Computing
- "Medizinische Statistik II"
- MRI Advanced
- Nuclear Imaging

#### Specialised modules

- "Chip-basierte Biosensoren"
- Detector Signal Processing
- Engineering of Bioactive Surface
- "Magnetische Biosensorik"
- Nanoparticles for Biomedical Applications

For more information, see <https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc>.

### International elements

- Specialist literature in other languages
- Language training provided
- Training in intercultural skills

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|---|--|
|   | <ul style="list-style-type: none"> <li>Projects with partners in Germany and abroad</li> </ul> |
| <b>Integrated internships</b>                               | Usually more than half of the course of study is lab work.                                     |
| <b>Course-specific, integrated German language courses</b>  | No   |
| <b>Course-specific, integrated English language courses</b> | No   |

## Costs / Funding

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|--|---|
| <b>Tuition fees per semester in EUR</b>            | None  |
| <b>Semester contribution</b>                       | Approx. 330 EUR each semester.  |
| <b>Costs of living</b>                             | In general, living costs, health insurance, room and board generally total 800 EUR per month. International students who have been admitted may be required to submit proof to the German Embassy that they have 8,900 EUR on a blocked account in order to get a visa to study in Germany. |
| <b>Funding opportunities within the university</b> | No  |

## Requirements / Registration

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|--|--|
| <b>Academic admission requirements</b> | BSc, BSc (Hons), BEng, BTech, Dipl-Ing, Dipl-Ing FH, or equivalent in related fields with high academic standing   |
| <b>Language requirements</b>           | <p>Possibilities to prove English language proficiency:</p> <ul style="list-style-type: none"> <li>IELTS 5.5 or higher</li> <li>TOEFL Internet-based Test, minimum 68</li> <li>German Abitur or Fachabitur with a minimum mark of 3 ("befriedigend") in English</li> <li>English is your native language: This is only valid if you have attended at least four years of secondary school in one of the following countries and enclose a school certificate showing your grades for the entire period of enrolment: Australia, Canada, Ireland, New Zealand, United Kingdom, or the United States of America.</li> </ul> <p>Possibilities to prove German language proficiency:</p> <ul style="list-style-type: none"> <li>German is your native language.</li> <li>At least DSH 2, level C1 (Goethe-Institut or TELC)</li> <li>At least Test DaF level 3 (= 4x3, according to the European Framework of Reference)</li> <li>Graduation from a German-language degree programme at (at least) Bachelor's level</li> </ul> |
| <b>Application deadline</b>            | In general, the application deadline starts around the beginning of November of every year for the programme beginning the following March, and around mid-June of every year for the programme beginning the following September. We recommend regularly checking our site for new updates  |

before March/September of each year.

See <https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc/bewerbung> for current application deadlines. We only accept online applications!

**Submit application to**

<https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc/bewerbung>

## Services

**Possibility of finding part-time employment**

Applicants should not count on financing their stay in Jülich or Aachen by working part-time during their studies. However, some students are successful in finding part-time jobs either at the university itself or elsewhere.

**Accommodation**

International students can place their names on a waiting list for the student dormitories after they have arrived in Jülich and have enrolled.

Some students live in student dormitories. Other students generally live in shared apartments in which each student has his or her own room. Living areas, bathrooms and cooking facilities are shared. Furnished rooms start at about 275 EUR per month plus about 75 EUR per month for electricity, water and heating. Most rooms require the first month's rent and a security deposit of one to three months' rent in advance before you can move into the room. If the room is in good condition when you move out, your security deposit will be returned.

**Support for international students and doctoral candidates**

- Support with registration procedures
- Welcome event
- Visa matters

**General services and support for international students and doctoral candidates**

In general, the Student Service Center (SSC) can help:

<https://www.fh-aachen.de/fh-aachen/hochschulstruktur/zv/dez-2/ii2-studierendensekretariat> (please scroll a bit).

More specific help for international students can be found on the website for our Office for International Affairs:

<https://www.fh-aachen.de/en/fh-aachen/university-structure/central-administration/division-ii-student-and-academic-affairs/machine-translated-ii4-akademisches-auslandsamt/translate-to-englisch-international-affairs>

# Contact

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🌐 Course website: <https://www.fh-aachen.de/studium/studiengaenge/medizintechnik/medical-engineering-msc>

📘 <https://de-de.facebook.com/fh.aachen/>

🐦 <https://twitter.com/fhalert?lang=en>

🌐 <https://www.linkedin.com/company/fh-aachen>

📷 <https://www.instagram.com/fh.aachen/?hl=de>

📺 <https://www.youtube.com/c/FHAachenUniversityofAppliedSciences>

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# International Programmes in Germany - Database

[www.daad.de/international-programmes](http://www.daad.de/international-programmes)  
[www.daad.de/sommerkurse](http://www.daad.de/sommerkurse)

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Consortium for International Higher Education Marketing  
[www.gate-germany.de](http://www.gate-germany.de)

## Disclaimer

The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

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