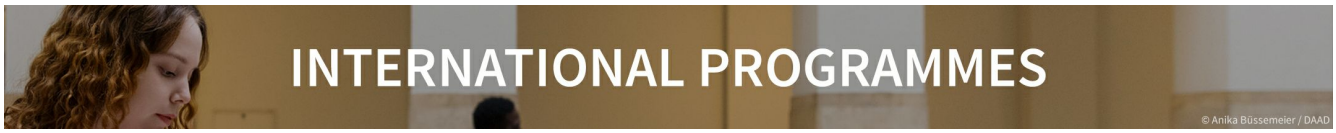
Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree

Master of Science in Mechatronics

FH Aachen University of Applied Sciences • Aachen

Overview

Degree	Master's degree in Mechatronics
Teaching language	• English
Languages	All compulsory modules and most of the elective modules are taught in English. Only some elective modules are given in German. The whole programme can be completed in English. Students can choose to write the Master's thesis in either language.
Full-time / part-time	• full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	30 June for the following winter semester
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	Students acquire widely ranged interdisciplinary knowledge and understanding of the fundamentals and applications of mechatronics. Our instruction methods include problem-based approaches and integrated team work. Our modern, well-equipped labs play a major role in ensuring that students are later able to apply their knowledge to problems arising within the fields of their chosen careers. Advanced students plan projects together, work towards a common goal and then present the results in a written report as well as to the class. Compulsory modules: • Fundamentals of Mechanical /Electrical Engineering • MEMS / Microtechnology • Analogue and Digital Control Technology • Sensors & Actuators • Advanced Mathematics • System Engineering

- Autonomous Mobile Robotic Systems
- Mechatronics System Simulation
- Advanced Motion Control
- Mechatronics Project

The selection of electives includes the following modules:

- Advanced System Control
- FEM Simulation
- Advanced Fabrication Technology
- Automobile Mechatronics Systems
- Actuator Systems
- Advanced CAD-Methods
- Industrial Communication
- Design of Electronic Powertrain Management Systems
- Rapid Control Prototyping
- 3D Image Processing
- Automation of Technical Systems
- Embedded Drive Systems
- Automated Driving
- Vehicle Structures – FEM and Testing
- Critical Thinking and the Scientific Method
- ROS – open source technologies for robotics
- Introduction to Industry 4.0
- General Management of Automotive and Aerospace Suppliers
- Application of control devices
- High Voltage Networks for Electromobility
- Application of Mechatronics Systems

Course Details

Course organisation	In the first semester, all students have to master the basics of electrical engineering (if they have a background in mechanical engineering) or mechanical engineering (if they have a background in electrical engineering), advanced mathematics, an introduction to MEMS and analogue and digital control as basic components of mechatronics systems. In the second and third semesters, students have to study further compulsory modules (e.g. investigating the system behaviour of mechatronic systems and the fundamentals of autonomous and mobile robotic systems as well as an introduction into modern sensors and new type of actuators) and can focus on their specialisation by choosing appropriate elective courses. An integrated project with a duration of two semesters must be carried out by teams of three to six Master's students. In the last semester, students write a Master's thesis on a research and development project, on which they can work either at the university or in industry. » PDF Download
A Diploma supplement will be issued	Yes
International elements	• International guest lecturers
Diverse intercultural background of students	Large share of international students from very different parts of the world
Integrated internships	No obligatory internships
Course-specific, integrated German language courses	No

Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR	None
Semester contribution	Approx. 380 EUR per semester
Costs of living	Approx. 850 EUR per month
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	Bachelor's degree in mechanical engineering, electrical engineering, mechatronics, physics or related fields with high academic standing, or an equivalent university degree GRE General test
Language requirements	Proof of English language ability such as TOEFL (550 paper-based test, 213 computer-based test, 79 Internet-based test) or IELTS 6.0 Proof of German language abilities at level B1 (e.g. Zertifikat Deutsch [B1] or equivalent)
Application deadline	30 June for the following winter semester
Submit application to	https://www.fh-aachen.de/studium/mechatronics-msc/bewerbung/

Services

Possibility of finding part-time employment	Applicants should not count on financing their stay in Aachen by working part-time during their studies. However, many students are successful in finding part-time jobs at one of the universities in Aachen or one of the many R&D-oriented companies in the region.
Accommodation	Many student dormitories are available in Aachen. However, sometimes it may be difficult to find a room there. Private furnished rooms cost from 250 to 500 EUR per month plus approx. 150 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 a good condition when you move out, your security deposit will be returned.

Supervisor-student ratio	Good supervisor to student ratio

Contact

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Mechanical Engineering and Mechatronics

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