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Management and Computer-Aided Mechanical Engineering • RWTH Aachen University •
Aachen .............................................................................................................................................................. 2
Master's degree

Management and Computer-Aided Mechanical Engineering
RWTH Aachen University • Aachen

Overview

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<tr>
<th>Degree</th>
<th>Master of Science (RWTH Aachen University)</th>
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<tr>
<td>Teaching language</td>
<td>English</td>
</tr>
<tr>
<td>Languages</td>
<td>The course is taught 100% in English. One German language course is included and RWTH International Academy strongly encourages as well as supports its students to continue studying German during their studies.</td>
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<tr>
<td>Programme duration</td>
<td>4 semesters</td>
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<tr>
<td>Beginning</td>
<td>Winter semester</td>
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<td>Application deadline</td>
<td>Non-EU applicants can submit their applications until 1 March for the following winter semester. German and EU citizens can submit their applications until 15 July. However, we strongly recommend that German / EU citizens also apply before March.</td>
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<tr>
<td>Tuition fees per semester in EUR</td>
<td>5,500</td>
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<tr>
<td>Additional information on tuition fees</td>
<td>Tuition fees: 5,500 EUR per instalment (22,000 EUR in total, conveniently payable in four instalments) For more information, please see: <a href="https://www.academy.rwth-aachen.de/en/education-formats/msc-degree-programmes/mme-came/fees-expenses">https://www.academy.rwth-aachen.de/en/education-formats/msc-degree-programmes/mme-came/fees-expenses</a></td>
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<tr>
<td>Combined Master's degree / PhD programme</td>
<td>No</td>
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<tr>
<td>Joint degree / double degree programme</td>
<td>Yes</td>
</tr>
<tr>
<td>Description/content</td>
<td>Graduates with the expertise to understand both the art of management and the complexities of engineering processes are increasingly sought after in today's industrial world. The MSc Management and Engineering in Computer-Aided Mechanical Engineering (MME-CAME) caters to this demand as an industrial engineering Master's degree programme that will give you the choice and the flexibility to work in two increasingly interlinked fields of today's professional activity: at</td>
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the interface of technology and economics.
The MSc Management and Engineering in Computer-Aided Mechanical Engineering is an interdisciplinary programme conducted by RWTH Aachen University. The university has one of the best faculties of mechanical engineering worldwide and conducts the programme’s engineering part. In addition, the RWTH School of Business contributes several management modules. The programme’s first year focuses on computer aided methods in mechanical engineering. It provides in-depth knowledge and understanding of finite element methods, numerical methods, simulation, mechanics, and software engineering.
Research directly influences the curriculum, ensuring that students are exposed to the most up-to-date information and practices possible.
During the international management semester, students are trained as globally-oriented managers with solid knowledge of the core management processes and an understanding of the major social and environmental issues that set the scene for business processes in emerging economies. Throughout the programme, students will be challenged to explore feasible innovations that balance business and development prospects.

Course Details

Course organisation

Teaching in the MSc programme takes place in various forms: lectures, exercises, and internships. Lectures are usually taught via presentation of the relevant teaching material. Some professors might also ask questions and encourage interaction with the students. In the corresponding exercises, the teaching material will be actively applied by the students, e.g., via calculation tasks. Internships also constitute a more application-oriented form of teaching and can take place in labs, for example.

To achieve the Master of Science in Management and Engineering in Computer-Aided Mechanical Engineering, students must complete a course programme consisting of engineering and management modules.

- **Engineering modules**
  - Advanced Finite Element Methods
  - Numerical Methods in Mechanical Engineering
  - Advanced Software Engineering
  - Simulation of Discrete Event Systems
  - Reliable Simulation in the Mechanics of Materials and Structures
  - Continuum Mechanics
  - Nonlinear Structural Mechanics
  - Additionally: two compulsory elective courses in the field of Engineering, such as Multibody Dynamics, Welding and Joining Technologies, Manufacturing Technology, Factory Planning, Mechanics of Engineering Materials, Modelling, Model Reduction, and Simulation in Laser Process – Design.

- **Management modules**
  - Entrepreneurial Strategy
  - Innovation Management
  - Finance and Accounting
  - International Project Management
  - Organisational Development & Change
  - Economics for Managers
  - International Business
  - Leadership and High Performance Teams
  - Professional Negotiation Skills and Management of Conflicts

- **German language course**
- **Master’s thesis**

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<td>Integrated study abroad unit(s)</td>
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### Integrated study abroad unit(s)

The programme takes place in Aachen (Germany). The voluntary internship or Master’s thesis can be completed in other countries.

### Course-specific, integrated German language courses

No

### Course-specific, integrated English language courses

No

### The course of study can be taken entirely online

No

### Digital learning and teaching modules

- Virtual classrooms

### Description of e-learning elements

Basic knowledge in business administration is requested as a requirement for admission. Students with no previous knowledge in management have to participate in an online preparatory course conducted by the School of Business and Economics at RWTH Aachen University prior to the beginning of the course of study (July to September).

Furthermore, all course materials are shared on the Moodle online learning platform.

### Participation in the e-learning course elements is compulsory

No

### Can ECTS points be acquired by taking the online programmes?

Yes

### Can the e-learning elements be taken without signing up for the course of study?

No

### Costs / Funding

#### Tuition fees per semester in EUR

5,500

#### Additional information on tuition fees

Tuition fees: 5,500 EUR per instalment (22,000 EUR in total, conveniently payable in four instalments)

For more information, please see: https://www.academy.rwth-aachen.de/en/education-formats/msc-degree-programmes/mme-came/fees-expenses

#### Semester contribution

All students at RWTH Aachen University are subject to the current semester fee of approx. 280 EUR per semester. It includes, among other benefits, a “semester ticket” covering public transport in the federal state of North Rhine-Westphalia in Germany as well as the region of South Limburg in the Netherlands.

#### Costs of living

The average cost of living and studying, including food, accommodation, personal and social expenses, and study-related costs is estimated to be a minimum of 800-900 EUR per month.
**Requirements / Registration**

**Funding opportunities within the university**

Yes

**Description of the above-mentioned funding opportunities within the university**

A limited number of scholarships from various organisations are available to help students finance their studies. Please see the following website for a list of exchange programmes, scholarships, and grants as well as specific application requirements and conditions. Alternatively, students can contact the International Office directly for advice and assistance. http://www.rwth-aachen.de/scholarships

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**Academic Admission Requirements**

- Bachelor of Engineering or Bachelor of Science in mechanical engineering or a related discipline, such as automotive, aerospace or energy engineering, manufacturing, structural, industrial, or production engineering, awarded by an internationally recognised university-level institution
- Fundamental knowledge in the following subjects: mechanics, material science, thermodynamics, machine design, informatics, mathematics, physics, fluid mechanics, automatic control, finite elements, modelling, theory of vibrations, manufacturing engineering, CAD
- Basic knowledge in business administration, students with no previous knowledge in management must participate in preparatory online courses conducted by the School of Business and Economics at RWTH Aachen University prior to the beginning of the course (July-September).
- In addition, students should have gained at least one year of relevant work experience during or after their Bachelor’s degree programmes by the time of enrolment (or six months of work experience by the time of application).
- The GRE must be presented as an application document. The minimum requirements are as follows: verbal reasoning 145 points, quantitative reasoning 160 points, analytical writing 3 points. (Applicants from the EU, EWG, and "Bildungsinländer" are exempt!)

**Language requirements**

If you want to attend this English-taught Master's degree programme, you must be fluent in English (oral and written) in order to understand lectures, textbooks, and manuals in English and to participate in lab projects, industrial internships and examinations.

One of the following certificates must be submitted:

- TOEFL Internet-based: minimum of 90 points/paper-based: minimum of 577 points
- IELTS test minimum overall band 5.5 points
- Cambridge Test - Certificate in Advanced English (CAE)
- First Certificate in English (FCE), completed with B
- placement test of RWTH Aachen University’s Language Centre (B2 - only available for students already enrolled at the RWTH Aachen University)

Applicants who have graduated with a Bachelor’s degree in the USA, UK, Canada (English-speaking parts), Ireland, New Zealand or Australia do not need to submit English language certificates.

Certification of German language proficiency is not necessary in order to apply for this English-taught Master’s degree programme. Admitted students will attend an obligatory German language course during their studies.

**Application deadline**

Non-EU applicants can submit their applications until 1 March for the following winter semester. German and EU citizens can submit their applications until 15 July. However, we strongly recommend that German / EU citizens also apply before March.

**Submit application to**

Please use the online application portal and submit your electronic application at: https://online.rwth-aachen.de/RWTHonline/ee/ui/ca2/app/desktop/#/login/ee/ui/ca2/app/desktop/##
## Services

### Possibility of finding part-time employment

Generally, students enrolled at RWTH Aachen University have the opportunity to find a job on campus. This also allows students to become more familiar with the university institutes and to take part in projects related to their field of study.

The maximum working limit for off-campus work is 120 days per year for non-EU students. International students may work in the private sector during the semester or the semester break for up to three months without having obtained a work permit. Thus, students may work full-time for 120 days or part-time (up to four hours per day) for 240 days. This regulation is also stated on the residence permit. During the semester break, students may work full-time.

### Accommodation

The staff of RWTH International Academy offers support in finding accommodation either in a student residence, in a private apartment, or in a shared flat. RWTH Aachen University has a limited number of dorm rooms and studio apartments. However, there are usually waiting lists for these rooms, and students will probably need to find private accommodation first. RWTH International Academy also has its own boarding house for its students. There are a number of options for finding private accommodation in and around Aachen, and the RWTH International Academy can provide students with information beforehand and upon arrival.

For short-term accommodation, there are many hotels and two youth hostels. Further guidance on student accommodation in Aachen can be found at: https://www.academy.rwth-aachen.de/en/education-formats/msc-degree-programmes/general-information/accommodation

### Career advisory service

Our Career Services offer support for students looking for internships or full-time employment. Among other things, students can make use of CV checks, LinkedIn profile upgrades, assessment centre training, and interview preparation. Furthermore, we organise excursions to companies and factories regularly so that our students gain first-hand insight into the industry. Our graduates have overwhelmingly positive prospects, as on average they:

- find a job within six months after graduation (90%),
- receive a job offer from companies directly after finishing an internship and before submitting their final Master’s theses (21%), and
- stay in Germany to pursue their career (70%).

### Specific specialist or non-specialist support for international students and doctoral candidates

- Welcome event
- Buddy programme
- Tutors
- Cultural and linguistic preparation
With 260 institutes in nine faculties, RWTH Aachen University is one of Europe’s leading institutions for science and research. Currently, more than 44,500 students are enrolled in 144 academic programmes. More than 8,500 of them are international students hailing from 130 different countries. The scientific education students receive at RWTH Aachen University is firmly rooted in real-world application. As a result, our graduates are highly sought after by businesses to work as trainees and fill executive positions. National and international rankings show that our graduates have a high aptitude for managing complex tasks, constructively solving problems in teams, and taking on leadership responsibilities. Thus, it should come as no surprise that one in five board members of German corporations is an alumnus of RWTH Aachen University.

Work conducted in the research centres at RWTH Aachen University is strongly oriented towards the current needs of industry, commerce,
and the professions. This has resulted in numerous innovations, patents, and licences. The individual competence centres at RWTH Aachen University collaborate effectively across departments and faculties in interdisciplinary groups and forums, while still maintaining a strong focus on their own department specialisation. For instance, the computer science and biology departments – and even the social sciences – all have a clear connection to the school’s engineering focus. This has been a crucial factor in motivating multinational corporations such as Philips, Microsoft, and Ford to locate their research institutions in the Aachen region.
Excellence in teaching and research constitutes the basis from which RWTH Aachen University works with other leading institutions and technical universities around the world.

University Location

As Germany’s westernmost city, Aachen is located on the borders of Belgium and the Netherlands. Its population is about 260,000. Aachen’s historic centre around the distinctive cathedral (UNESCO World Heritage Site) is characterised by a student lifestyle. At the city’s doorstep, the hilly Eifel landscape with its rivers, lakes, and forests offers a picturesque countryside for outdoor recreation. Aachen benefits from its central location in the heart of Europe!

Contact

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