



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Smart Production Engineering (SPE)

RWTH Aachen University • Aachen



Overview

Degree	Master of Science (RWTH Aachen University)
Teaching language	<ul style="list-style-type: none">English
Languages	Courses are taught entirely in English.
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	<p>Non-EU applicants (applicants who have citizenship of a country outside EU/EEA): 2 December to 1 March</p> <p>EU applicants (applicants who have citizenship of an EU/EEA country, are currently enrolled at RWTH Aachen, or hold a German university degree): 2 December to 15 July</p> <p>Apply by 15 January (non-EU) / 15 April (EU) to benefit from a 10% early bird discount on the tuition fees!</p>
Tuition fees per semester in EUR	6,000 EUR
Additional information on tuition fees	24,000 EUR in total for four semesters
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	Production technology is changing. Digitalisation has had a major impact on the world of work and production over the past ten years, and its influence continues to grow significantly. As part of

"Industry 4.0", production technology is becoming increasingly networked and more agile. New manufacturing processes are emerging, and entire industries must adapt their production towards global trends in productivity, flexibility and sustainability. The MSc Smart Production Engineering (MSc SPE) responds to these developments with its interdisciplinary curriculum and qualifies you to move into advanced positions at the interface of mechanical engineering, electrical engineering and computer science.

Your studies – your choice: choose a study track

To equip you with the specialisation you need for your individual career path, we offer three exclusive study tracks in the MSc SPE that represent the latest in production engineering. Each study track stands on its own, leading to a tailored education that gives you a very individual profile and sets you apart from the crowd.

Additive Manufacturing

Choosing this study track, you will:

- focus on generative manufacturing processes
- analyse process chains for additive manufactured components
- learn about advanced materials and manufacturing technologies such as selective laser melting

Smart Factory

Choosing this study, track you will:

- navigate "Industry 4.0" driven production and control production processes with 5G technology
- get to know agile production and progressive automation
- learn about model-based systems engineering

Electric Mobility Production

Choosing this study track, you will:

- design electrical machines for production processes and learn about vehicle component production
- innovate mobility engineering towards a green future
- improve sustainable energy storage systems and optimise value chains

Course Details

Course organisation

The MSc SPE consists of:

- non-track-specific engineering compulsories
- track-specific compulsories
- track-specific elective courses
- an integrated mobility window to complete an industrial internship or for further specialisation through in-depth elective courses
- language courses
- the Master's thesis, which can be written internally with an institute or externally with a company

Get a detailed overview of the programme structure on our [MSc SPE website](#).

International elements

- Integrated study abroad unit(s)

Integrated study abroad unit(s)	The programme takes place in Aachen (Germany). The study-integrated elective industrial internship and/or the Master's thesis can be completed in other countries.
Integrated internships	Choose between either an industrial internship for practical experience or further specialisation through in-depth elective courses from your chosen study track.
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	Yes

Costs / Funding

Tuition fees per semester in EUR	6,000 EUR
Additional information on tuition fees	24,000 EUR in total for four semesters
Semester contribution	The RWTH Aachen University's semester fee of approx. 300 EUR is a student body and social contribution fee that every student must pay each semester in order to stay enrolled as an active student. 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, amounts to 900 to 1,000 EUR per month.
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	<p>Women in Engineering Scholarship: This scholarship was created to enable for more qualified female engineering students to pursue a Master's degree programme. The scholarship can grant admitted students a reduction of up to 25% of the tuition fees.</p> <p>High Potential Student Grant: This scholarship was created to enable highly qualified students to complete their Master's degree programme. The scholarship can grant admitted students a reduction of up to 25% of the tuition fees.</p> <p>Outstanding Performance Award: This scholarship honours talented students who have successfully completed one of our Master's qualification programmes in engineering. Their remarkable performance will be rewarded with a reduction of up to 50 % of the tuition fees.</p>

Requirements / Registration

Academic admission requirements	<p>Please see our website for detailed information on the admission requirements for the MSc SPE.</p> <ul style="list-style-type: none"> • Bachelor of Engineering, Bachelor of Technology or Bachelor of Science in mechanical
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- engineering or a related discipline
- Relevant work experience of six months by the time of application
- GRE General Test (Verbal Reasoning: 145 points | Quantitative Reasoning: 160 points | Analytical Writing: 3 points) **or** proof of completion of [German Engineering College](#)
- Fundamental knowledge in engineering

Language requirements

If you would like to attend an English-taught Master's degree programme, you must be fluent in English (oral and written) in order to understand lectures, textbooks and manuals 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
- 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 RWTH Aachen University)

All applicants who have a school leaving qualification or first degree in English that was issued by an institution in the United Kingdom, Ireland, Australia, New Zealand, Canada, or the US are exempt from the English language certificate requirement. Please note that having German citizenship or citizenship of an English-speaking country, even those listed above, does not in and of itself exempt you from the respective language certificate requirement.

No German language skills are required for admission and enrolment. However, you will have the chance to take German language courses as part of your curriculum at RWTH Aachen University Language Center.

Application deadline

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2 December to 1 March

EU applicants (applicants who have citizenship of an EU/EEA country, are currently enrolled at RWTH Aachen, or hold a German university degree):
2 December to 15 July

Apply by 15 January (non-EU) / 15 April (EU) to benefit from a 10% early bird discount on the tuition fees!

Submit application to

Please use [the official online application portal of RWTH Aachen University](#) and submit your electronic application.

Services

Possibility of finding part-time employment

Students enrolled at RWTH Aachen University have the opportunity to find a job on campus and work for up to 19 hours per week. This also allows students to become more familiar with the university institutes and take part in projects related to their field of study. The maximum working limit for off-campus work is 120 full days / 240 half days per year for non-EU students.

Accommodation

Aachen is a vibrant university city with several hundred new students arriving each semester. The housing market is quite tough as a result, especially during the months of March/April and September/October. Finding suitable and affordable accommodation can be time consuming and challenging.

Therefore, we as RWTH International Academy offer our own accommodation in two apartment buildings in the city centre to students of our Master's degree programmes. Benefit from exclusive

prices and in-house services, whether you only need short-term accommodation before moving into your own apartment, or you are looking for a new home for the duration of your studies. Visit our [housing website](#) for more information.

Career advisory service

Studying with RWTH International Academy involves much more than just a degree. With us, you get an all-round career package: during your studies, we are there to advise you so that you can ideally prepare for the start of your career. Our goal is to provide you with the necessary hard and soft skills for the job market. We will facilitate your networking directly with companies and/or the university.

Benefits from our Career Services Expertise

- Career counselling
- Online Career Portal
- Application tips
- Company Meet & Greet
- E-Coaching
- Recruiting Events

With our Career Service, we want to lay the foundation for your career success. We support you with valuable tips, advice and personal coaching from the preparation of your application documents to networking with companies for internships, theses and career entry.

Support for international students and doctoral candidates

- Welcome event
- Specialist counselling
- Cultural and linguistic preparation
- Visa matters
- Help with finding accommodation

General services and support for international students and doctoral candidates

We look forward to welcoming students of all nationalities! For students from [China](#), [India](#) and [Latin America](#), we provide exclusive access, special support and individual consultation through our Academy Offices on site.



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Vinayak Pattanshetti MSc

Pursuing this programme has provided me with a great start to my career. I now have a very interesting position in the automotive industry.



MSc Smart Production Engineering

In a globalised world, networking is a tool. Build your own toolkit for success – study Smart Production Engineering at RWTH Aachen University.

The programme offers excellent teaching and research in three specialisation areas: Smart Factory, Additive Manufacturing and Electric Mobility Production.

» more:

<https://www.youtube.com/watch?v=oSuGkptHylg&t=5s>

RWTH Aachen University



RWTH Aachen University

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With 260 institutes, nine faculties and three Clusters of Excellence, RWTH Aachen University is one of Europe's leading institutions for science and research. Currently, more than 47,000 students are enrolled in 170 courses of study. Of these students, more than 13,000 are international students. RWTH Aachen is well-known for its state-of-the-art education that tackles some of the world's most pressing global challenges. Our graduates are highly sought after by businesses and industry as trainees and for executive positions.

As the official academy for education of RWTH Aachen University, RWTH International Academy is tasked with promoting and developing the integration of professional and academic education. Our goal is to make knowledge accessible to international participants through application-oriented educational formats and programmes, thus making a lasting contribution to lifelong learning.



University location

The [student city of Aachen](#) is a vibrant and historic place located at the border triangle of Germany, Belgium and the Netherlands. Aachen was a favoured residence of Charlemagne. After the departure of the Romans from this region, Charlemagne finally managed to forge the lion's share of Europe into something that resembled an administrative unity, with Aachen as the beating heart of the empire. The "Rathaus" (city hall) and "Dom" (cathedral) bear witness to this earliest Carolingian building history. During your time in Aachen, you will have the opportunity to discover the city, its history and its most important sights. Moreover, you will experience student life at one of Europe's leading technical universities and become part of the international student community. There is no better place to encounter European culture while challenging yourself in our programmes.


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Disclaimer

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