



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Physics

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 and summer semester
Application deadline	<p>Non-EU applicants: 1 March for the following winter semester and 1 September for the following summer semester</p> <p>EU applicants: 15 July for the following winter semester and 15 January for the following summer semester</p> <p>Apply here.</p>
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>The worldwide renowned department of Physics of RWTH Aachen University, comprising of eleven institutes, offers an international Master's programme in physics held in English.</p> <p>The programme provides the following:</p> <ul style="list-style-type: none">a rich variety of basic and specialised Master's coursesparticipation in top-quality research at one of the top technical universities in Germanythe opportunity to flexibly choose a desired course of study, either in the research of particle and astroparticle physics or condensed matter physics with an experimental or a theoretical focus <p>RWTH Aachen University is a world renowned institution in the international community of particle physicists, both in theoretical and experimental fields. Our institutes are involved in the</p>

CMS experiment at the Large Hadron Collider at CERN in Geneva, at which the last sought-after elementary particle of the standard model was discovered, the Higgs-Boson. Questions from astroparticle physics and cosmology are also answered through involvement in the AMS experiment on the International Space Station.

Research focuses in experimental solid-state physics are placed on quantum systems and the development of new materials. Here, we particularly profit from the **collaboration with research groups** at the nearby Forschungszentrum Jülich as part of the Jülich Aachen Research Alliance or JARA. Topics in the theory of condensed matter range from the study of electron systems to the research on quantum information.

The research groups in the Department of Physics have **strong international networks**. For this reason, the international experience of our graduates is very important to us. We happily support stays abroad. However, work with international research groups during Master's thesis also offers diverse opportunities for international experiences.

As a technical university, RWTH Aachen University offers many possibilities to get to know **interdisciplinary topics in engineering**. This is illustrated in the Master's specialisation field nanoelectronics, which is offered together with the Faculty of Electrical Engineering. The Fraunhofer Institute for Laser Technology or the Helmholtz Institute for Biomedical Technology are also collaborators.

Overall, the MSc Physics programme in Aachen offers graduates a great deal which prepares them outstandingly for later professional challenges in basic research or in industry.

Please find more information on our [website](#).

Course Details

Course organisation

The international Master's programme in Physics at RWTH Aachen University is an **English-taught two-year programme**. In the first year, students join lectures, seminars and lab courses. In the second year, students can do individual research projects.

The international Master's **course structure** is organised along seven different tracks:

- 1) Experimental Particle Physics
- 2) Astroparticle Physics and Cosmology
- 3) Quantum Field Theory and Gauge Theories
- 4) Experimental Condensed Matter Physics
- 5) Condensed Matter Theory
- 6) Nanoelectronics
- 7) Quantum Technology

Each track implies several mandatory courses as well as elective courses. The elective courses can be chosen from various specialisation courses offered by the physics faculty and researchers at the research centre in Jülich as well as elective courses from other related Master's programmes. An overview of these courses is available in the course module catalogue (see picture below).

Subsidiary subjects

Courses from other Master's degree programmes can be selected to specialise in one of the following subsidiary subjects: astronomy and astrophysics, economics, biomedical engineering, biophysics, chemistry, energy technology, computer science, geophysics, crystallography, laser technology, aerospace technology, mathematics, patent system, philosophy, technical acoustics, process technology, electronic materials, physics of materials.

Laboratory courses and research projects

The laboratory courses take place in special laboratories of the Department of Physics, which offer excellent, **up-to-date equipment**. The courses in the first year of study provide the qualification for the research project in the second year. The results of this research project are presented in the Master's thesis.

The research project can be chosen from one of the current research fields of the Department of Physics, the Forschungszentrum Jülich, or of another institute of RWTH Aachen University. Please find an overview of the department's research activities here: <http://goo.gl/zaV0jF>. Collaboration

with the international partners in these research activities is desired.

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	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, including food, accommodation, personal and social expenses, and study-related costs, is estimated to be at least 900 to 1,000 EUR per month.
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	<ul style="list-style-type: none">• Bachelor's degree in physics (or equivalent)• GRE Physics• Applicants for the programme must show their professional qualification by having acquired the following:<ul style="list-style-type: none">◦ at least 17 CP (credit points) in the field of Experimental Physics,◦ at least 18 CP in the field of Theoretical Physics, and◦ at least 9 CP in the module "Advanced Internship". <p>These must be equivalent to the courses in the Bachelor's programme in Physics at RWTH Aachen University. If your submitted documents do not prove sufficient qualification in these fields, your application may be refused or you may be admitted to the Master's degree programme with the condition of having to retake courses from the Bachelor's programme in Physics at RWTH Aachen University.</p>
Language requirements	The English-taught Master's programme in Physics requires proficiency in English (oral and written) in order to understand lectures, textbooks, and manuals. English is also necessary for participation in laboratory projects, industrial internships, and examinations. Proficiency in English must be proven by one of the following certificates: IELTS certificate (score 5.5) or TOEFL score report (minimum Internet-based score of 90) . The TOEFL score report must not be older than two years at the time of enrolment for the Master's degree programme in physics.
Application deadline	Non-EU applicants: 1 March for the following winter semester and 1 September for the following

summer semester

EU applicants: 15 July for the following winter semester and 15 January for the following summer semester

Apply [here](#).

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.

Support for international students and doctoral candidates

- Specialist counselling



MSc Physics at RWTH Aachen University

The international Master's programme in Physics is a two-year programme. The first year consists of lectures, seminars, and lab courses. The second year is dedicated to an individual research project.

» more:
<https://www.youtube.com/watch?v=91NX3fP1X80>

RWTH Aachen University

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.



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.

Contact

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 <https://www.facebook.com/RWTHAachenUniversity>

 <https://twitter.com/RWTH>

 <https://www.linkedin.com/school/rwth-aachen-university>

 <https://www.instagram.com/rwthaachenuniversity>

 <https://www.youtube.com/user/RWTHAachenUniversity>

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International Programmes in Germany - Database

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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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