



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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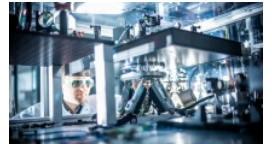
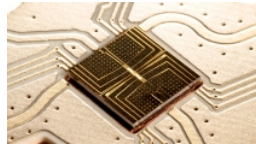
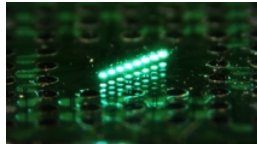
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Master's degree



Quantum Engineering

Leibniz University Hannover • Hannover



Overview

Degree	Master of Science
In cooperation with	The degree programme is offered in cooperation with the Technische Universität Braunschweig.
Teaching language	<ul style="list-style-type: none">English
Languages	English
Full-time / part-time	<ul style="list-style-type: none">full-time
Mode of study	Less than 50% online
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	<p>First-year students from Germany and the EU</p> <ul style="list-style-type: none">1 June – 15 July for the following winter semester1 December – 15 January for the following summer semester <p>First-year students from non-EU countries</p> <ul style="list-style-type: none">15 April – 31 May for the following winter semester15 October – 30 November of the previous year for the following summer semester <p>Students resuming their studies and transfer students from Germany and the EU (application for a higher semester)</p> <ul style="list-style-type: none">1 June – 15 July for the following winter semester1 December – 15 January for the following summer semester <p>Students resuming their studies and transfer students from non-EU countries (application for a higher semester)</p> <ul style="list-style-type: none">15 April – 31 May for the following winter semester15 October – 30 November of the previous year for the following summer semester

Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>Quantum mechanics determines our understanding of physical processes on a microscopic scale. More than a century after groundbreaking work began on quantum mechanics, technical developments based on this phenomenon – such as transistors, lasers and global satellite navigation systems – have become part of our everyday lives. On the verge of the second quantum revolution, the aim is now to pave the way for the application of fundamental quantum physics in industrial fields. In this context, the combination of knowledge and skills from the fields of physics, mathematics, computer science and engineering plays a crucial role. The degree programme closes a gap that previous degree programmes were unable to fill.</p> <p>The programme primarily teaches students knowledge in all four pillars of quantum technologies: communication, simulation, sensors and computation. Once they have completed the programme, students will be able to use their technological expertise in individual specific fields of application to transfer quantum technology solutions from the basic research laboratory to practice.</p> <p>Students may be required to attend courses in Braunschweig in addition to their regular courses at Leibniz Universität Hannover and a hybrid offering.</p>

Course Details

Course organisation	
A Diploma supplement will be issued	Yes
International elements	<ul style="list-style-type: none"> • Specialist literature in other languages • International comparisons and thematic reference to the international context
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Online learning

Pace of course	Instructor-led (Specific due dates for lectures/assignments/exams)
Phase(s) of attendance in Germany (applies to the entire programme)	Yes, compulsory

Types of online learning elements

- Online study material provided by institution

Costs / Funding

Tuition fees per semester in EUR

None

Semester contribution

Approx. 400 EUR semester fee ("Semesterbeitrag")
The semester fee includes the following:

- Contribution to the "Studentenwerk Hannover" (student services organisation)
- Contribution to the student government (Student Union, AStA)
- Semester ticket
- Contribution to administrative costs for the Federal State of Lower Saxony

<http://go.lu-h.de/study-costs>

Costs of living

Compared with other European countries, the cost of living in Germany is quite reasonable. The prices for food, accommodation, clothing, cultural events, etc. are basically in line with the EU average. You will need around 850 EUR a month to cover your living expenses. The largest expense will be your monthly rent. In Hanover, the rent amounts to between 300 and 500 EUR per month.

Cost of studying at Leibniz University Hannover:
<http://go.lu-h.de/study-costs>

General information on the cost of studying in Germany:
https://www.study-in.de/en/plan-your-stay/money-and-costs/cost-of-living_28220.php

Funding opportunities within the university

Yes

Description of the above-mentioned funding opportunities within the university

Although tuition fees no longer exist in Lower Saxony, costs are indeed incurred at university, such as the semester fee, accommodation and living costs, and costs for learning materials. Here you will find possibilities to help you finance your studies:
www.uni-hannover.de/en/studium/finanzierung-foerderung

Deutschlandstipendium:
go.lu-h.de/deutschlandstipendium

Niedersachsenstipendium:
go.lu-h.de/niedersachsenstipendium

For Water Resources and Environmental Management:
go.lu-h.de/WATENV-funding

Requirements / Registration

Academic admission requirements

The following are suitable previous courses of study for the Master's degree programme in Quantum Engineering: a Bachelor's degree in physics, optical technologies, an engineering science or another previous degree programme with a suitable subject with at least:

- 20 ECTS in mathematics
- 10 ECTS in quantum mechanics
- 5 ECTS in wave optics or 5 ECTS in electrodynamics

Language requirements	<p>Language requirements for international applicants:</p> <ul style="list-style-type: none"> • English C1
Application deadline	<p>First-year students from Germany and the EU</p> <ul style="list-style-type: none"> • 1 June – 15 July for the following winter semester • 1 December – 15 January for the following summer semester <p>First-year students from non-EU countries</p> <ul style="list-style-type: none"> • 15 April – 31 May for the following winter semester • 15 October – 30 November of the previous year for the following summer semester <p>Students resuming their studies and transfer students from Germany and the EU (application for a higher semester)</p> <ul style="list-style-type: none"> • 1 June – 15 July for the following winter semester • 1 December – 15 January for the following summer semester <p>Students resuming their studies and transfer students from non-EU countries (application for a higher semester)</p> <ul style="list-style-type: none"> • 15 April – 31 May for the following winter semester • 15 October – 30 November of the previous year for the following summer semester
Submit application to	<p>Please apply via our application portal (open only during the application period). For more information, please visit our website.</p>

Services

Possibility of finding part-time employment	<p>There are many job opportunities for students on campus (in the different departments, the central administration, etc.) and off campus. About two-thirds of our students work at part-time jobs while pursuing their studies.</p> <p>Internal job postings: https://www.uni-hannover.de/en/universitaet/stellenangebote-arbeit-an-der-uni/jobboerse</p> <p>Student jobs outside of the university: jobbico Uni Hannover</p>
Accommodation	<p>Links on housing in Hanover (including a video about housing in Hanover for international students)</p>
Support for international students and doctoral candidates	<ul style="list-style-type: none"> • Buddy programme

Leibniz University Hannover



Leibniz Universität Hannover, Main Building (Welfenschloss)

Leibniz University Hannover: Shaping the future with knowledge

As one of the nine leading institutes of technology in Germany, Leibniz University Hannover is aware of its responsibility in seeking sustainable, peaceful, and responsible solutions to the key issues of tomorrow. Our expertise for this stems from the broad spectrum of subjects, ranging from engineering and natural sciences to architecture and environmental planning, and from law and economics to social sciences and humanities.

The main building of the university is the Royal Welfenschloss (Palace of the Guelphs) at Welfengarten Park. In 1879, the Higher Vocational School, originally founded in 1831, moved into the palace. Later, it became the Königliche Technische Hochschule (Royal College of Technology). Only 64 pupils attended the vocational school at first, **but now there are almost 30,000 students enrolled in the nine faculties of Leibniz University Hannover and some 3,100 researchers working in more than 180 institutes.**

Our key research areas

Leibniz University Hannover is among the world's leading institutions in its **key research areas: biomedical research and engineering, quantum optics and gravitational physics, production engineering, and interdisciplinary studies of science and academia.** These give us our innovative strength in developing precision measurement methods, optical technologies, novel materials, intelligent implants, and innovations in information technology or in the field of Industry 4.0.

The broad range of subjects at Leibniz University Hannover is entirely compatible with the overall university strategy of raising its profile, in particular in teaching and research, including the establishment and enhancement of research priority areas originating in the humanities and social sciences. Cooperation agreements with national and international partners strengthen our scientific expertise – our most important partner is Hannover Medical School.

By adopting the name of the polymath **Gottfried Wilhelm Leibniz** in 2006, the university committed itself to unity in diversity.



📍 University location

Gottfried Wilhelm Leibniz Universität Hannover is very influential in shaping the image of the state capital of Lower Saxony. Not only structures like the “Welfenschloss”, the university's main building, but especially people contribute to this: approximately 30,000 students are currently enrolled. They have chosen one of the largest universities in Germany that is known for its international excellence in teaching and research. With nine faculties and a comprehensive range of study programmes, Leibniz Universität Hannover virtually covers the entire academic spectrum.

Find us [here](#) on Google Maps.

Contact

Leibniz University Hannover

Zentrale Studienberatung - Student Advisory Services

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🌐 Course website: <https://www.uni-hannover.de/en/studium/studienangebot/info/studiengang/detail/quantum-engineering/>

📘 <https://www.facebook.com/unihannover/>

🐦 <https://twitter.com/unihannover?lang=de>

🌐 <https://www.linkedin.com/school/leibniz-universit-t-hannover-germany/?originalSubdomain=de>

📷 https://www.instagram.com/uni_hannover/

📺 <https://www.youtube.com/c/LeibnizUniversit%C3%A4tHannover>

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International Programmes in Germany - Database

www.daad.de/international-programmes
www.daad.de/sommerkurse

Editor

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German Academic Exchange Service
Section K23 – Information on Studying in Germany
Kennedyallee 50
D-53175 Bonn
www.daad.de

GATE-Germany

Consortium for International Higher Education Marketing
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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