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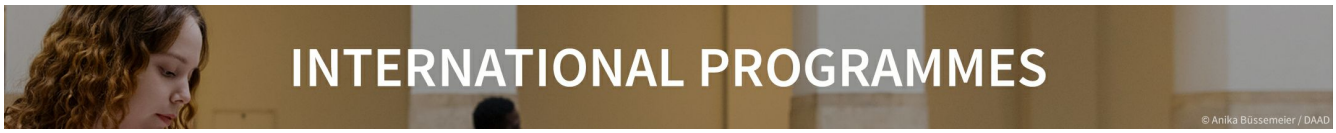
German Academic Exchange Service



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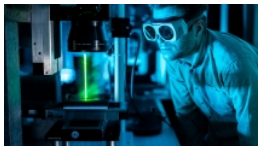
Master's degree

Quantum Technologies (QTEC)

Technische Universität Braunschweig • Braunschweig


Overview

Degree	Master of Science
Course location	Braunschweig
Teaching language	• English
Languages	Courses are held in English (100%).
Full-time / part-time	• full-time
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	All applicants: • For the winter semester: 1 June – 15 July • For the summer semester: 1 December – 15 January
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	**SHAPE THE FUTURE AND BECOME A SPECIALIST IN QUANTUM TECHNOLOGIES** **As a quantum technology engineer, you will be a specialist in a wide range of applications that demand unprecedented levels of precision and performance. Are you ready to initiate and support technological revolutions in society and industry? Enrol in our English-language Master's programme in Quantum Technologies in Electrical and Computer Engineering and shape the future!**

As for the content of the programme, you can expect a significant orientation towards electrical engineering and information technology with a simultaneous focus on various fields in forward-looking quantum technologies. Key components of the new degree programme include elements drawn from physics, computer science and mathematics. Since TU Braunschweig cooperates closely with Leibniz University Hannover for this programme, students will have the chance to complete additional modules at the Faculty of Mathematics and Physics at Leibniz University Hannover.

WHAT IS SPECIAL ABOUT TU BRAUNSCHWEIG?

Local advantages and international name recognition

With this degree, you will be globally sought after. You will be studying under an excellent teaching staff at one of Germany's top nine universities of technology (TU9). Thanks to the large number of major research institutions here, Braunschweig and its surrounding area are "Europe's most research-intensive region by far" (Eurostat). Our closest collaborations are with the following partners:

- National Metrology Institute (Physikalisch-Technische Bundesanstalt, PTB)
- German Aerospace Centre (Deutsches Zentrum für Luft- und Raumfahrt, DLR)
- Various Fraunhofer Institutes.

In addition, we maintain close ties with many companies in the region, Germany and around the world.

Quantum Valley Lower Saxony: A booster for studies and research

As a student in the Quantum Technologies in Electrical and Computer Engineering (QTEC) Master's programme, you will benefit from the strength of the Quantum Valley Lower Saxony network. It was founded by the German Ministry for Research and Culture and the Volkswagen Foundation in cooperation with leading research institutions and companies to pool expertise in quantum technologies for enhanced visibility both locally and internationally.

Course Details

Course organisation

STRUCTURE OF THE QTEC MASTER'S PROGRAMME

Compulsory fundamentals (15 ECTS):

- Advanced Quantum Technology for Engineers
- Introduction to Quantum Information Technology and Quantum Computing
- Ambits of Electromagnetic Field Theory

Electives (50 ECTS):

- Quantum Structure Devices
- Quantum Information Processing and Quantum Computing

Interdisciplinary qualification (25 ECTS):

- Professionalisation
- Industry internship or Master's team project
- Seminar

Final module: Master's thesis and oral examination (30 ECTS)

During your time as a student, you will gain practical experience during a specialised work placement or projects in industry, establishing valuable contacts with leading companies in your field. Alternatively, you can examine a current topic of interdisciplinary research as part of a team project at the Master's level. This will hone your teamwork skills and offer you valuable insights into

	your university's research activities and working environment.
A Diploma supplement will be issued	Yes
Integrated internships	As a QTEC student, you can choose between an industry internship or a Master's team project.
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	In order to enrol at TU Braunschweig or to register back for the coming semester, you have to pay your semester contribution (currently approx. 364 EUR). The semester contribution for example covers your semester ticket for public transport.
Costs of living	By German standards, Braunschweig is not an expensive place to study. Nevertheless, you need a minimum of about 940 EUR per month to be able to study here successfully. More information about financing your studies can be found here.
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	TU Braunschweig has a scholarship programme for excellent students ("Deutschlandstipendium"). The stipend rate is 300 EUR per month. Information on funding can be found here.

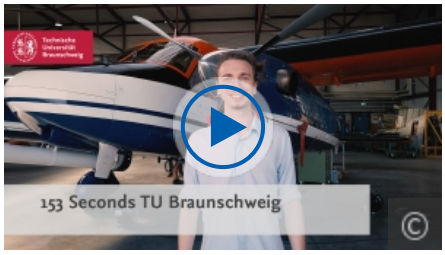
Requirements / Registration

Academic admission requirements	You can apply for this Master's programme if you have completed a Bachelor's degree in a related field, e.g. electrical engineering, information technology or physics. You may also be admitted with a Bachelor's degree in computer science if your studies to date have a suitable focus on the natural sciences and technology.
Language requirements	As the programme is taught entirely in English, language skills at the C1 level are required. German language skills are not necessary. For detailed information on admission requirements, we ask that you read the programme's admission regulations carefully before applying.

Application deadline	All applicants: • For the winter semester: 1 June – 15 July • For the summer semester: 1 December – 15 January
Submit application to	https://www.tu-braunschweig.de/en/application

Services

Possibility of finding part-time employment	During their studies, students usually have opportunities to work as student assistants.
Accommodation	The Student Services OstNiedersachsen ("Studentenwerk") offer several dormitories: https://www.stw-on.de/en/braunschweig/housing/. More information about finding housing is available here:https://www.tu-braunschweig.de/en/freshmen-hub/important-informations/housing-search.
Support for international students and doctoral candidates	• Welcome event • Buddy programme • Accompanying programme • Cultural and linguistic preparation
General services and support for international students and doctoral candidates	TU Braunschweig offers a broad range of support programmes for all administrative, academic, social, and personal questions and challenges that international students may have. Read more about our International Student Support programme



153 seconds TU Braunschweig

TU Braunschweig in a quick run-through: student Jannick Stühff takes you along and shows you what studying at the Carolo-Wilhelmina is all about. Get to know our campus, learn more about life in Braunschweig, and see first-hand what cutting-edge research means to us.

» more: https://www.youtube.com/watch?v=A5jGY9lYDMo

Technische Universität Braunschweig

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275 years of experience in teaching and research

A very warm welcome! We are happy you are interested in studying in Braunschweig. TU Braunschweig is a university with a long tradition of excellent research and teaching. We are part of the TU9 network, the alliance of the leading Universities of Technology in Germany.

TU Braunschweig has about 16,000 students and about 19 percent of them are international students. Six departments and 120 institutes offer 86 degree programmes and excellent facilities for interdisciplinary research work in the fields of engineering, natural sciences, social sciences, and the humanities.

TU Braunschweig is situated at the centre of Europe's most active research and development region. The large number of major companies

and leading national research institutes in the Braunschweig region create an enormous scientific potential. Students benefit greatly from the many active partnerships between university and industry. They can be involved in current research projects early on in their studies and work on study projects with practical relevance. Internships and practical training enable students to gain insights into various companies and to establish initial contacts with potential employers.

https://www.tu-braunschweig.de/en/why-braunschweig

University location

Braunschweig is a lively student city situated in northern Germany. With a population of around 250,000, it is big enough to feel cosmopolitan and yet small enough not to be overwhelming. As an important cultural and political centre dating back to the Middle Ages, Braunschweig retains the imprint of each passing age, from the medieval castle and the Gothic cathedral to modern shopping streets and leisure facilities.

Braunschweig has an international reputation as a city of research. The high density of national and international companies and scientific research institutes located in and around the city make Braunschweig the most active research and development region in all of Europe.

www.braunschweig.de

Contact

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Faculty of Electrical Engineering, Information Technology, Physics

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https://www.facebook.com/tubraunschweig

https://www.linkedin.com/school/tu-braunschweig/

https://www.instagram.com/tu.braunschweig/?hl=en

https://www.youtube.com/channel/UC8X4NAyIUr9Q12hVUOoqyhQ

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