



Photo: Marek Kruszewski/TU Braunschweig

## International

TU Braunschweig is a cosmopolitan research university that actively promotes international exchange. The International House is the central point of contact for all things international at the university. We currently cooperate with 330 partner universities in the EU, the USA, Canada, South America, China, Japan and Singapore. In addition, we are now working to establish strong strategic partnerships with Tongji University (China), the University of Rhode Island (USA), Tampere University (Finland) and the UTC in Compiègne (France).

As part of the Erasmus programme, TU Braunschweig has cooperation agreements with some 170 universities. One third of all our students spend part of their studies outside of Germany. Dual degrees with US, French, Lithuanian, Brazilian, Russian and Chinese universities qualify our graduates for the international job market. Student exchange, research projects and work placements in foreign countries allow them to gain invaluable international experience.

International students are an important part of our academic community: more than 3,300 students from 112 countries are currently studying at TU Braunschweig. Outstanding mentoring programmes and numerous onboarding and support services ensure that international students feel right at home at our university.

Internationality is also a matter of course in research. Our strategic partner universities abroad are therefore in line with TU Braunschweig's core research areas. And last but not least, a considerable number of international scientists teach and conduct research at our university.

## Life on campus

Campus life has a lot to offer. More than 90 student initiatives offer opportunities to make like-minded friends and get involved in technical projects, sports, social activities and university politics. Here, students enrich their studies by combining theory with practical application. The options available cover everything from building racing cars and self-driving model cars (to compete with other German universities) to working at student business consultancies and engineering offices. If you are looking for a **cultural pastime**, you are spoilt for choice at TU Braunschweig: our university orchestra, the TU Choir, a big band and our wind instruments group "akablas" are always vying for the most talented musicians on campus. Alternatively, why not join one of our theatre groups?

Whether you prefer the gym or fitness centre on campus, beach volleyball courts, sauna or even sailing or parachuting, with more than 200 classes per week in 100 sports, our **Sports Centre** offers the broadest sports programme in the region. As part of the **Sandkasten project**, students actively shape our campus and campus life according to their own ideas, from creating a students' garden to organising outdoor film screenings or the Organic Beats Festival. The **Green Office** is all about sustainability. Here, students and staff members can share their ideas on how to make TU Braunschweig more sustainable and how to promote this topic both in the curriculum and in research.

The Haus der Wissenschaft (House of Science) invites both laymen and experts to think and speak about their perspectives on science, technology and culture.

TU Braunschweig stands for **equal opportunities** for all members of our academic community: we pay special attention to promoting a good work/study-life balance, gender equality and diversity. Two university childcare centres, our Equal Opportunities Office, the Dual-Career Couples Network and the Diversity Coordination Office all support these efforts.

Under the slogan "**Check-in**", we offer secondary school students the opportunity to get a taste of university life, with more than 40 options in various subject areas from which to choose.

Our annual night-time campus festival, **TU-Night**, regularly attracts some 20,000 visitors who come to experience science, hands on. More than 1,500 young people attend our children's university. And with more than 1,000 public events each year, we are the scientific and cultural focal point of the region.

We receive special recognition from various foundations, companies and private individuals who support our students, for example by offering a Deutschlandstipendium (German Scholarship) or financing awards for junior scientists. The **Carolo-Wilhelmina Foundation**, the only one of its kind in Lower Saxony, works to improve the teaching and studying conditions here and offers help to those of our students who find themselves in difficult situations.



Photo: Marek Kruszewski/TU Braunschweig

## TU figures

**Range of degree programmes:** 84 degree programmes, including:  
▪ 33 bachelor's degree and Staatsexamen programmes (undergraduate)  
▪ 39 master's degree programmes at 6 faculties

**Student body:** 18,566 enrolled in the 2020/2021 winter semester, including:  
▪ 7,631 women  
▪ 3,340 international students from 112 countries  
▪ 3,613 first-term under- and post-graduate students, including 1,787 first semester students  
▪ 10,842 engineering students  
▪ 3,607 natural sciences students  
▪ 4,117 humanities, education and social studies students

**Graduates:** 3,089 (1,316 women)  
**Doctorates:** 303 (86 women)

**Staff:** 3,768 full-time university employees (1,565 women) incl. externally funded employees:  
▪ 241 professors (58 women)  
▪ 2,045 scientific staff members (648 women)  
▪ 1,383 technical and administrative employees (820 women)  
▪ 99 trainees (39 women)  
▪ plus 401 (paid) lecturers (172 women)  
▪ plus 2,019 student and research assistants (809 women)

**Finances:** overall budget of €381.7 million, including:  
▪ €115.9 million in external funding

## History

**1745:** The Collegium Carolinum is established, a new type of educational institution between secondary school and university, where mathematical/technical subjects are taught alongside humanities and fine arts.

**1878:** The polytechnical school is renamed Herzöglische Technische Hochschule Carolo-Wilhelmina (TH).

**1900:** The TH is accredited to award doctorates.

**1933:** Political alignment of the institution: there are both victims and perpetrators at TH Braunschweig. Their history was reassessed during the 2000s.

**1945:** Despite 70% of the institution being destroyed, the TH resumes lectures.

**1968:** After the establishment of a faculty for humanities and social sciences, the TH is renamed Technische Universität or TU (University of Technology).

**2003:** Establishment of the Centre for Humanities and Social Sciences at the Northern campus.

Braunschweig mathematician Carl Friedrich Gauß (1777-1855) spent three years studying at the Collegium Carolinum.  
Photo: Kristina Rottig/TU Braunschweig

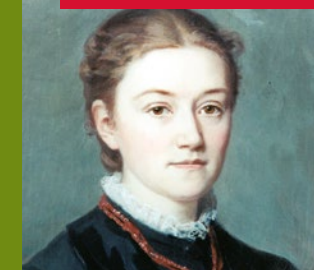


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# A Brief Portrait

## Technische Universität Braunschweig



In 1932, Agnes Pockels (1862-1935) was the first woman to receive an honorary doctorate from TH Braunschweig. Self-taught with no formal training, she discovered important fundamental principles in the fields of surface and interfacial tension. Photo: Kristina Rottig/TU Braunschweig

**2007:** Braunschweig is named the "City of Science".

**2007:** Foundation of the Automotive Research Centre Niedersachsen (NFF).

**2009:** Foundation of the Aeronautics Research Centre Niedersachsen (NFL).

**2009:** Creation of the Braunschweig Integrated Centre of Systems Biology (BRICS).

**2012:** Creation of the Center of Pharmaceutical Engineering (PVZ).

**2016:** Completion of the Open Hybrid LabFactory research campus.

**2016:** Inauguration of the Masch.Bau student building.

**2017:** Record high of 20,116 students enrolled.

**2018:** Successful Excellence Strategy application: funding awarded for Excellence Clusters in aerospace technology and metrology.

**2019:** Relocation to the new LENA research centre for nanometrology.

**2020:** TU Braunschweig celebrates its 275th anniversary.

2020: Start of construction of a new student house and the Centre for Fire Research (ZeBra).



Photo: Marek Kruszewski/TU Braunschweig

## Carolo-Wilhelmina

Technische Universität Braunschweig is the academic focal point of Braunschweig, the “City of Science”, rich in tradition and located in the heart of one of Europe’s most active research regions.

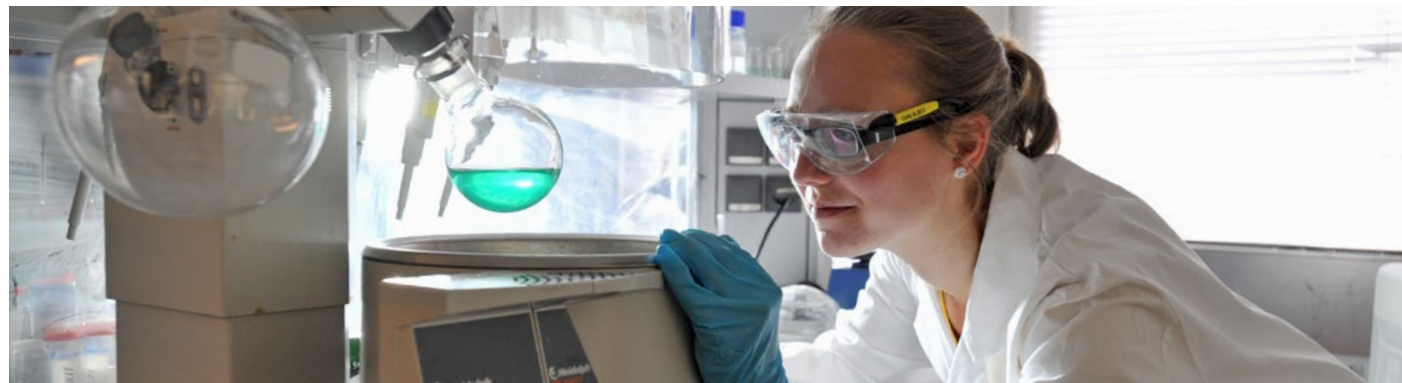
With 18,500 students and a staff of 3,800, we are the largest Institute of Technology in Northern Germany. Our campus is the ideal size for a university: our first-class teaching and research activities have access to state-of-the-art facilities while offering an intimate atmosphere at the same time. The Central Campus is located on the banks of the Oker River, within walking distance from Braunschweig’s city centre.

Our core disciplines include a comprehensive Engineering branch and a strong Natural Sciences branch, closely linked to Business Science, Social Sciences, Humanities and Educational Sciences. Our strategic research fields are Mobility, Infection and Therapeutics, Metrology, and Future City.

The name Carolo-Wilhelmina originates from the founding fathers of Technische Universität Braunschweig, Dukes Carl and Wilhelm of Braunschweig-Lüneburg. In 1745, Duke Carl founded the Collegium Carolinum, making him the first in Germany to lay the foundations for a technical university. Its early students (back then, only young men were admitted) included the mathematician Carl Friedrich Gauß.

Nec aspera terrent (“Difficult tasks and adversities do not frighten us.”): the motto of the founders of our university still serves as our maxim today.

**Braunschweig is among those cities in Germany that attract especially large numbers of young people. With its 250,000 residents, the city boasts a strong research and economic landscape, good job prospects and a vibrant cultural scene. But it is also Braunschweig’s rich history, its many sports options and the large old parks along the Oker River that make the city so attractive.**



Experts in pharmacy, process engineering and microtechnology collaborate at the Center of Pharmaceutical Engineering to develop new technologies for manufacturing low-cost personalised medicines. Photo: Frank Bierstedt/TU Braunschweig

## Studying and teaching

Study at the cutting edge of science while enjoying innovative teaching: our degree programmes impart broad and in-depth fundamentals at bachelor’s level and offer an extensive range of specialisation options for master’s students. Already at an early stage, our students have the chance to participate in avant-garde research projects and put their scientific work methods into practice.

Our interdisciplinary degree programmes range from Environmental Science to Biochemical, Chemical and Pharmaceutical Engineering, and from Sustainable Energy Technology to Transport Engineering. Still, anyone looking to study a classic subject from the fields of engineering, natural sciences or humanities has also come to the right place here. And our English-language programmes, Data Science, Computational Sciences in Engineering, and Sustainable Engineering of Products and Processes, attract students from all over the world. Many of our degree programmes are developed and offered in conjunction with neighbouring research institutions, such as the Metrology and Analytics master’s programme that is the only one of its kind in Germany and is offered in cooperation with the world-renowned German metrology institute PTB.

TU Braunschweig is a member of TU9, an association of the top nine German universities of technology.

All our master’s programmes equip students with the skills they need to succeed in executive positions and build international careers in research, development and management. Our graduates are working deftly and responsibly on finding solutions to societal challenges.

A single point of contact for all your informational needs: between enrolment and course guidance, social counselling and international affairs, the Study Service Centre provides all the services and advice you may need, both before and during your studies.

## Research

Our research is grouped into four core research areas, as well as interdisciplinary and trans-university research centres with cutting-edge infrastructure.

We research **Mobility** – covering everything from automotive to aerospace and rail technologies. Our goal is to lower emissions for everyone’s transport by developing aircraft and vehicles that have less of an impact on the environment, including during the manufacturing phase.

One of Europe’s key research airports is located in Braunschweig. And right in the middle of it, next door to the German Aerospace Center (DLR), is a TU Braunschweig campus. The **Excellence Cluster SE<sup>2</sup>A (Sustainable and Energy-Efficient Aviation)** has set itself the ambitious goal of paving the way for tomorrow’s sustainable and environmentally compatible aircraft and air transport systems. The Aeronautics Research Centre Niedersachsen (NFL) possesses the ideal infrastructure for this. All mobility research relating to road and rail, such as automated and interconnected transport systems, is grouped together at the Automotive Research Centre Niedersachsen (NFF). The Open Hybrid LabFactory (OHLF) focuses on ultralightweight materials that feature “smart” functions, and the Battery LabFactory Braunschweig (BLB) is dedicated to engineering high-capacity batteries to make e-mobility more sustainable.



The full-vehicle simulator at the NFF automotive centre enables research not only on vehicle control systems, but also on new driver assistance features and self-driving functionalities. Photo: Christian Bierwagen/TU Braunschweig

The **QuantumFrontiers Excellence Cluster** specialises in measuring the smallest dimensions. Researchers from TU Braunschweig and Leibniz University Hannover are currently working on developing a quantum computer and are investigating new approaches to nanometrology. Materials and components at the nanoscale – just millionths of millimetres small – have become indispensable to many procedures. Sounding out the limits of what can be measured is an important aspect of this. TU Braunschweig’s LENA research centre, in conjunction with the PTB, is dedicated to this task as part of its research focus on **Metrology**.

Two research centres collaborate on the **Infection and Therapeutics** core research area. BRICS uses a combination of natural sciences, engineering and information technology to produce high-powered systems biology, for example to research strategies for combatting infectious microorganisms. The Center of Pharmaceutical Engineering (PVZ) focuses on producing innovative active agents and processing them into customised yet affordable medications.

In our **Future City** core research area, we investigate how cities can continue to meet the needs of their residents, despite of the complex challenges posed by our globalised world, the perpetuation of urbanisation, dwindling resources and climate change. We strive to understand every aspect of cities: historical, literary, philosophical, social and ecological.

## An active research region

With the highest level of investments in research and development, Braunschweig is the centre of Germany’s most active research region, according to European Union statistics. This is excellent for Braunschweig, and excellent for our students. Numerous local research institutions partner with TU Braunschweig and offer students the chance to participate in their projects: multiple Helmholtz Centres, Fraunhofer Institutes and Leibniz Institutes, federal research institutes, museums and major companies. There, students can gain hands-on experience in bio- and environmental technology, automotive or aerospace engineering, computer science and communication technology, or metrology and microelectronics, but also in humanities and educational sciences. Another factor in Braunschweig’s favour is its business-friendly attitude, as attested by Wirtschaftswoche magazine. This yields attractive job opportunities for our graduates.

## Transfers of knowledge and technology

In the House of Transfer and Cooperation at TU Braunschweig, we pool all our activities relating to the transfer of knowledge and technologies, as well as civic engagement. We facilitate and promote exchange of technologies and insights with industry and society. The Entrepreneurship Hub is a springboard for the young Braunschweig start-up scene and helps new companies to establish themselves.



View into the sample chamber of the X-ray photoelectron spectrometer at LENA, the research centre for nanometrology. Photo: Markus Hörster/TU Braunschweig