

# TUHH

Hamburg University of Technology



# TECHNOLOGY FOR HUMANITY

## MISSION STATEMENT

Hamburg University of Technology is a competitively oriented, family-friendly and socially responsible university with high performance and quality standards that aims for research excellence in basic research and in its areas of expertise. It is an internationally oriented university in the Hamburg metropolitan region and is committed to Humboldt's educational ideal (the unity of research and education). It contributes toward the development of the technical and scientific competence of society by using modern teaching and learning methods to train young engineers and by promoting technology transfer and company startups.

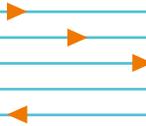


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WELCOME!



Hamburg TU is a compact university of technology with a clear research profile and modern, practice-oriented learning methods. Our aim is to educate creative minds – creative with a specialized profile of their own and a high level of social competence.

We stand for the development of Hamburg as an innovative metropolis. The University makes important contributions by developing new technologies in, say, the areas of energy supply, mobility, logistics and digitization. In this context Hamburg University

of Technology will continue to develop and grow as a state-of-the-art, top-level university with an international appeal.

Hamburg University of Technology stands like hardly any other German university for successful reforms and unconventional approaches and impulses. In 1994 it was the first university in Germany to introduce Bachelor's degrees, and its extensive range of English-language courses attracts students from all over the world. Hamburg University of Technology raises nearly half of its budget in the form of public and private research funding.

We promote top-level research and entrepreneurial spirit. Due to its interdisciplinary structure and its outstanding resources of personnel and equipment Hamburg University of Technology is in a position to offer a modern, research-related and at the same time practice-oriented education: a combination that opens up for graduates excellent opportunities in the labor market irrespective of business-cycle fluctuations.

Hamburg, by the way, is not only at the top of the map of Germany geographically but also, in Europe-wide rankings, one of the regions with the highest dynamics and the best growth opportunities: a vibrant metropolis with a high quality of life.

I hope you have great fun discovering the Hamburg University of Technology and cordially invite you to become a part of our exciting story!

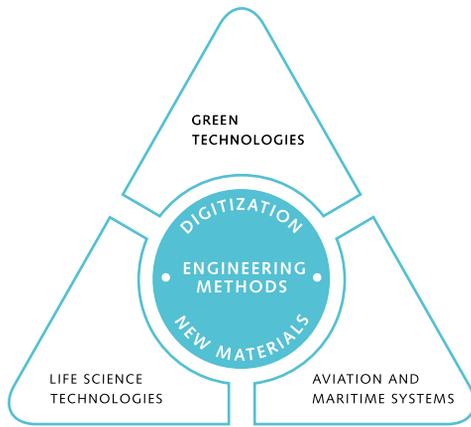
Prof. Dr. Andreas Timm-Giel  
President, Hamburg University of Technology



- 1978 University is founded
- 1980 Research begins
- 1982 Teaching begins
- Around 100 professors
- Around 640 academic employees
- Over 7,600 students
- 25 percent international students
- € 142.8 million total budget expenditure
- € 72.3 million state operating subsidy
- € 45.4 million third-party funding



Hamburg University of Technology is one of the youngest and, at the same time, most successful universities in Germany. Initial plans for a university of technology in Hamburg date back to 1928. It didn't happen for a further fifty years, but in 1978 the Hamburg University of Technology was established with a view to promoting structural change in the region. Its founding principles are unique in Germany. Priority for research, interdisciplinarity, innovation, regionality and internationality are the foundations of its success story. The guiding principle of developing "Technology for Humanity" has always been a focal point of research, teaching and technology transfer. Between 1982 and 2005 a functional and at the same time architecturally interesting ensemble of buildings took shape on the campus site in the south of Hamburg that fits naturally into the park landscape and the surrounding area of the city. Research began in 1980, followed by teaching in 1982. Around 100 professors and 1,200 academic and administrative employees now work at the University. The good ranking results and numerous awards testify to Hamburg University of Technology's success in many areas.



## TU HAMBURG AREAS OF COMPETENCE

- Green Technologies
- Life Science Technologies
- Aviation and Maritime Systems

## RESEARCH CENTERS AT THE TU HAMBURG

- Integrated Biotechnology and Process Engineering
- Climate-Friendly Energy and Environmental Engineering
- Regeneration, Implants and Medical Technology
- Logistics and Mobility
- Maritime Systems
- Aeronautics
- Product-Oriented Materials Development

## RESEARCH



Hamburg University of Technology's guiding principle is to develop Technology for Humanity. Scientists work here on eco-friendly marine propulsion or renewable energy systems, carry out research on quieter aircraft and develop sensor technology for artificial hands. Organizationally, research and teaching are decoupled. Research takes place at interdisciplinary research centers and teaching at the schools of study; there are no traditional faculties. Research expertise at the University is bundled at a Center for Research and Innovation (ZFI) where it is conflated in three areas of competence.

Different disciplines collaborate at the Centers for Research and Innovation, whereas teaching in study programs is subject-based. This structure promotes interdisciplinary research and learning and thereby significantly improves scientific alignment to new areas of research. A wide range of interdisciplinary cooperation, a collaborative research center and many other projects funded by the German Research Foundation (DFG) testify to the success of this novel structure. At Hamburg University of Technology junior researchers are involved at as early a stage as possible in both fundamental and application-oriented research and development projects. To sustainably ease the transition to a career, science- and career-relevant key competences are taught at events held by the Graduate Academy for Technology and Innovation.



The aim of teaching at Hamburg University of Technology is to best prepare engineers for their future career tasks: practically, research- and fundamentally oriented. The study programs benefit from many years of experience with the Bachelor's and Master's system. The first Bachelor's study program in Germany was launched at the TU Hamburg in 1994. Top-quality teaching is ensured by an especially strong supervisory relationship. Intensive programs for the first years of study – from preliminary StartING@TU Hamburg tutorial courses and self-organized study to accompanying subject tutorials – underscore our resolve to teach young technicians and scientists in a modern, efficient, connected manner. The STUDIS Admission and Registration Office is the port of call on all student affairs from enrollment to deregistration. The International Office is the point of contact for the promotion of international mobility in respect of both advice and assistance with studying abroad and looking after international students at the TU Hamburg. The University also lends a helping hand with the transition from university to career, such as the wide-ranging offers of the Career Center. To ensure long-term quality of teaching we subject ourselves to external evaluation and constantly review our own performance, not only in connection with accreditation but above all at our Center for Teaching and Learning.

### BACHELOR'S PROGRAMS

- 15 study programs
- Study qualification: General higher education diploma (Abitur)
- Degree: Bachelor of Science

### MASTER'S PROGRAMS

- 28 study programs
- Study qualifications: General higher education diploma (Abitur) and Bachelor of Science
- Degree: Master of Science

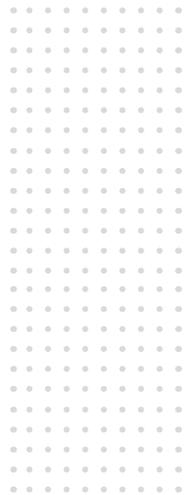
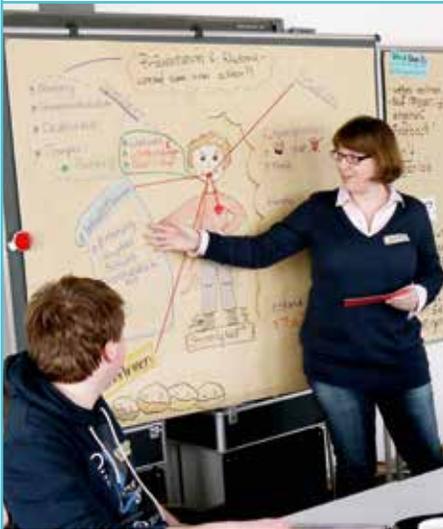
### INNOVATIVE STUDY ORGANIZATION

- New teaching methods in small groups
- Quality improvement and assurance by the Center for Teaching and Learning (ZLL)
- Problem-based Learning (PBL)



## THE ZLL: QUALITY ASSURANCE FOR TEACHING

- Didactic advice and further qualification for teaching staff
- Active Learning / Project-based Learning / Research-oriented Learning
- Methods for special teaching situations
- Interdisciplinary Bachelor's project
- Supported by the Federal Ministry of Education and Research



The ZLL, Hamburg University of Technology's university and subject teaching center, helps teaching staff to design didactically balanced courses from efficient self-study to competence-oriented exams by means of the latest didactic findings and methods. Its twofold structure makes it especially successful. Teaching coordinators collaborate closely with the TU Hamburg's six schools of study, contributing their didactical expertise.

380 members of teaching staff at the University have sought advice from the ZLL and over 100 further didactical qualifications are under way. Beneficiaries include the tutors – trained at the ZLL – who help students to study on their own. The aim is to teach engineering subject matter with a practical orientation and a proximity to research. First-semester students can gain initial experience of product development – from conception to construction of a prototype – in the Interdisciplinary Bachelor's Project. To provide space for practice-oriented teaching the ZLL has already initiated the Student Workshop, the Learning Center and the Studio Learning Room. It also promotes dialog between students and teachers by means of course evaluations.



### STUDENT COUNSELING CENTER

- [studienberatung@TU Hamburg.de](mailto:studienberatung@TU Hamburg.de)

### STUDIS – STUDENT SERVICE

- [studierendenservice@TU Hamburg.de](mailto:studierendenservice@TU Hamburg.de)

### CAREER CENTER

- [career.service@TU Hamburg.de](mailto:career.service@TU Hamburg.de)

### TU & YOU ALUMNI AND FOUNDATION

- [tuandyou@TU Hamburg.de](mailto:tuandyou@TU Hamburg.de)

## STUDY PROGRAMS



### BACHELOR OF SCIENCE

Allgemeine Ingenieurwissenschaften • Civil and Environmental Engineering • Bioprocess Engineering • Computer Science • Data Science • Electrical Engineering • Energy and Environmental Engineering • General Engineering Science • Computational Science and Engineering • Logistics and Mobility • Mechanical Engineering • Mechatronics • Naval Architecture • Technomathematics • Process Engineering

### MASTER OF SCIENCE

Civil Engineering • Bioprocess Engineering • Computer Science • Data Science • Electrical Engineering • Energy and Environmental Engineering • Energy Systems • Aircraft Systems Engineering • Computational Science and Engineering • International Management and Engineering • Logistics, Infrastructure and Mobility • Medical Engineering • Materials Science • Product Development, Materials and Production • Renewable Energy • Naval Architecture and Ocean Engineering • Theoretical Mechanical Engineering • Process Engineering • Water and Environmental Engineering

### INTERNATIONAL MASTER'S PROGRAMS

Chemical and Bioprocess Engineering • Environmental Engineering • Information and Communication Systems • Mechanical Engineering Management • Mechatronics • Microelectronics and Microsystems

### JOINT MASTER'S PROGRAMS

Environmental Studies: Cities and Sustainability • Global Technology and Innovation Management & Entrepreneurship • Ship and Offshore Technology

### MASTER OF BUSINESS ADMINISTRATION MASTER OF ARTS

Technology Management (Northern Institute of Technology Management/NIT)



**THE CAMPUS OFFERS**

- A modern library with access to around 500,000 media
- Attractive park landscape and interesting architecture
- A wide range of events: public lectures, festivities, The TU Hamburg Orchestra, Bigband, Choir and Theater Group
- Around 50 student societies from A as in Amateur Radio via R as in Robots to W as in Water Sports
- An extensive university sports program



The mixture on the TU Hamburg campus is easy to describe: young, creative, open, international and multicultural – an ideal atmosphere for the development of new ideas. The campus offers a wide range of space and scope for an inspirational exchange of ideas. After lunch in the light and airy Mensa cozy cafés invite you to chat with colleagues and fellow-students. By the lake there is always somewhere to take it easy and pass the time of day. The main university building with its learning and communication center is open round the clock, but to ensure that study does not take too heavy a toll on leisure a wide range of leisure activities is on offer in addition to university sport and a 220-square-meter in-house fitness studio. Around 50 student societies from A as in Amateur Radio to W as in Water Sports invite you to look further afield than the subject you are studying. At the TU Hamburg students can join forces to make music, put on plays, keep bees, drive race cars, train a team of soccer-playing robots, experiment and invent, get involved in social work and much more. After all, academic education is also culture and sport, cross-disciplinary content and communication, fun, games and good company. Hamburg University of Technology encourages all these activities because it sees its students as people who will shape and develop our future in a socially responsible way.



### SUCCESSFUL COLLABORATION WITH

- Airbus Deutschland GmbH
- Deutsches Zentrum für Luft- und Raumfahrt (DLR)
- Lufthansa Technik AG
- Helmholtz-Zentrum Geesthacht für Material und Küstenforschung
- Deutsches Elektronen-Synchrotron (DESY)
- Industrielle Biotechnologie Nord e.V. (IBN)
- Universitätsklinikum Hamburg-Eppendorf (UKE)
- Fraunhofer-Gesellschaft

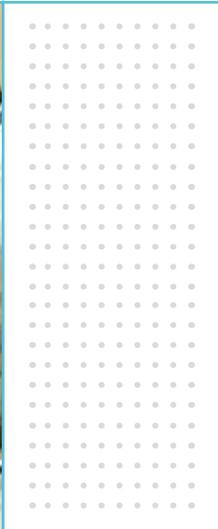


Together you get more done, and to make Hamburg more competitive as a science location the TU Hamburg has numerous cooperation arrangements with business and industry in the Hamburg metropolitan region. Its partners – leading global corporations and small and midrange businesses alike – are the backbone of successful establishment and development of cooperation networks. Aviation is a sector that plays a special role. The University runs a technology center in Finkenwerder jointly with Airbus Deutschland GmbH. Its partners include the German Aerospace Research Center (DLR) and Lufthansa Technik AG. In materials research Hamburg University of Technology joined forces with the Helmholtz-Zentrum Geesthacht to set up the Center for High-Performance Materials. In medical engineering it maintains close ties with many Hamburg hospitals, including the University Hospital Hamburg-Eppendorf (UKE). It is on good terms with the Fraunhofer Society and the German Electron Synchrotron (DESY). As a novel form of science promotion the TU Hamburg has also established an Excellence College that employs junior professors for a six-year term. This is a model approach by which business, science and the state invest equally in promising scientists in order to make innovations faster out of good ideas.



## STARTUP DOCK – STARTUPS AT HAMBURG UNIVERSITIES

- One-on-one advice from startup consultants
- Customized Startup Dock Academy workshops
- Support and funding opportunities
- Networking in the Hamburg startup scene
- Workshop, office and meeting rooms



<https://startupdock.de>  
[www.beyourpilot.de](http://www.beyourpilot.de)



The TU Hamburg Startup Dock has inspired, qualified and backed startups at Hamburg universities since 2013. It was funded as part of the Federal Ministry of Economic Affairs and Technology's EXIST Startup Culture – The Startup University program. The Startup Dock advises and assists students, academics and alumni of Hamburg universities and research institutions on putting their technology-oriented and science-based business ideas into practice. With individual coaching, one-on-one support and teaching and continuing education formats teams that dock receive the kind of assistance they need in the early stage of starting a business. They benefit from the know-how, the experience and the network of Hamburg's university and startup scene. Many students and research assistants first encounter the subject of starting a business at university. Close collaboration with the chairs, the comprehensive range of consulting services and regular events inspire them to think and act entrepreneurially and to strengthen together with the universities the startup culture on the campus and in the city of Hamburg. The Startup Dock is currently supporting a variety of teams. The TU's startup center collaborates closely with Hamburg Innovation (HI) and is part of the beyourpilot startup support facility and of the Startup Port, a joint venture of seven universities in the Hamburg metropolitan region.

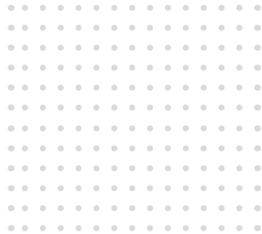


TUTECH stands for active technology and knowledge transfer. A subsidiary of the TU Hamburg and the city of Hamburg organized on a private enterprise basis, TUTECH advises, mediates, initiates and coordinates at the interface between university and enterprise – between research and the market. Ever since it was founded in 1992 as the first university-owned technology transfer company in Germany, TUTECH has been active way beyond the borders of Hamburg and Germany. By connecting entrepreneurial and scientific potential TUTECH aims to create sustainable values for society, science and business given that genuine innovations result from the application of new research findings and inventions. Its sister company HAMBURG INNOVATION and a patent marketing agency active in IP management provide close cooperation with all public universities and numerous research facilities in the Free and Hanseatic City of Hamburg.

[www.tutech.de](http://www.tutech.de)

### TUTECH INNOVATION GMBH

- Technology and knowledge transfer since 1992
- Research management
- Intellectual Property (IP) management
- Startup support provided jointly with the TU Hamburg's Startup Dock
- Competence development and advice





## NETWORKS AND EXCHANGE PROGRAMS

- ERASMUS+ (Europe)
- International study and educational partnerships (ISAP) (USA, Canada)
- European Consortium of Innovative Universities (ECIU) (Europe)
- Independent TU Hamburg partnerships

## INTERNATIONALITY



Markets are growing together and the global educational market is booming, which is why studying abroad opens up opportunities. Engineers with international experience are in greater demand than ever and there are many indications that this will continue to be the case. So Hamburg University of Technology has set itself the target of enabling all interested students to spend a study period at partner universities abroad. It supports them actively and by means of third-party scholarships, The TU has partner universities in Europe, Asia and the Americas. Conversely, its wide range of international study programs and its excellent reputation attract many international students to the Hamburg University of Technology either on a student exchange or to study full-time. Around one TU student in five comes from abroad. English-language lectures that German students also attend lead to long-term contacts. Research benefits from a flourishing international exchange. The TU Hamburg welcomes Humboldt scholars every year. Hospitality and an international study program are for us a matter of course – because education is universal and knows no borders.

## NIT – THE BUSINESS SCHOOL ON THE CAMPUS

- Double master's programs in Technology Management (MBA) & Engineering (MSc)
- Students and teaching staff from all over the world
- Learning, working and living under one roof
- Close contact with industry partners
- A wide range of continuing education offers, individual and for companies



Modern, cosmopolitan and committed: these are qualities that apply to both the NIT Northern Institute of Technology Management and its students. Talented students from around the world study at the NIT for an MBA in Technology Management either in tandem with studying for an MSc in engineering or in-service alongside their employment. In an international community they learn on their English-language MBA course how to perform management tasks responsibly. A maximum of 35 students per class in this way add to their technical know-how entrepreneurial thinking, foreign languages and intercultural competence. At the heart of the campus the NIT with its seven learning rooms, 50 offices and 65 apartments is at one and the same time a place for learning, working and living. Many companies support the private, non-profit university institution by awarding scholarships and providing internships and master's theses for selected students. In the continuing education sector the NIT prepares students for the working environment of the future. Offers range from compressed workshops to customized personnel development programs over a period of years. The NIT's vision is to encourage lateral thinking that harnesses new technologies for the benefit of humankind and the environment.



»That's Hamburg and the sun is shining – not.  
The winter's hard, the summer's a joke.  
A fine day by the lake ends with thunder and lightning.  
...  
So much stress and yet no reason to move elsewhere,  
With hearts in the right place and feet in rubber boots.  
...  
The reason why people like living here  
Is that folk first feel, then think, and then talk.«

*Beginner, City Blues*



Let's be honest about it: scientific facts, first-rate research and teaching and ample grants and scholarships are all well and good, but studying at Hamburg University of Technology would be only half as good without Hamburg's typical flair. The metropolis on the Elbe River is not just Germany's second-largest but also its most beautiful city. Hamburg combines urbanity and the maritime, is both green and criss-crossed by waterways, noble and chic around the Alster and Jungfernstieg, original in Altona, hip in the Schanze and creative in the Karolinenviertel and St Pauli. It is never boring. By day you can row along the canals, jog in the Stadtpark or simply cruise around town; sunset on the Elbe, a movie, play or concert in the evening, a pub, club or bar by night; the Fischmarkt in the early hours before a new day dawns. Hamburg is a pearl, a metropolis worth living in. Our pearl. By the way, all that talk about the bad weather and standoffish locals is a pack of lies. Honestly.





## HAMBURG UNIVERSITY OF TECHNOLOGY

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**Publisher:** Prof. Dr.-Ing. Andreas Timm-Giel, President,  
Hamburg University of Technology

**Photos:** Anne Gaertner; Hauke Gilbert; Ute Grabowsky; Eva Häberle;  
Anne Hagemann; InstaWalk TU Hamburg/Mareike; LZN Laser Zentrum Nord;  
Lina Nguyen; NIT/Enver Hirsch; shutterstock.com @ Janaka Dharmasena /  
g-stockstudio / Ralf Gosch / Here / jantima14 / Rawpixel.com / Redfox1980 /  
Stock-Ass0 / sunfun; TU Hamburg/Kurt W. Hamann; TUTECH/aydinyr

**Editors:** Elke Schulze, Rüdiger Bendlin

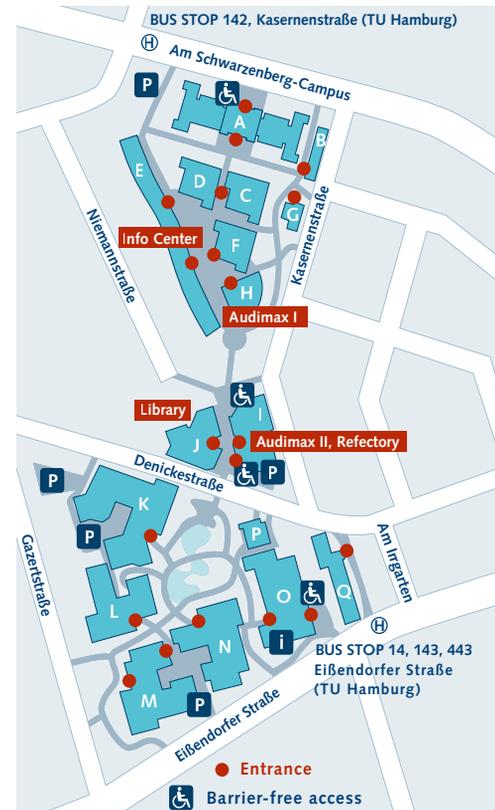
**Design:** formlabor

Printed on Papyrus RecyStar Polar hochweiß

New edition 1/2021

## HOW TO GET TO THE TU HAMBURG

- S-Bahn S1 to Hamburg Hauptbahnhof, then S31/S3 to Harburg-Rathaus or Heimfeld
- ICE and EC trains stop at Harburg
- S-Bahn, S31/S3 to Harburg-Rathaus or Heimfeld
- From HH-Centrum via Elbbrücken and Wilhelmsburger Reichsstraße, toward Hamburg-Harburg Mitte





[tu-hamburg.de](https://tu-hamburg.de)



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