#### Czech Technical Universitty in Prague in numbers

# 2023



A selection of achievements and statistics in three strategic areas: study, research and international cooperation.

#### Students

**17** 584

Total

A 3 421 (19.5 %)

International

100 +
Nationalities represented



In recent years, the number of students studying at CTU has been growing continuously, mainly due to the growing interest in technical and natural sciences. The modernisation of teaching programmes and quality infrastructure is also a supporting factor. CTU faces challenges in retaining and attracting new quality domestic and international students. Therefore, it emphasises the development of quality study programmes, maintaining a consistently high level of education and strengthening international cooperation.





Thanks to increased funding for research projects and investment in new technologies and infrastructure, and an emphasis on international cooperation and exchange programmes, the number of academic staff has increased in recent years. CTU is interested in and actively supports young talented scientists and PhD students.



#### Number of academics

2211 (of which 280 Professors = 12.7%)

(5.2% of the total number of academics)

### Number of graduates

**\*\*** 3 838

Total



International



Several thousand students graduate from CTU every year, and the number of graduates, including international graduates, is gradually increasing. CTU graduates find employment in various industries around the world, which is a testament to the quality and recognition of their education. This positive trend is also supported by the expansion of the offer of study programmes in English and intensive cooperation with industrial partners. CTU graduates contribute to innovation and technological progress both in the Czech Republic and abroad.



## Number of faculties and university institutes





CTU consists of 8 faculties and 6 university institutes. Of the more than 17 000 students, approximately 15% are from abroad. The greatest interest is in studying at the faculties of civil engineering, electrical engineering, mechanical engineering, information technology, and also architecture. The university institutes focus on specialised research and offer follow-up specific study programmes. A diverse range of guality study programmes and an increasing degree of internationalisation enrich the academic environment and promote global communication and cooperation.



Faculty of Civil Engineering Faculty of Mechanical Engineering Faculty of Electrical Engineering FNSPE Faculty of Nuclear Sciences and Physical Engineering Faculty of Architecture Faculty of Transportation Sciences

Faculty of Biomedical Engineering

Faculty of Information Technology

Masaryk Institute of Advanced Studies Institute of Physical Education and Sport Institute of Experimental and Applied Physics UCEEB University Centre of Energy Efficient Buildings Czech Institute of Informatics, Robotics and Cybernetics

#### TOP study programmes in Czech language

Informatika FIT Faculty of Information Technology

Stavební inženýrství FCE Faculty of Civil Engineering

Architektura a urbanismus FA Faculty of Architecture

Architektura a stavitelství FCE Faculty of Civil Engineering

<u>Strojní inženýrství</u> FME Faculty of Mechanical Engineering

### Number of study programmes

254 Total

**A** 66 In English language

FIT

FEE

**FME** 

FEE

**Informatics** Faculty of Information Technology

**Electrical Engineering and Computer Science** Faculty of Electrical Engineering

**Bachelor of Mechanical Engineering** Faculty of Mechanical Engineering

Computer Science

**FBME** 

CTU offers several dozen study programmes in both Czech and English. These include bachelor's, master's and doctoral programmes across disciplines such as computer science, electrical engineering, civil engineering or biomedical engineering. Teaching in English makes CTU attractive to international students, which supports the growing internationalisation and diversity of the academic environment. Students have the opportunity to receive a globally recognised education, which also helps open the door to an international career.



#### TOP study programmes in English

Faculty of Electrical Engineering

**Biomedical Technology** Faculty of Biomedical Engineering

#### Ranking of faculties by CTU students

\*\*\*\* FEE Faculty of Electrical Engineering FIT Faculty of Information Technology 

Faculty of Nuclear Sciences and Physical Engineering

FCE Faculty of Civil Engineering

**FNSPE** 

Satisfaction of students at CTU





FA

Faculty of Architecture

**FTS** 





The faculties of CTU regularly address students as part of a questionnaire survey to find out how the quality of teaching, availability of study resources and overall student satisfaction is assessed.

Advantages of studying at CTU from the students' point of view

- Quality of teaching and expertise of teachers
- Modern equipment and technology
- Diverse offer of study programmes and fields of study
- Opportunities for international internships and exchanges

- High employment rate in the labour market
- Support for career growth during and after graduation
- Involvement in scientific research projects already in bachelor's study programmes
- Opportunities for cooperation with industry internships, projects
- Support for involvement in student societies and groups



#### Ranking of faculties by CTU students

Faculty of Transportation Sciences

Faculty of Biomedical Engineering

Faculty of Mechanical Engineering

CTU is the 9th best university in Central and Eastern Europe and at the same time a leader in these fields:

- Engineering and Technologies
- Architecture and the built environment
- Informatics and Information Systems
- Civil and structural engineering
- Electrical Engineering
- Engineering and aviation
- Material Sciences

## **CTU** position by QS Ranking 2025

# CTU's location





According to an international comparison of universities, CTU is ranked as the leading technical university in the CEE region. In the QS Ranking, CTU excels especially in the fields of civil engineering, architecture, electrical engineering and computer science, which are rated as top not only regionally but also globally.

Tradition, cutting-edge research and strong industrial partnerships - qualities that make CTU a key player in technical education and innovation (not only) in Central and Eastern Europe.



#### by QS Subject Ranking 2024

Architecture and Build Environments	175		
Engineering and Technology			
Civil Engineering	220		
Computer Science	225		
Electrical Engineering	225		
Material Science	225		
Mechanical Engineering	225		
Physics	225		
Natural Science	307		
Mathematics	325		

#### Scientific research

(data for the last 5 years)

1 581

Number of researchers (including postdocs) (26.3% of the total number of employees)

Proportion of scientific publications published in Q1 and Q2 journals

**7** 616 Millions CZK

Dedicated funding for S&R (science and research)

**3** 062 Millions CZK

Volume of funding from structural funds

1 252 Millions CZK

Volume of funding from foreign sources

Technology Transfer

**1 760** Millions CZK

Financial benefits from technology transfers

104 New licenses

⊘ 242

Granted patents





### Top scientists from CTU

prof. Ing. Jiří Matas, Ph.D.	<u>FEE</u>	Visual Recognition	Mgr. Josef Urban, Ph.D.	<u>CIIRC</u>	Automate
prof. Ing. Tomáš Polcar, Ph.D.	<u>FEE</u>	problems of thin coatings prepared by magnetron sputtering,			mathemat
		tribology and development of new nanostructured alloys	prof. Jan Vitek, MSc., Ph.D.	<u>FIT</u>	Programm
prof. Dr. Ing. Jan Vrba, M.Sc.	<u>FEE</u>	development of microwave hyperthermia systems and	prof. Dr. Ing. Zdeněk Hanzálek	<u>CIIRC</u>	Industrial
		therapeutic applicators, biological research on general interactions between EM fields and biological systems	Ing. Tomáš Mikolov, Ph.D.	<u>CIIRC</u>	Al in Indus
prof. Ing. David Vrba, Ph.D.	<u>FBME</u>	Metamaterial structures and antennas for biomedical	doc. Ing. Tomáš Pajdla, Ph.D.	<u>CIIRC</u>	Robotics,
		applications, bio-electromagnetism	Dr. Ing. Josef Šivic	<u>CIIRC</u>	intelligent
Ing. Jan Rataj, Ph.D.	<u>FNSPE</u>	experimental neutron and reactor physics, safety evaluation of nuclear research facilities	Bc. Dominika Burešová	FEE	The Globa juniory") v
doc. Ing. Karel Hána, Ph.D.	<u>FBME</u>	medical electronics, electronic health care and personal health care systems			



ed reasoning, artificial intelligence, formal atics and verification, machine learning

ming

l Informatics, Automation and Optimization

strial Production, Industry 4.0

Machine Perception, Big Data

t machine perception in Al

al Undergraduate Award 2023 ("Nobelova cena pro v oboru matematika a fyzika





Data source: Annual Activity Report

## Most cited professional topics

over the last 5 years

- Robotics
- Concrete Science
- Computer Vision & Graphics
- Particles & Fields
- Automation & Control Systems
- Laser Science
- Metallurgical Engineering
- Deposition, Hardening & Coating
- Thermodynamics
- Geometrical Optics



In the last 5 years, the most cited professional topics are "artificial intelligence (AI)" and "machine learning". The most cited publications by CTU authors focus specifically on the areas of deep learning, neural networks, and AI applications in transportation and healthcare.

CTU also conducts cutting-edge research in the fields of robotics, autonomous systems (including technologies for drones and autonomous vehicles) and cyber security with a focus on data protection and prevention of cyber attacks. Other key research areas include the Internet of Things (IoT), applications for smart cities, industrial automation and healthcare, including sensors and data analytics. Energy and sustainable technologies are also among the frequently cited topics of CTU authors' publications that reflect current trends and societal needs.



Artificial Intelligence & Machine Learning Automation & Control Systems a. Geometrical Optics Modelling & Simulation Optical Electronics & Engineering Shape Memory Alloys Astronomy & Astrophysics ima & Emergency Surgery

### International cooperation

CTU is part of the EuroTeQ Engineering University 2030 alliance, thanks to which it can develop the guality and excellence of technical higher education in the European context.

- https://euroteq.cvut.cz/
- https://eurotech-universities.eu/



▲= 380

Number of partner universities

37 Partner universities from QS TOP 100 (of which 19 non-European and 18 European universities)

**Q** 177 Partner universities from QS TOP 500 (67 non-European and 110 European)

与 6,3%

Rate of student mobility

⇒ 25,5%

Míra mobility zaměstnanců

The most frequent international collaborations in the following scientific fields

- Particle Physics USA, Germany, Poland
- Nuclear Physics USA, Germany, Poland
- Multidisciplinary Physics USA, Germany, Italy
- Materials Science Germany, UK, Poland
- Instruments and Engineering UK, Germany, USA



• Astronomy and Astrophysics - Germany, USA, Poland



### Faculty of Civil Engineering

TRADITION - QUALITY - PERSPECTIVE

The Faculty of Civil Engineering at CTU boasts a rich history and tradition dating back to the 18th century. It offers a wide range of study programmes focused on civil engineering, architecture, geodesy and cartography. It has modern laboratories and technologies that allow students to apply and test theoretical knowledge. Scientific research activities are carried out in cooperation with Czech and foreign partners.

Students of the Faculty of Civil Engineering have a wide range of opportunities to engage in professional practice and project work in cooperation with leading construction companies, as well as to participate in exchange stays and international projects. Thanks to their professional preparedness and innovative thinking, graduates are well prepared for the real job market, where they are highly valued in the long term.



#### Faculty of Electrical Engineering

COMPETITIVENESS - EXCELLENCE - DYNAMISM

The Faculty of Electrical Engineering of CTU is one of the leading institutions in the field of electrical engineering, informatics and communication technologies in the Czech Republic. It offers a wide range of study programmes, also in English, focused on electrical engineering and informatics, electronics, telecommunications, automatic control, cybernetics, robotics, computer engineering and power engineering. Students can use modern laboratories and excellent research centres. The Faculty of Electrical Engineering is known for its cutting-edge research results and innovations, which attracts the interest of students and teachers from all over the world.

Thanks to close cooperation with industry, students are involved in research projects and internships already in their bachelor's studies. International exchange programmes and cooperation with foreign partners are also supported. Graduates are well prepared for a career in this dynamic and competitive technology sector.



# Faculty of Mechanical Engineering

The Faculty of Mechanical Engineering of CTU is one of the oldest and most important technical faculties in the Czech Republic. It focuses on teaching and research in the fields of mechanics, power engineering, production technologies, material and mechanical engineering. Students have access to modern laboratories and unique research facilities that allow them to use and develop theoretical knowledge in practice. The Faculty of Mechanical Engineering also collaborates with a number of industrial partners, giving students the opportunity to engage in research projects and internships and gain valuable experience.

The study programmes of the Faculty of Mechanical Engineering promote an interdisciplinary approach, innovation and, due to the rich cooperation with international universities, international mobility. Graduates of the Faculty of Mechanical Engineering are highly valued in the labour market for their technical expertise and ability to solve complex engineering problems.



#### Faculty of Nuclear Sciences and Physical Engineering CHALLENGES - SCIENCE - APPLICATIONS

The Faculty of Nuclear Sciences and Physical Engineering of CTU specializes in teaching and research in nuclear engineering, physics, mathematics and information technology. It offers study programmes in both Czech and English that combine theoretical knowledge with practical skills. Students can use state-of-the-art laboratories and unique research facilities, for example in the field of quantum or fractography.

The Faculty of Nuclear Sciences and Physical Engineering is known for its cutting-edge research and collaboration with leading scientific institutions around the world. Teaching is conceived on a mathematical and physical basis and a deep understanding of the context, which places high demands on students, but also allows for high application flexibility of graduates, who are highly valued in the labour market for their technical expertise and ability to solve complex scientific and engineering problems.



## Faculty of Architecture

**CREATIVITY - INNOVATION** 

The Faculty of Architecture of the CTU is a prestigious institution focused on teaching and research in the field of architecture, urbanism and design. It offers a wide range of study programmes that combine theoretical knowledge with practical skills. Students have access to modern laboratories and studios, and develop their creative skills in teaching focused on creativity and innovative approaches in both architecture and design. They also gain practical experience through a wide range of opportunities to engage in research and practice-oriented projects and internships.

It goes without saying that we support and offer a wide range of international exchange programmes and cooperation with foreign partners. Graduates of the Faculty of Architecture are highly valued in the labour market for their creativity, technical expertise and ability to innovate.



## Faculty of Biomedical Engineering

HEALTH and INNOVATION

The Faculty of Biomedical Engineering of CTU combines technical and medical sciences and prepares students for careers in biomedical engineering, medical technology and rehabilitation. It offers a wide range of study programmes in Czech and English as well as modern laboratory and research facilities. It is an important and respected partner in the research and development of new medical technologies and systems.

Learners are involved in research projects to find innovative and workable solutions. International exchange programs and collaborations with international institutions are encouraged, providing students with the opportunity to gain a global perspective and expand their expertise. Graduates of biomedical engineering are highly valued in the labour market not only for their high technical expertise but also for their ability to innovate in the field of medical technology.



# Faculty of Transportation Sciences

The Faculty of Transportation Sciences of CTU focuses on education and research in the field of transport systems and technologies. It is considered an important centre for the study of transport and logistics not only in the Czech Republic. It offers bachelor's, master's and doctoral degree programmes focusing on transport engineering, logistics, intelligent transport systems, transport safety, air transport and SmartCity.

Students are actively involved in research projects and work with industry partners to solve current transport problems and challenges, where they can combine theoretical knowledge with practical skills. State-of-the-art laboratories and equipment provide opportunities for students and scientists to conduct experimental research and develop new technologies.



# Faculty of Information Technology DYNAMICS - INNOVATION

The Faculty of Information Technology of CTU is the youngest university faculty. It specializes in education and research in the field of computer science, software engineering, AI and cyber security. It offers study programmes in both Czech and English focused on modern IT technologies, provides students with access to the latest research facilities and laboratories, and supports their involvement in projects and internships in cooperation with renowned IT companies and partners.

Graduates are well prepared for professional careers in this fastest growing sector. By supporting international exchange programmes with international universities, students are given the opportunity to gain valuable experience... Graduates of the Faculty are in great demand on the Czech and foreign labour market.







Results and projects of scientific and research activities of CTU: <u>https://results.cvut.cz/</u>



Department of Development R CTU: <u>https://www.cvut.cz/</u>



Source of information - Annual reports on the activities and management of CTU: <u>https://www.cvut.cz/rozvoj/vyrocni-zpravy</u>



Data and facts as a mirror of CTU in Prague: <u>https://results.cvut.cz/cvut-v-cislech</u>



Copyright © 2024 CTU in Prague