Facts & Figures 2018/19
Microscopic examination in cancer research
The Entrepreneurial University

The Technical University of Munich (TUM) ranks among Europe’s most outstanding universities in research and innovation – an achievement powered by its distinctive character as “Entrepreneurial University”:

**Science beyond boundaries.** TUM’s broad spectrum of subjects is unmatched across Europe, spanning engineering, the natural and life sciences, medicine, economics and social sciences. The university leverages this enormous potential by intensively and intelligently linking the different disciplines. In doing so, it successfully develops new fields of research extending from bioengineering to artificial intelligence. Simultaneously, it addresses the social, ethical and economic issues raised by technological change.

**Research meets practice.** Doing research with the brightest minds in science, steering international projects and gaining early business experience: Students at TUM are perfectly prepared for working on the important topics of our time. That is why employers regularly nominate TUM as one of the top ten universities in the world.

**Opportunities for talent.** TUM offers amazing opportunities at every level of study and research, starting with the first semester right through to professorship. It invests more than other universities in the professional development of individual talent.

**From lab to market.** No other German university produces as many start-up founders as TUM, thanks to its unrivalled support infrastructure. More and more companies – and not just start-ups, but some of the world’s most innovative global players – are establishing roots on campus in order to build research partnerships.
Departments & Integrative Research Centers

Departments
- Aerospace and Geodesy
- Architecture
- Chemistry
- Civil, Geo and Environmental Engineering
- Electrical and Computer Engineering
- Informatics
- Mathematics
- Mechanical Engineering
- Physics
- Sport and Health Sciences
- TUM School of Education
- TUM School of Governance
- TUM School of Life Sciences Weihenstephan
- TUM School of Management
- TUM School of Medicine

Integrative Research Centers
Scientists from various departments do research and teach in interdisciplinary fields at these centers.
- Munich Center for Technology in Society
- Munich School of BioEngineering
- Munich School of Engineering
- Munich School of Robotics and Machine Intelligence
- TUM Campus Straubing for Biotechnology and Sustainability
- TUM Institute for Advanced Study
Research & Technology Transfer

7,474  Scientific Publications 2018*

15  European Research Council
    Grants 2018

4  Clusters of Excellence (German Excellence Strategy)

10  DFG Collaborative Research Centres led by TUM

66  Patents first filed in 2018

80  Spin-off companies 2018

*Source: Scopus database
Student team that has won the Hyperloop competition in the USA three times
Studies

168 Programs
  among these
46 Bachelor
102 Master
58 English-language programs
47 Programs with double degree opportunity
7 Programs at TUM Asia in Singapore

41,375 Students
  among these
35 % Women
30 % from abroad

9,227 Graduates 2018

81,870 Members of TUM's Alumni Network

Staff

566 Professors
  among these
19 % Women
17 % from abroad
83 on Tenure Track

33 New appointments 2018
  among these
36 % from institutions abroad

6,644 Research and teaching staff
  (including university hospital)
  among these
36 % Women
23 % from abroad

3,334 Other staff
  (not-including university hospital)
  among these
60 % Women

Data as of Dec. 1, 2018, unless otherwise stated
Europe
40 partner universities and
329 Erasmus partnerships
Africa
10 partner universities
Asia
60 partner universities
Australia & New Zealand
13 partner universities

TUM Campus
1 TUM Asia, Singapore

TUM Branches
2 TUM Office Beijing
3 TUM Office Cairo
4 TUM Office Mumbai
5 TUM Office San Francisco
6 TUM Office São Paulo
7 EuroTech Universities Alliance (joint representation in Brussels):
• École Polytechnique – l’X
• École polytechnique fédérale de Lausanne – EPFL
• Eindhoven University of Technology – TU/e
• Technical University of Denmark – DTU
• Technical University of Munich – TUM
• Technion – Israel Institute of Technology
Sites in Germany

Munich
Historic campus in the heart of the city

Garching
High-tech laboratories on TUM’s largest campus

Freising-Weihenstephan
Modern life sciences in a traditional location

Straubing
Biotechnology with renewable resources

Taufkirchen / Ottobrunn
Aerospace innovation hub

Heilbronn
Economics in the “hidden champions” region
**Funding**

1,451.3 M euros **Total budget 2017**

(including university hospital)

*from*

626.8 M euros **State of Bavaria**

492.9 M euros **Revenue**

331.6 M euros **Raised external funds**

331.6 M euros **Raised external funds**

*from*

109.4 M euros **DFG**

65.1 M euros **German Federal Government**

49.3 M euros **Private enterprise**

36.8 M euros **Other private donors**

32.1 M euros **EU**

17.1 M euros **State of Bavaria**

16.9 M euros **Foundations**

4.9 M euros **Founders of endowed professorships**

The “green campus” in Weihenstephan
## Inventions, Discoveries, Successes

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1893</td>
<td>Prototype of Rudolf Diesel’s self-igniting engine. The idea came to Diesel while he was a student.</td>
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<td>1928</td>
<td>Hans Fischer reproduces the red blood pigment hemin in a test tube. (Nobel Prize 1930)</td>
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<td>1985</td>
<td>Robert Huber decodes photosynthesis. (Nobel Prize 1988)</td>
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<td>1997</td>
<td>Long short-term memory, a groundbreaking method for machine learning and the basis for today’s speech recognition</td>
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<td>2006 &amp; 2012</td>
<td>TUM is recognized as a University of Excellence.</td>
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<td>2008</td>
<td>Patient receives first transplant of two arms.</td>
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<td>Year</td>
<td>Event</td>
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<td>1868</td>
<td>King Ludwig II of Bavaria founds the Polytechnic School Munich as a catalyst for industrialization.</td>
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<td>1879</td>
<td>Carl von Linde founds a company to market his inventions in the field of cooling technology – the birth of the refrigerator.</td>
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<td>1956</td>
<td>PERM, the fastest computer in the world</td>
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<td>1957</td>
<td>Germany’s first research reactor</td>
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<td>2000</td>
<td>The world’s first minimally invasive heart valve operation</td>
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<td>2002</td>
<td>TUM Asia in Singapore, the first campus of a German university abroad</td>
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<td>2014</td>
<td>Mapping of the human proteome</td>
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<td>17 Nobel laureates have conducted research or studied at TUM.</td>
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TUM in Rankings

Rank 6  Global University Employability Ranking  
        (Times Higher Education)

Rank 6  Europe’s Most Innovative Universities (Reuters)

Rank 61  QS World University Ranking  
         (best German university)
Rank 22  in engineering
Rank 24  in natural sciences

Rank 44  THE World University Ranking (Times Higher Education)

Rank 48  Academic Ranking of World Universities  
          (Shanghai Ranking)

Rank 1  German Startup Monitor

Publications: 2018