Pursuing a Graduate Degree at the Technical University of Munich (TUM)

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Locations in Bavaria
European Metropolitan Region Munich

Research Network

Industry Network
# TUM at a Glance

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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<tbody>
<tr>
<td>Students</td>
<td>~ 41,500</td>
</tr>
<tr>
<td>Graduates</td>
<td>~ 9,500</td>
</tr>
<tr>
<td>Professors</td>
<td>548&lt;br&gt;2018</td>
</tr>
<tr>
<td>Faculties</td>
<td>14</td>
</tr>
<tr>
<td>Degree Courses</td>
<td>178&lt;br&gt;99 Masters&lt;br&gt;28 in English</td>
</tr>
<tr>
<td>Doctoral Theses</td>
<td>&gt; 1,000</td>
</tr>
<tr>
<td>ISI Publications</td>
<td>~ 6,000&lt;br&gt;2016</td>
</tr>
<tr>
<td>Research Agreements</td>
<td>&gt; 1,000</td>
</tr>
<tr>
<td>ERC Grants</td>
<td>96&lt;br&gt;Since ‘08</td>
</tr>
<tr>
<td>Humboldt Laureates</td>
<td>47&lt;br&gt;2011-15</td>
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<tr>
<td>Leibniz Laureates</td>
<td>18&lt;br&gt;Since ‘87</td>
</tr>
<tr>
<td>Nobel Laureates</td>
<td>17</td>
</tr>
<tr>
<td>Startups</td>
<td>700+&lt;br&gt;Since ‘90</td>
</tr>
<tr>
<td>Fundraising</td>
<td>~ 280M&lt;br&gt;1998 - 2016</td>
</tr>
<tr>
<td>3rd party funding</td>
<td>285 M&lt;br&gt;2016</td>
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<tr>
<td>Locations Abroad</td>
<td>7</td>
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University of Excellence since 2006
TUM in Rankings 2017/18

- **QS World Universities**
  - 83rd place
  - 64th place

- **Global University Employability Ranking**
  - 1st place
  - 6th place

- **THE World University Rankings**
  - 41st place
  - 2nd place

- **Best Global Universities U.S. N&W Report**
  - 1st place
  - 3rd place
  - 3rd place

- **Nature Index – Top Academic Institutions**
  - 3rd place
  - 73rd place

- **Academic Ranking of World Universities „Shanghai“**
  - 50th place

- **Reuters Most Innovative Universities**
  - 1st place
  - 2nd place
  - 38th place
Departments

- Center of Life and Food Sciences
  Weihenstephan

- Mechanical Engineering
- Mathematics
- Physics
- Informatics
- Electrical Engineering and Information Technology
- TUM School of Management
- TUM School of Education
- Sport and Health Science
- Medicine
- Chemistry
- Architecture
- Civil Engineering and Surveying
Students by Departments

- German Students WS 17/18
- International Students WS 17/18

- Mathematics
- Physics
- Chemistry

TUM School of Life Sciences Weihenstephan
- TUM School of Medicine
- Sport and Health Sciences
- Munich School of Engineering
- Architecture
- Civil, Geo and Environmental Engineering
- Electrical and Computer Engineering
- Mechanical Engineering
- Informatics
- TUM School of Management
- TUM School of Education
- TUM School of Governance
- Munich Center for Technology in Society

Natural Sciences
- Life Sciences
- Medicine

54% Natural Sciences
34% Life Sciences
16% Medicine

51% Engineering

Management
Education
Social Sciences
Humanities
Master courses at TUM I

Various Master courses completely in English or in English/German
• 30 Master courses in English and 28 Master courses in English and German in Science and Engineering
• [https://www.tum.de/en/studies/degree-programs/](https://www.tum.de/en/studies/degree-programs/)

Duration
• 2 years (4 semesters)
• Administrative Fees: 129 Euros / semester

Preconditions / Application process
• Outstanding Bachelor degree (BSc), needs to be recognized
• Letter of Motivation
• Letters of recommendation (normally from 2 different professors)
• German language skills helpful but not mandatory (only for Master courses completely in English language)
• Good knowledge of English is essential (TOEFL: min. Ibt:88, Cbt:234, PbT: 605 / IELTS: min. 6.5 and CAE&CPE Level A,B and C)
• Sometimes Internships and work experience required
• Interviews in some cases (via skype or personally)
• Every course has its own list of required documents
Master courses at TUM II

**International Master courses in English**
- Sustainable Resource Management (Master)
- Nutrition and Biomedicine (Master)
- Physics (Applied and Engineering Physics) (Master)
- Power Engineering (Master)
- Power Systems and Energy Management (Master)
- ESPACE-Earth Oriented Space Science and Technology (Master)
- Environmental Engineering (Master)
- Communications Engineering (Master)

**International Master courses in English and German**
- Management and Technology (TUM-BWL) (Master)
- Nanoscience and Catalysis (Master)
- Landscape Architecture (Master)
- Industrial Biotechnology (Master)
- Electrical Engineering and Information Technology (Master)
- Robotics, Cognition, Intelligence (Master)
The TUM doctoral model I

- Independent research as well as integration into the TUM research environment and interdisciplinary networks
- Combination of fixed and optional curriculum based on the individual needs of the candidate
- Mentor besides doctoral supervisor
- Supervision agreement and mid-term feedback talk
Application for a doctorate at TUM II

**Pre-requisites**

- Excellent Master degree
- Fluency in English (German not needed but a plus)
- A TUM professor who supervises the doctoral research

**Application procedure**

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<th>Self-Initiative Application</th>
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<tr>
<td>Develop your research proposal</td>
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<td>Sign a Supervision Agreement</td>
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<th>Open Position Application</th>
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<tr>
<td>Apply for open doctoral position</td>
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Funding a doctorate at TUM

- No tuition fees for doctorates
- Three possibilities for funding, each with different implications

1. **Employment at TUM:**
   Research associates are employed at a TUM chair/research group. Available positions on the TUM website and/or website of the chair/research group.
   - Work closely with supervisor
   - Involves teaching and administrative tasks
   - Part of TUM’s research staff with access to staff development facilities

2. **Scholarship/ Grant:**
   Scholarship holders finance their doctorate with funding from an external organization. No TUM scholarships.
   - Active participation in the academic environment of TUM
   - Often more freedom in choosing the research topic

3. **External Doctorate:**
   Candidates work for a company or a external research institution while being supervised by a TUM professor.
   - Active participation in the academic environment of TUM
   - Less integration into the daily-business of the chair/research group
TUM-GS Facts & Figures

- Established 2009
- Largest of its kind in Germany with automatic membership since 2014

- **17 Departmental Graduate Centers**
- **8 Thematic Graduate Centers**, incl. 4 with external partners
- **Graduate Dean** as a member of the TUM Extended Board of Management
- Doctoral Council

- Current members: ~6,000
- Intake in 2017: **1344**
- Graduation in 2016: **995**
- female doctoral candidates: **33%**
- international doctoral candidates: **29%**
- **Top 5 international countries** of origin: China, Italy, Austria, India, Iran
TUM-GS Kick-Off Seminar

15-17 Kick-Off Seminars p.a.
80-100 doctoral candidates across all disciplines

Goals:
• Interdisciplinary exchange
• Strengthening of personal network
• Get to know TUM and its resources
• Transferable skills training

Fixed program parts:
• Intro to Good Scientific Practice
• Poster session
• Science Slam, music, culture and networking
• Introduction to TUM services and entrepreneurship
TUM-GS Partnership Mobility Grant

Additional travel grant for research stays and workshops at partner universities

- Up to 500 EUR (within Europe)
- Up to 1,000 EUR (outside Europe)
- All regular members of the TUM-GS

EuroTech Alliance
GlobalTech Alliance
Additional TUM-GS partner universities

- University of Alberta (UAAlberta)
- Imperial College London (ICL)
- DTU (Technical University of Denmark)
- EPFL (École Polytechnique Fédérale de Lausanne)
- L’X (École Polytechnique)
- SPbPU (Peter the Great St. Petersburg Polytechnic University)
- TU/e (Eindhoven University of Technology)
- IITB (Indian Institute of Technology Bombay)
- NTU (Nanyang Technological University)
- UNSW (University of New South Wales)
- UQ (University of Queensland)
- SJTU (Shanghai Jiao Tong University)
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PhD Opportunity Grant

- 4-8 weeks research stay at the chair/research group of potential TUM supervisor
- Monthly scholarship rate: 700 euro + 150 euro accommodation support

Objectives:
- Increase the chance of finding a doctoral supervisor by enabling personal meetings and interaction between applicant and prospective supervisor
- Gain first impressions of future colleagues, the professor
- Get overview of TUM’s research environment, Germany and life in Munich

How to apply:
- No deadlines
- Letter of support from the prospective doctoral supervisor for research stay