Vision für den Campus Taufkirchen/Ottobrunn
TUM SoED - Department of Aerospace and Geodesy

Launched by TUM on May 9, 2018 as an engineering department

25 Professors

900+ Students, thereof 27% female and 49% international

5 Locations:
- Ottobrunn/Taufkirchen
- Garching
- Oberpfaffenhofen
- Munich
- Wettzell
Professorships

Strengthening future fields of research – bridging between disciplines - attracting ambitious young talents

<table>
<thead>
<tr>
<th>Aeronautics</th>
<th>Space</th>
<th>Geodesy</th>
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</thead>
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<tr>
<td>Aerospace Aerodynamics</td>
<td>Astronautics</td>
<td>Astronomical and Physical</td>
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<tr>
<td>Prof. Christian Breitsamter</td>
<td>Prof. Ulrich Walter</td>
<td>Geodesy</td>
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<tr>
<td>Aircraft Design</td>
<td>Helicopter Technology</td>
<td>Engineering Geodesy</td>
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<tr>
<td>Prof. Mirko Hornung</td>
<td>Prof. Manfred Hajek</td>
<td>Prof. Christoph Holst</td>
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<tr>
<td>Autonomous Aerial Systems</td>
<td>Rotorcraft and Powered Lift</td>
<td>Geodetic Geodynamics</td>
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<tr>
<td>Prof. Markus Ryll</td>
<td>Lift Vehicles</td>
<td>Prof. Florian Seitz</td>
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<tr>
<td>Carbon Composites</td>
<td>Sustainable Future Mobility</td>
<td>Big Geospatial Data</td>
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<tr>
<td>Prof. Klaus Drechsler</td>
<td>Prof. Agnes Jocher</td>
<td>Management</td>
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<td>eAviation</td>
<td>Turbomachinery and Flight</td>
<td>Prof. Martin Werner</td>
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<td>Prof. Sophie Armanini</td>
<td>Propulsion</td>
<td>Cartography and Visual</td>
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<td>Flight System Dynamics</td>
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<td>Analytics</td>
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<td>Prof. Florian Holzapfel</td>
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<td>Prof. Liqui Meng</td>
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<td>Communication and Navigation</td>
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<td>Prof. Christoph Günther</td>
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<td>Data Science in Earth</td>
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<td>Observation</td>
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<td>Prof. Xiaoxiang Zhu</td>
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<td>Earth System Modelling</td>
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<td>Prof. Niklas Boers</td>
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</table>

50+ professorships until 2024

Geodesy

Engineering Geodesy
Prof. Christoph Holst

Geodetic Geodynamics
Prof. Florian Seitz

Geoinformatics
Prof. Thomas Kolbe

Land Management and Land Tenure
Prof. Walter de Vries

Photogrammetry and Remote Sensing
Prof. Uwe Stilla

Remote Sensing Technology
Prof. Richard Bamler

Satellite Geodesy
Prof. Urs Hugentobler
“Space Valley” in the Metropolitan Region of Munich
MISSION ERDE

NUR WER DIE WELT IM GANZEN BEGREIFT, KANN SIE IM GANZEN BEWEGEN.

Die europäische Fakultät für Luftfahrt, Raumfahrt und Geodäsie. Jetzt neu an der TUM. www.lrg.tum.de
Research

Cutting-edge research, innovative teaching and technology development with social relevance

Mobility & Urbanization
- Smart networking of traffic
- High-precision surveying
- Urban planning
- Navigation & communication
- Autonomous flight
- New materials & manufacturing processes
- Simulation & tests

Environment & Food
- Quantifying global and local processes
- Climate protection measures
- "Space weather"
- Space debris
- Traffic turnaround & "green flying"
- Increasing yields in agriculture
- Food security

Security & Cooperation
- Technical security & reliability
- Data protection
- Global cooperation
- International security

Fascination & Knowledge
- Space exploration
- Creation and development of the universe
- Promoting enthusiasm for technology
- Attracting international talents

Global trends & disruptive changes ➔ Innovations and new business models
Why study Aerospace now?!  

In spite of what you may have heard about the aerospace industry, there are plenty of exciting developments.
Global Rankings

TUM is highly ranked in Engineering and Aerospace world-wide

Academic Ranking of World Universities
(Shanghai Ranking) for Aerospace Engineering

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Country</th>
<th>Rank</th>
<th>Subject Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Massachusetts Institute of Technology (MIT)</td>
<td>USA</td>
<td>5</td>
<td>189.0</td>
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<td>14</td>
<td>University of Maryland, College Park</td>
<td>USA</td>
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<td>15</td>
<td>The University of Texas at Austin</td>
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<td>16</td>
<td>Technical University of Munich</td>
<td>Germany</td>
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<td>16</td>
<td>Technion-Israel Institute of Technology</td>
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http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/aerospace-engineering.html

QS World University Ranking - Engineering and Technology

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<th>Rank</th>
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</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Technical University of Munich</td>
<td>Germany</td>
<td>Engineering</td>
</tr>
<tr>
<td>30</td>
<td>Princeton University</td>
<td>USA</td>
<td>Engineering Technology</td>
</tr>
</tbody>
</table>


Times Higher Education - Engineering

Times Higher Education Employability Ranking: Number 1 in Germany


The Technical University of Munich is Germany's best university for employability. The top two universities are located in Munich. Two of the other top five universities are located in Berlin, and the last is located in Heidelberg.
Curriculum

• Content: Competences are acquired and build upon each other.

• The program is taught entirely in English.
Access requirements

(Formal) requirements for admission:

- Application for Admission (to be filled out in the TUMonline application portal)
- Higher education entrance qualification (HZB)
  → for international applicants: preliminary examination documentation (VPD) from uni-assist
- English language cover letter (motivation, personal interest)
- ID (e.g. passport)
- Complete, current CV
- English B2 and German A2 language skills
- If available, proof of relevant extracurricular activities
  (e.g. participation in "Jugend forscht", Mathematics Olympiad, Science Competitions, Awards, etc.)
- Proof of 8-week pre-study internship

→ Passing the aptitude assessment procedure
Student Groups

Join student initiatives, design, build your ideas, compete and have fun!

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**WARR:** Invent CubeSats and Nano-Satellites

**Hummingbirds:** Make turbines hum

**AkaModell:** Model your way to success

**Akaflieg:** Construct a plane and fly

**Horyzn:** Create a startup and take off vertically
Student Groups

Links

• TUM Hyperloop: Development of climate-neutral, ground-based transportation system
  https://tumhyperloop.de/?lang=de#home

• WARR: Development and construction of astronautical technologies, e.g. rocket propulsion, space elvator, Mars rover, …
  https://warr.de/de/
  https://en.wikipedia.org/wiki/WARR_(TUM)

• HORYZN: Design, simulation and building of aviation prototypes
  https://horyzn.org/

• MOVE III: Development and operation of a small satellite
  https://www.move2space.de/missions/move-iii/
Thank you for your attention.

Contact, help, study counseling:

<table>
<thead>
<tr>
<th>Study Program Coordinator</th>
<th>Student Advising Office</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:coordination.asg@ed.tum.de">coordination.asg@ed.tum.de</a></td>
<td><a href="mailto:studium@tum.de">studium@tum.de</a></td>
</tr>
<tr>
<td>Irma Pasagic</td>
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Applying for Bachelor: [https://www.tum.de/en/studies/application/bachelor/application-bachelor](https://www.tum.de/en/studies/application/bachelor/application-bachelor)

For international students: [https://www.tum.de/en/studies/international-students](https://www.tum.de/en/studies/international-students)