MISSION EARTH
COMPREHENDING OUR WORLD IS MOVING OUR WORLD

TUM Bachelor Sessions
ED School, B.Sc. Aerospace
Dr. Dimitri Franz
“Space Valley” in the Metropolitan Region of Munich
Since 01.10.2021 → **TUM School of Engineering and Design**

Departments:
TUM School of Engineering and Design - Departments

YouTube Link: https://www.youtube.com/watch?v=gyF2WpRlZ4k
Figures and Facts - TUM School of Engineering and Design *

- Overall Students (B.Sc., M.Sc.): **ca. 11,600**
- Degree Programs: **42**
- First-year Students Bachelor + Master per year: **ca. 4,700**
- Overall Lecturers: **124**
- Academic Staff: **ca. 1,600**

* Numbers from 2022
Department of Aerospace and Geodesy

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

30+ Professors

1000+ Students, thereof 1/3 female and 1/2 international

5 Locations: Ottobrunn/Taufkirchen Garching Oberpfaffenhofen Munich Wettzell
Attractive international study programs with strong focus on practical application and entrepreneurship

Degree courses

- Bachelor:
  - Aerospace
  - Geodesy and Geoinformation
  - Land Management (@LMU)

- Master:
  - Aerospace
  - Aerospace Systems Engineering (with ISAE)
  - Aerospace Engineering (in Singapore)
  - Geodesy and Geoinformation
  - Earth-Oriented Space Science and Technology
  - Cartography
  - Land Management and Geospatial Science
Degree courses

**Bachelor Aerospace**

- Teaching language: **English**
- Main locations: **Garching and Ottobrunn**
- Interdisciplinary training (e.g. engineering and navigation disciplines)
- Solid basic knowledge for future aerospace engineers
- Career in the international professional field of research and industry
- Sustainable solutions for mobility in times of global, ecological and economic challenges
Professorships

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

**Aeronautics**
- **Aerospace Aerodynamics**
  - Prof. Christian Breitsamter
- **Aerospace Structure Design**
  - Fernaß Daoud
- **Aircraft Design**
  - Prof. Mirko Hornung
- **Autonomous Aerial Systems**
  - Prof. Markus Ryll
- **Carbon Composites**
  - Prof. Klaus Drechsler
- **eAviation**
  - Prof. Sophie Armanini
- **Flight System Dynamics**
  - Prof. Florian Holzapfel
- **Rotocraft and Powered Lift Vehicles**
  - Prof. Ilkay Yavrucuk
- **Sustainable Future Mobility**
  - Prof. Agnes Jocher
- **Turbomachinery and Flight Propulsion**
  - Prof. Volker Gümmer

**Space**
- **Astronautics**
  - Prof. Ulrich Walter
- **Lunar and Planetary Exploration Technologies**
  - Prof. Philipp Reiß
- **Pico and Nano Satellites, and Satellite Constellations**
  - Prof. Alessandro Golkar
- **Space Propulsion**
  - Prof. Chiara Manfletti
- **Human Space Flight**
  - Prof. Gisela Detrell

**Geodesy**
- **Astronomical and Physical Geodesy**
  - Prof. Roland Pail
- **Big Geospatial Data Management**
  - Prof. Martin Werner
- **Cartography and Visual Analytics**
  - Prof. Liqiu Meng
- **Communication and Navigation (NN)**
  - Prof. Christoph Günther
- **Data Science in Earth Observation**
  - Prof. Xiaoxiang Zhu
- **Earth System Modelling**
  - Prof. Niklas Boers
- **Engineering Geodesy**
  - Prof. Christoph Holst
- **Geodetic Geodynamics**
  - Prof. Florian Seitz
- **Geoinformatics**
  - Prof. Thomas Kolbe
- **Land Management and Land Tenure**
  - Prof. Walter de Vries
- **Remote Sensing Technology**
  - Dr. Marco Körner
- **Satellite Geodesy**
  - Prof. Urs Hugentobler
- **Remote Sensing Appl.**
  - Prof. Katharina Anders

**Engineering**
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50+ professorships until 2024
Curriculum

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

• The program is taught entirely in English.
# Module

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**Key:**
- To complete within first year
- Required Core Subjects
- Pass/Fail Requirements
- Core Electives
- Additional Electives
- Practical Engineering Experience
- Bachelor's Thesis

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**Bachelor's Thesis**

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Admission to the B.Sc. Aerospace

**Application (online)**
15. May until 15. July

1. **Stage: Grade HZB (50%)**
   As well as individual grades
   Maths (3x), English (1x),
   natural or computer sciences (2x)
   (in total 50%)

   - **Extracurricular qualification**
     - ca. 2.0 and better (Yes)
     - ca. 2.0 to ca. 2.6 (No)

2. **Stage: Aptitude assessment/interviews**
   - Necessary points achieved?
     - Yes (Admission)
     - No (Rejection)

   - Rejection ca. 2.6 or worse (No)

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**Start of studies**

*) at least 8-week pre-study internship (ideally in production)

Preliminary maths course (optional) in the first two weeks of October before the start of the course
Admission to the B.Sc. Aerospace

- Application needs to be 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)
- Complete, current CV in English
- Potentially German A2 language certificate
- Potentially English B2 language certificate (or stage II of Aptitude Assessment Procedure)
- 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

Please check our Wiki page where all important details are summarized!
- Google “TUM bachelor aerospace wiki” → First result → Click on “Prospective Students”
Student Groups

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

**WARR**
Invent CubeSats, Nano-Satellites, Rocketry and MARS rovers

**Akaflieg**
Construct a plane and fly

**TUM Hyperloop**
Model your way to success

**LEVITUM**
Building the world's longest range eVTOL drone

**Horyzn**
Create a startup and take off vertically

and many more…
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LEVITUM:
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Youtube Link: https://www.youtube.com/watch?v=FslNhHQFA
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Youtube Link: [https://www.youtube.com/watch?v=c3lhw0QJZkw](https://www.youtube.com/watch?v=c3lhw0QJZkw)
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Support and contact

• Study program coordinator, B.Sc – academic counselling:
  Dimitri Franz, coordination.asg@ed.tum.de

• Application questions for the B.Sc. Aerospace in specific:
  applications.asg@ed.tum.de

• Student advising office: Responsible for formal checks of the documents
  studium@tum.de

• Student council: https://fslrg.de/
  info.fslrg@ed.tum.de

• uni-assist “check university admission”: https://www.uni-assist.de/en/tools/check-university-admission/
Thank you!
Any questions?

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