



TUM School of Engineering and Design  
Technical University of Munich

**B.Sc. Aerospace:  
Electives, Lab Courses, Engineering Project  
Bachelor Thesis and Transition to Master**

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# Agenda

- (1) Electives requirements
- (2) Lab Courses
- (3) Engineering Project
- (4) Bachelor thesis
- (5) Transition to Master

# Important information

- Always register for your exams via your curriculum in TUMonline (not as a „Freifach“)
- If there are substantiated reasons\* before exams, you must report them **immediately**.
- No late registrations for exams are possible! This also applies to lab courses even if you have already obtained your grade.
- Counseling hours including updates: <https://collab.dvb.bayern/x/1tdfB>.

\*According to the legal requirements, a hardship application can only be approved if the delay in studies is caused by reasons beyond the student's control and which were unforeseeable. These include serious, prolonged illness, accidents, the care of unexpectedly ill close relatives, or other serious, unexpected misfortunes in the student's immediate family.

## Electives requirements and structure

Area	Credits
Engineering electives <ul style="list-style-type: none"><li>• System elective</li><li>• Modeling elective</li><li>• Optional engineering elective</li></ul>	20 <ul style="list-style-type: none"><li>- 5</li><li>- 5</li><li>- (10)</li></ul>
Engineering supplementary courses	6
Free electives	5

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# Engineering electives

- You **must** choose at least one module from **system** and one from **modeling electives**
- Remaining 10 credits can either come from **optional engineering electives**, system elective or modeling electives
- Typically, each module is worth 5 credits → Pass 4 modules to complete the engineering area

## Optional

- Optional, but highly suggested: Try to choose modules from two of the following subject areas
  - System
  - Dynamics
  - Propulsion
- Modules can be chosen from all 3 sub-areas (system, modeling, optional)
- Some modules have hints about their subject areas in their title: For instance
  - „Aeronautic *Propulsion* Systems“
  - „Computational *Aerodynamics*“
- Some modules do not directly fit into any of the 3 subject areas. In case you are unsure, ask the responsible

lecturer.

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# Engineering supplementary courses

Area	Credits
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- Goal: Supplement basic knowledge/competencies in addition to the required modules during semesters 1-4
- Majority of supplementary courses are worth 3 credits → Pass two modules to complete this elective area
- The list of supplementary courses has been significantly expanded in SoSe24

# Free electives

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- Module must be included in the curriculum to get the credits (see next slide)
- Any School/Department of TUM, **excluding**
  - Courses that are part of the MSc Aerospace
  - ASG department courses
  - Other ED courses
- Soft skills or foreign language courses (NB: language course cannot be a language which is your native language)
- From other universities, esp. from exchange semester(s)
  
- For more information:
  - General TUM module handbook:  
[https://campus.tum.de/tumonline/ee/ui/ca2/app/desktop/#/pl/ui/\\$ctx/wbModHb.wbShow?\\$ctx=design=ca2;header=max;lang=de&pOrgNr=1](https://campus.tum.de/tumonline/ee/ui/ca2/app/desktop/#/pl/ui/$ctx/wbModHb.wbShow?$ctx=design=ca2;header=max;lang=de&pOrgNr=1)
  - Center for Key Competences: [https://wiki.tum.de/x/7gm\\_QQ](https://wiki.tum.de/x/7gm_QQ)
  - Munich Center for Technology in Society/WTG@MCTS: <https://www.cvl-a.mcts.tum.de/english-speaking-seminars/>
  - TUM Language Center: <https://www.sprachenzentrum.tum.de/en/sprachenzentrum/languages/>

# Inclusion of free elective courses

- You can apply to the board of examiners for inclusion of modules to be included as a free elective
- Things we check
  - No limit on the number of participants → module is designed such that more students can participate
  - Module will take place long-term
  - General agreement from the person responsible for the module
- When: The sooner, the better, but before the term start
  - Summer term: 1.3. – 31.3.
  - Winter term: 1.9. – 30.9.
- Applications have to be made via e-mail to the examination office: [examination.asg@ed.tum.de](mailto:examination.asg@ed.tum.de)
- Keep in mind, there is no guarantee that modules will be included as a free elective and that you get the credits. → Talk to us instead of simply registering for a random module!
- Modules already listed in the free electives have already been checked and can be chosen.



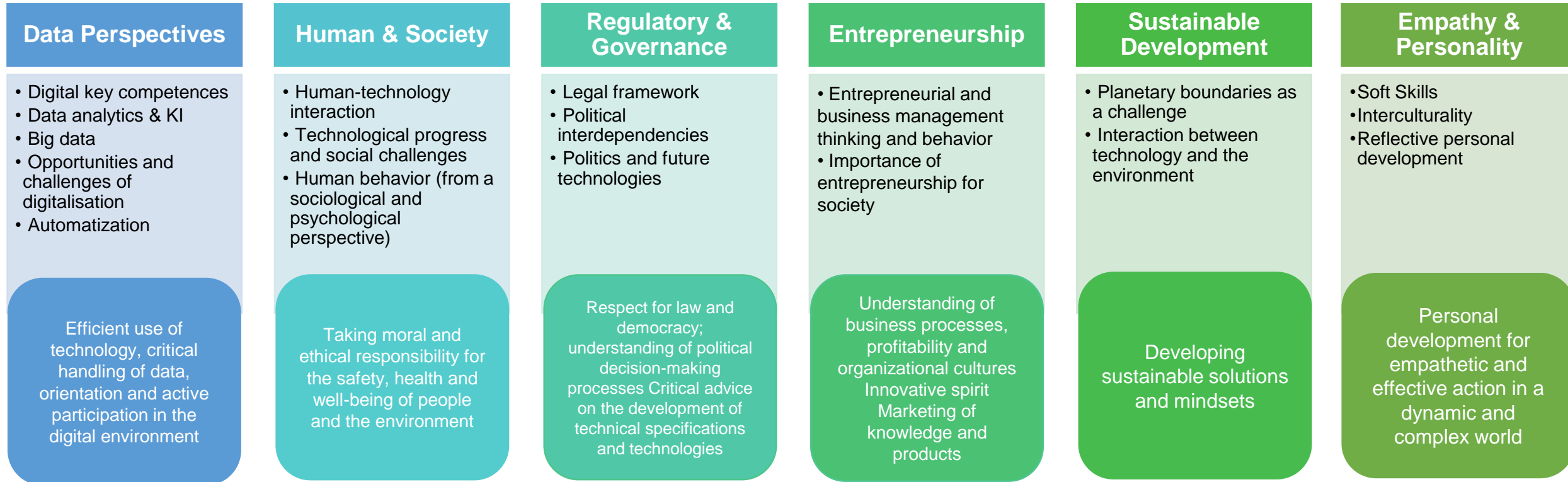
# ZSK

Center for Key Competencies

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# ZSK modules

- A good overview can be found here: <https://collab.dvb.bayern/x/-z--O>
- ZSK modules (Zentrum für Schlüsselkompetenzen, engl. center for key competencies) are part of the free electives
- Portfolio includes the following topics



# Free electives

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- Some ZSK modules are not graded → The credits of these modules count towards your curriculum but are not considered in the average grade.
- In exceptional cases, if you do one or two additional credits, e.g. 2x 3 credits (ZSK or other) or 1x 6 credits, these additional credits are counted towards your curriculum.

# Aerospace Lab Courses

- Goal: Introduction to practical methods in engineering in small groups
- You must choose **two modules** from the lab course electives (in total at least 8 credits). It does not matter if one or both courses come from the list „Additional Lab Courses, Lab Course I, Lab Course II, Bachelor Specific or General“
- Some practical courses take place similar to normal courses during the semester; whereas others are block seminars at the end of the term
- Registration periods
  - Bachelor specific courses (mostly Lab Courses I): Either part of the general registration or individual registration period (contact chair for more details)
  - General lab courses
    - Winter term:
      - Courses accompanying the semester and block-courses (beginning until 31.12.): end of Aug – early Sep
      - Block-courses (beginning between 01.01. and 31.03.): late Nov – early Dec
    - Summer term:
      - Courses accompanying the semester and block-courses (beginning until 30.06.): late Feb - early Mar
      - Block-courses (beginning between 01.07 and 31.09.): late May - early June

## Engineering Project (LRG0202) (Link)

- Ideally to be completed in 5th semester, but can be done in 4th or 6th semester as well. However, knowledge from semesters 1 to 4 recommended
- Practical (research) project with a chair from mostly from Aerospace & Geodesy, but other ED chairs also possible (architecture and environmental engineering excluded)
- Group projects and projects with students groups are possible (ask lecturers).
- Similar to a „mini Bachelor thesis“
- Topic has to be found and arranged by the students
  - Contact chairs for possible topics or speak to a lecturer after a lecture or tutorial
  - Even better: Inform yourself about an area and contact a chair with an idea
  - Avoid e-mail similar to „I need an engineering project, can you please offer me one?“
  - We compiled a list of all chairs and their websites on the wiki, <https://collab.dvb.bayern/x/1pSHVg>

# Can I choose Master modules in my Bachelor?

- Generally, Master modules which are included in the Bachelor curriculum: Modules were pre-selected and reviewed. → You're free to choose these modules as electives.
- Additional Master module cannot be included.
- **But:** If a Master's module contributes to your Bachelor's degree (i.e. credits and marks), you **cannot** choose these same Master's modules in the M.Sc. Aerospace program!
- You can check in the module description in TUMonline whether a particular module is part of the M.Sc. Aerospace curriculum (-> open module description, then click on „Allocations to SPO versions“)
- You can always register and pass exams of any modules as „Freifach“, i.e. any master module

# Bachelor's thesis (12 Credits)

- **Mandatory Prerequisite: 120 credits in total, at least 99 credits from the compulsory modules (Pflichtmodulen), and a pre-study internship (pass/fail, no credits)**
- Thesis registration by the thesis supervisor in the ED portal <https://portal.ed.tum.de/en/Theses/>
- You will then receive an **e-mail asking you to confirm the registration** of the thesis and the data provided in the portal.
- Only once you confirm the registration, it will be reviewed by the examination board for approval or rejection. You will receive feedback by e-mail.
- All necessary information can be found on the [wiki of the ED portal](#)
- A topic can be provided by a university lecturer or habilitation candidate from all departments of the School of Engineering and Design - except Architecture & Design and Civil and Environmental Engineering: [TUM School of Engineering and Design - TUM School of Engineering and Design - BayernCollab \(dvh.bayern\)](#)
- Other thesis supervisors are NOT possible

# Bachelor's thesis

- The composition/supervision of a thesis can also be carried out externally or at another department /school, **provided the thesis registration takes place via an approved TUM thesis supervisor**. The grading will also only be done by the approved thesis supervisor. Students themselves are responsible for finding an appropriate TUM supervisor.
- Maximum completion time: six months
- If the last possible submission date of your Bachelor's thesis falls on a non-working day (weekend/holiday), the actual submission must occur on the next working day at the latest
- Submission: Upload in ED portal. The Bachelor's thesis must be signed either by hand or digitally by you.

How to use the ED portal: <https://collab.dvb.bayern/display/TUMedschooloffice/Final+Theses>

See also FAQs <https://collab.dvb.bayern/x/lorWGg>

# Bachelor's thesis

- **The Bachelor's thesis is only completed when the final presentation has been given**
- Final presentation can be held before or after submission (the 6-month deadline does NOT apply)
- A failed thesis may be repeated once (with a new topic)
- If you do not register your Bachelor Thesis within the regular study period (8<sup>th</sup> Semester), you can submit the thesis in the next semester (9<sup>th</sup> Semester). BUT you will then lose the option of a second attempt.

# Bachelor's degree

- As soon as all the requirements for graduation are fulfilled and the status of your degree program has been updated to „**passed**“ in TUMonline (green „P“), you will be notified by e-mail within a few days.
- It is recommended that you check your details in TUMonline (results, thesis title, assignments)
- **After confirmation, the Examination Office ASG will release your final documents**  
→ further processing will then be carried out by the CST – Graduation Office Garching: [Graduation Documents – TUM](#)
- Official notification by the CST - Graduation Office: As soon as the documents are ready for collection or delivery (approx. 4-6 weeks – please keep your address in TUMonline up to date)
- Central information on the graduation documents can be found here: [Graduation Documents - TUM](#)

# Final documents

- The certificate date is the date the last requirement (exam) was completed for graduation
- The transcript of records contains the positive modules in the degree program and, as an additional document, all additional requirements passed (layout is similar to the transcript of records in TUMonline)
- There is no indication of the (subject) semester number, number of examination attempts, or negative results on the diploma certificate

# Disenrollment after finishing the degree

- Students are automatically disenrolled at the end of the semester in which the certificate is issued
  - In the final semester, examinations on optional subjects (Freifächer) can still be taken until the end of the semester.
- Once the process to issue the Bachelor certificate is initiated, optional subjects will not be listed on the certificate.

<https://www.tum.de/en/studies/graduation/disenrollment>

# Transition to Master's degree

- An early application for an M.Sc. Aerospace can be made after 140 credits or more have been completed during the Bachelor's degree
  - ! **International non-EU students:** Fees apply when no Bachelor certificate can be submitted at the beginning of the Master's.
  - <https://www.tum.de/en/studies/fees/tuition>: Proof of the successful completion of the Bachelor's program is required before the enrollment deadline (winter semester 2024: 15.11.2024, summer semester 2025: 27.05.2025). A preliminary certificate is sufficient.
- For a successful admission, you have to apply regularly via TUMonline and submit all required documents
- The Bachelor's degree **must be submitted no later than one year** after the start of the Master's program → Otherwise, automatic disenrollment after 2nd Master term

# Aptitude assessment

- As a graduate of the B.Sc. Aerospace, you will be admitted directly to the M.Sc. Aerospace program without having to go through the aptitude assessment procedure. Nevertheless, **you have to upload a complete application** and also **register in our tool Master EV** (<https://masterev.sgb-as.ed.tum.de>).
- Please note the application deadlines:
  - Start in the winter semester: 01.04. - 31.05.
  - Start in the summer semester: 01.09. - 30.11.
- For general questions on formal aspects of the application, please get in touch with [studium@tum.de](mailto:studium@tum.de)
- Please send any questions about the aptitude assessment procedure to [applications.asg@ed.tum.de](mailto:applications.asg@ed.tum.de)

## Important links

Important information for the Aerospace degree program can be found here:

- [B.Sc. Aerospace - TUM School of Engineering and Design - BayernCollab \(dvh.bayern\)](#)
- [Formulare / Forms B.Sc. Aerospace - TUM School of Engineering and Design - BayernCollab \(dvh.bayern\)](#)

If you have any **questions about study and examination matters**, please also take a look at the following link

[Prüfungsangelegenheiten / Examination Affairs B.Sc. Aerospace - TUM School of Engineering and Design - BayernCollab \(dvh.bayern\)](#)

# Contact persons

**Board of Examiners ASG:** Pema Mauser, M.A. [examination.asg@ed.tum.de](mailto:examination.asg@ed.tum.de)  
Daniel Hartenstein M.A.

**Final theses/research practice** [examination.asg@ed.tum.de](mailto:examination.asg@ed.tum.de)

**Coordination/academic advising B.Sc. Aerospace** (room MW0026b): Dr. Dimitri Franz [coordination.asg@ed.tum.de](mailto:coordination.asg@ed.tum.de)

**Coordination/academic advising M.Sc. Aerospace** (room MW2606): Daniel Hartenstein M.A.

**International Affairs and semester abroad** (zoom): Vilma Pyrhönen [as.international@ed.tum.de](mailto:as.international@ed.tum.de)

**Please inform yourself here about the current situation regarding consultation hours and consultations:**

[Ansprechpersonen / Contact Persons - B.Sc. Aerospace - TUM School of Engineering and Design - BayernCollab \(dvh.bayern\)](#)

**If you have any questions or problems, please get in touch with the Student Advisory Service and/or the Examination Office in good time for advice.**

# Questions and answers

## Electives:

**Q:** Would it be possible for the professors to offer a short introduction to their elective courses, as course descriptions in TUMonline can be rather uninformative?

**A:** Unfortunately, not. In case of questions, please contact the lecturers directly.

**Q:** Some electives were said to be project-oriented while others require an exam, will we know beforehand which assessment type an elective will have? How to check that on TUM online?

**A:** Check the module descriptions of the electives to get information about course contents and exam types.

**Q:** Where are the lab courses going to take place?

**A:** Depending on the chair, either in Garching (~aero) or Ottobrunn (~space).

**Q:** Can we do two lab courses in the fifth semester?

**A:** Yes, provided they are offered in this semester (some courses are only offered in summer, and some only in winter semester).

# Questions and answers

## Engineering Project:

**Q:** Is it possible to suggest an individual topic to the professors?

**A:** Yes, this is possible if the professor agrees to the topic.

**Q:** Is there a deadline for the registration of topics?

**A:** The timetable states that the Engineering Project is to be taken in the 5th semester. But you may attend it earlier or later. There is no deadline for the registration in TUMonline, except for the one that applies to all exams. Students have to register for it via TUMonline since it is a module exam like any other exam.

**Q:** Is it possible to suggest a theme/topic as a group/team of students?

**A:** The professor has to decide whether this is possible: It is to be clarified between students and the respective professor, who will also set the limit of participants.

**Q:** Is there a list of topics?

**A:** We are working on some kind of overview.



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