



TUM School of Engineering and Design
Technical University of Munich

B.Sc. Aerospace:

Electives and lab courses in semesters 5 and 6
Engineering project
Internship

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Electives

Area	Credits
(1) Engineering electives	20
(2) Engineering supplementary courses	6
(3) Free electives	5

(1) Engineering electives

- **Three sub-areas**

- System elective
- Modeling elective
- Optional engineering elective

- **Rule:**

You must choose at least **one module from sub-area system and one module from sub-area modeling**

- **What would be good** (= optional, but suggested!):

Try to choose modules with contents from two of the following subject areas:

- System
- Dynamics
- Propulsion

These modules can be chosen from all three sub-areas (system; modeling; optional)

Engineering electives cont'd

- **Note:**
 - Rule above entails that you always fulfill the systems suggestion automatically
 - Some modules have hints about their subjects areas in their names (e.g. „Aeronautic Propulsion Systems“; „Computational Aerodynamics“)
 - Some modules mightn't fit into any of these subject areas
 - In case you're unsure: Ask the resp. Lecturer
- Typically, each module is worth 5 credits -> pass four modules to complete this elective area
- **Optional engineering electives:** Possibility of having 5 credits from other universities – esp. exchange semester(s) – recognised, as long as course contents are from engineering science (= not necessarily aerospace)

(2) Engineering supplementary courses

- Supplement the basic knowledge/competencies acquired by obligatory modules from semesters 1 to 4
- Typically, each module is worth 3 credits -> pass two modules to complete this elective area
- **NB:** Engineering contents, so soft skills courses etc. (e.g. from the Center for Key Competences) are excluded
- Possibility of having 6 credits from other universities – esp. exchange semester(s) – recognised, as long as course contents are from engineering science (= not necessarily aerospace)

(3) Free electives

- Modules can be from:
 - Any School/Department of TUM
 - Soft skills or foreign language courses (NB: language courses must deal with languages that are **not** among your native languages)
 - From other universities, esp. from exchange semester(s)
- For more information:
 - 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
 - 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/>

Aerospace Lab Courses

Area	Credits
Lab course I	9
Lab course II	

- Introduction to practical methods in engineering
- Projects in small groups
- **Rule:**

You must choose **one module from lab course I** and **one module from lab course II**

Open-ended module catalogues

- You can apply to the board of examiners for inclusion of modules from other [ED departments](#) in the catalogues of
 - Optional engineering electives
 - Supplementary courses
 - Lab course II (NB: modules must be of the type „lab course“!)
- Applications have to be made via e-mail to the examination office: examination.asg@ed.tum.de
- **Deadlines** for application are:
 - **01 March** for inclusion of modules in upcoming **summer semester**
 - **01 September** for inclusion of modules in upcoming **winter semester**
- In the e-mail, please include:
 - Module number and title
 - Area in the B.Sc. Aerospace curriculum where you suggest the module should be included
- NB: Solely the board of examiners will decide whether modules can be included or not

Important to know

- The elective areas contain many modules that are also part of the M.Sc. Aerospace curriculum, but are suitable for advanced Bachelor's level
- You're free to choose these modules
- **But:** If these Master's modules contribute to your Bachelor's degree (i.e. credits and marks), you **cannot** choose these same Master's modules in the M.Sc. Aerospace programme!
- You can check with 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“)

Also good to know

- You're allowed to attend modules from the M.Sc. Aerospace programme as free registration courses if the following conditions hold:
 - you're in your 6th semester
 - You've got at least 150 credits

That way you can already pass some Master's modules during your Bachelor's studies.

Once you're enrolled in the M.Sc. Aerospace programme you can have these modules recognised for your Master's degree.

LRG0202 Engineering Project

- Ideally to be completed in 5th semester, but can be done in 4th or 6th semester as well. However, knowledge of contents of semesters 1 to 4 recommended
- Practical (research) project with a chair from Aerospace & Geodesy
- Group projects possible (ask lecturers)
- Information about (thematic) topics offered by each chair forthcoming in wiki. Topics may include:
 - Next Space Station
 - Autonomous Attitude Control for CubeSats
 - Munich Drone Simulator in Unreal Engine
 - AI Hardware Exploration - Computer Vision using NVIDIA Jetson

Questions and answers

Internship:

Q: Can we dedicate an entire semester to a full-time internship? How does it work with the required credit limit when one takes a "Free Semester/Urlaubssemester"?

A: Yes, you can take a leave of absence to do the internship. During a leave of absence you cannot write regular exams, just repeat exams. More information is [here](#).

Q: Where can we apply for a leave of absence ("Urlaubssemester") semester?

A: TUM Center for Study and Teaching (<https://www.tum.de/en/studies/during-your-studies/organizing-your-studies/leave-of-absence#>)

Please note: A total of 2 leave of absence semesters can be applied for during your B.Sc. Aerospace Program, provided you have proof of reasons which apply to a leave of absence application.

Q: Is it possible to combine the pre-internship with the 5th semester internship and just do 14 weeks of student work?

A: Yes, you may combine pre-internship and engineering internship and do 14 weeks in a row.

Q: Does HiWi work count for internship requirements?

A: No.

Q: What does the field "Service/Operations" entail?

A: Support and maintenance of complex equipment.

Q: When exactly are we supposed to do our internship?

A: At the latest, you have to submit the proof for the internships when you want to register for your Bachelor's Thesis.

Questions and answers cont'd

Q: The Project Seminar vs. the Internship? What's the difference?

A: The project seminar is held at an ASG chair, the internship has to be done in industry. The project seminar really is just a fall-back option for those who can't find a place for internship with a company.

Q: Can we do an internship/working student job in the fields of electrical or mechanical engineering as well or must it be something related exclusively to aerospace?

A: No, it does not have to be related to aerospace engineering.

Q: In which language do internship certificates have to be confirmed?

A: English or German

Q: The internship (6 weeks) if taken during the semester break, collides with the 1st week of semester studies when returning to the semester curriculum.

A: Students doing an internship will most likely be able to attend the courses also during their second week after semester start.

Q: Why is a semester leave necessary if the internship is mandatory?

A: A semester leave is not always necessary, depending on the internship, options as a working student and prior planning of an internship within the semester break (6 week internships) are possible. We recommend to start looking into internship options as soon as possible after starting your studies. Also, students should take into account that internships in high profile companies may be difficult to get into for a short term internship. Hence, realistic options should be considered.

Questions and answers cont'd

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: I don't think so. 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: On Garching campus.

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

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

Questions and answers cont'd

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 the topic „setter“ specified?

A: Please find the topics and thus topic setters (supervisors) under following link:

<https://wiki.tum.de/pages/viewpage.action?pageId=875823751#Studierende/StudentsB.Sc.Aerospace-InformationonthemoduleLRG0202EngineeringProject>

Q: Which topics are available?

A: For available topics, please check the [Wiki](#).

Questions and answers cont'd

Other:

Q: What is the plan for the upcoming semesters with regard to Ottobrunn and Garching? How many days are on each campus? How will that conflict with electives?

A: From WS 23/24, all courses will be held on Garching campus. Elective courses may conflict (see semester schedule in TUMonline for details). In this case you'll have to decide which course you wish to attend.

Q: What is the earliest we can start our Bachelor's Thesis (BT)?

A: This condition must hold: Minimum of 120 credits, 99 of which must be from mandatory modules. There'll be a separate info session dedicated to the BT in the upcoming winter semester.

Q: Is it possible to take/ choose „**free elective**“ courses outside the ED School/ Department?

A: Yes, it is a free elective.

Q: Can you register for M.Sc. Modules during any semester (prior to the 6th semester)?

A: According to § 46a Academic and Examination Regulations for B.Sc. Aerospace, students are allowed to attend modules from the M.Sc. Aerospace programme as free registration courses if the following conditions hold:

They are in their 6th semester;
They've got at least 150 credits.

However, the examination office ASG will not monitor whether students who register for M.Sc. modules comply with these conditions.



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