

Department of Aerospace and Geodesy

Welcome to the Presentation

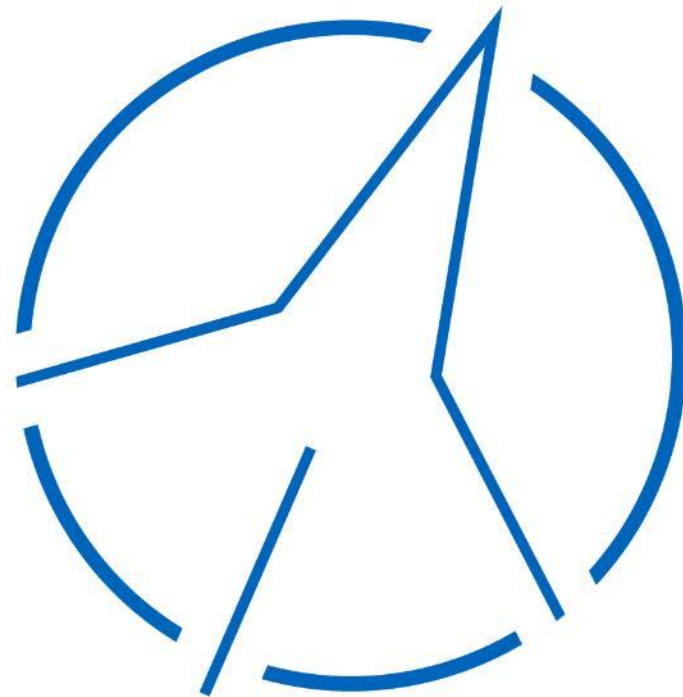
for

Students of the Master's

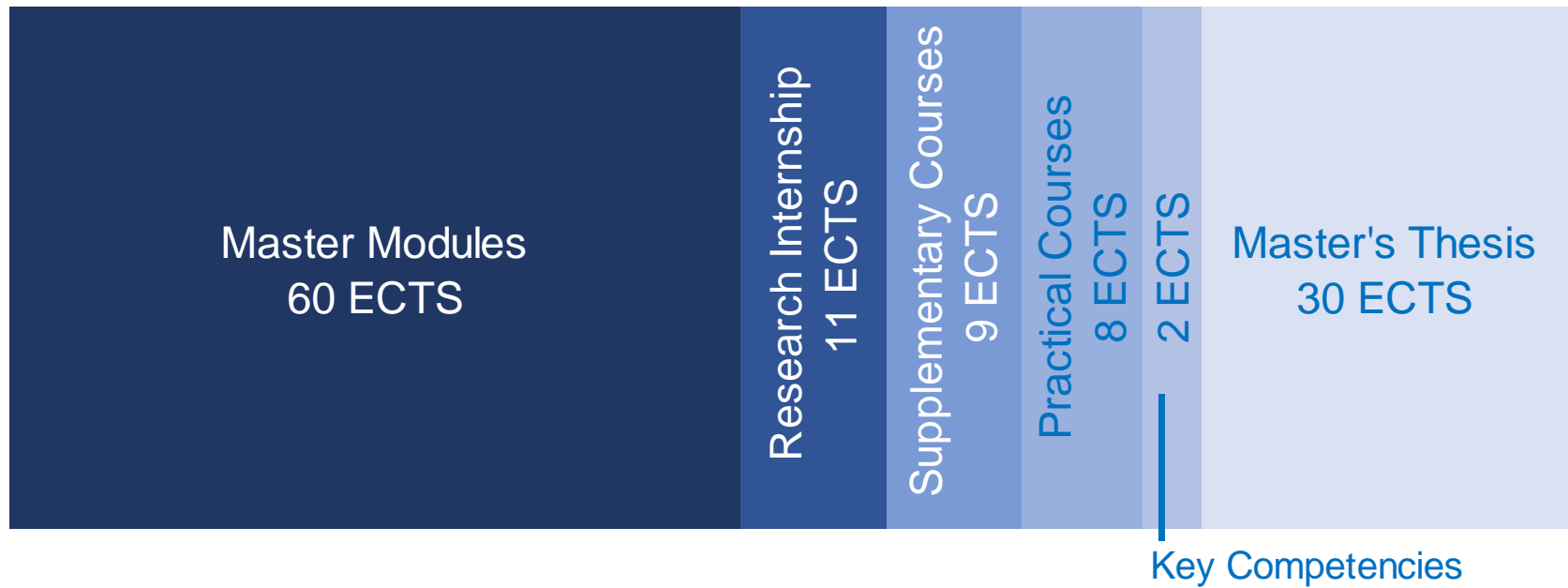
Degree Program M.Sc.

Aerospace

(M.Sc. AS)



Structure of the degree program



Curriculum (example)

Possible arrangement of modules over four semesters (**not obligatory**):

Semester 1		Semester 2	
Master Module 1	5 ECTS	Master Module 4	5 ECTS
Master Module 2	6 ECTS	Master Module 5	5 ECTS
Master Module 3	7 ECTS	Master Module 6	5 ECTS
Research Internship	11 ECTS	Master Module 7	5 ECTS
Practical Course 1	4 ECTS	Practical Course 2	4 ECTS
		Supplementary Course 1	3 ECTS
		Supplementary Course 2	3 ECTS
Semester 3		Semester 4	
Master Module 8	5 ECTS	Master's Thesis	30 ECTS
Master Module 9	5 ECTS		
Master Module 10	5 ECTS		
Master Module 11	5 ECTS		
Master Module 12	5 ECTS		
Supplementary Course 3	3 ECTS		
Key Competencies	2 ECTS		

1. Master Modules

- Master modules can be chosen from up to 7 subject areas:

Areas of core competence (electives)

- (1) Total systems** (e.g. design of an aircraft, spacecraft or helicopter)
- (2) Propulsion systems** (e.g. motor, flight power unit and gas turbine, space craft power unit)
- (3) Fluid dynamics/aerodynamics** (aerodynamics of aircraft, aeroelastics, aeroacoustics)
- (4) Structure** (e.g. finite elements, design and construction of composite structures, fibre-, matrix- and composite materials together with their characteristics)
- (5) Dynamics and control technology** (e.g. helicopter flight physics, orbit and flight mechanics)

Additional competencies (electives)

- (6) Course-specific modules** → individual aerospace engineering profile
- (7) Engineering science flexibilization** → e.g. engineering modules from other universities

Master Modules cont'd

Core areas (1) – (5):

5 credits each → at least 1 module from each core area (1) to (5) has to be passed
 Σ 25 credits

Additional competencies:

(6) Course-specific modules: max. 35 credits

(7) Flexi: max. 15 credits

Σ 60 credits

→ 25 credits from core areas, remaining 35 credits can be freely chosen from (1) to (7)

→ **NB: You must pass 1 module from core areas (1) to (5) within your first two semesters**



2. Supplementary Courses

- From aerospace and other TUM engineering and natural science disciplines
- Sharpening of individual profiles
- Insight into research trends and professional fields for aerospace engineers

→ \sum 9 credits (= 3 modules)



3. Practical Courses

- Introduction to practical methods in engineering
- Projects in small groups
- E.g.: CAD in Aircraft Design CATIA V5; Hypervelocity Techniques...

→ Σ 8 credits (= 2 modules)

4. Research Practice (*Forschungspraxis*)

Choose 1 from

- **LRG0002 Term paper:**
Independent writing of a scientific paper on engineering problem
Individual support by supervisor
- **LRG0003 Team project:**
Working on a single project within a larger project on which several students are working
Supervision of the team by examiner
- **LRG0004 Research internship (NB: *not* an industrial internship!):**
Written documentation about an engineering problem in the form of a report or a scientific poster and presentation of the results

→ 11 credits

More information: <https://www.lrg.tum.de/en/flr/study-programs/current-students/forms-downloads/>

5. Key Competencies

- Choose from a large number of courses: Soft skills, applied ethics, foreign language courses etc.
- Note: language courses must deal with languages that are **not** among your native languages

→ 2 credits

For more information:

- Center of Key Competencies: <https://www.zsk.mw.tum.de/en/home/>
- Munich Center for Technology in Society/WTG@MCTS: <https://www.cvl-a.mcts.tum.de/lehrveranstaltungen/>; <https://www.cvl-a.mcts.tum.de/english-speaking-seminars/>
- TUM Language Center: <https://www.sprachenzentrum.tum.de/en/homepage/>



6. Master's Thesis

- written scientific paper, to be completed within **6 months**
- Oral presentation (no grade)

- Recommended: **last examination** of study program
- Note: admission possible when at least 80 credits obtained

→ **30 credits**

Master's Thesis cont'd

Important:

- Enrolled at TUM throughout work on thesis
- No semester on leave possible during work on thesis
- Deadline for submission extendable for at most 3 months (**with application**)
- In case of illness: deadline will be extended for duration of illness (**with application**)

→ Applications must be handed in at the board of examiners **before** deadline of submission is reached

→ In case of illness you need to submit a medical statement by a doctor

Master's Thesis cont'd

- Thesis supervisors: Profs at the Department of Aerospace and Geodesy
Profs giving courses in master modules (1) to (6)
- Deadline for marking: ~ 2 months
- Oral presentation: If after submission of Master's thesis:
date of presentation = graduation date

→ Generally: date of last examination is the date of your graduation

Master's Thesis cont'd

- Admission to thesis:
 - Apply informally by e-mail to the LRG examination office for admission to the final thesis
 - The application must contain your name, your matriculation number, your course of study and the date on which you began your studies: studiendekanat@lrg.tum.de

- Submission of thesis:
 - To your supervisor
 - Either personally or online
 - **Due to corona: preferably online**
 - **NB:** If the deadline for submission falls on a Saturday, Sunday or public holiday, you can submit your MT the following working day

Overall grade

- Weighted grade average including
 - Master modules 60 credits
 - Research practice 11 credits
 - Master's thesis 30 credits
 - Supplementary courses 9 credits
 - Practical courses 8 credits
- Weighing according to the number of credits of graded modules

Key competencies have to be passed, but do not count for final grade

Registration for exams

- Registration for exams by yourselves via your curriculum support in TUMonline
<https://wiki.tum.de/pages/viewpage.action?pageId=12387040>
- At registration the exam can be assigned to subject areas of the program
- Registration periods:
 - - Winter semester: approx. Beginning of December – mid-January
 - - **Summer semester 2021: 17 May – 30 June 2021**

See also: <https://www.lrg.tum.de/en/flr/study-programs/current-students/examination-office/>

Guide for TUMonline: <https://www.lrg.tum.de/en/flr/study-programs/current-students/forms-downloads/>

Examination regulations

- **Cancellation of an exam registration:**

- possible until one week before the exam
- Cancellation by yourselves via TUMonline

- If there are any problems with the registration process → ask at LRG examinations office

→ Please de-register from an exam that you do not wish to attend

- **Withdrawal from exam (on day of the exam):**

- only possible for valid reasons for which you are not responsible (e.g. illness, accident, death in the family etc.)
- With application and submission of medical certificate at examinations office

Academic Progress Check (*Studienfortschrittskontrolle*)

- Monitors your academic progress per semester (cf. § 10 (4) APSO)
- The following minimum of credits is due

At the end of 3rd semester	30 credits
At the end of 4th semester	60 credits
At the end of 5th semester	90 credits
At the end of 6th semester	120 credits

- **NB: If you gain less than the specified number of credits/semester above you will fail your studies and will not be able to graduate**
- Exams that are not sat at the end of 6th semester are registered as fail

Auflagen – Additional requirements

- Students can be admitted to the program on the condition that they pass additional tests in order to prove their competencies in certain basic engineering subjects
- Tests have to **be passed within your first year of studies**
 - otherwise you will get exmatriculated and cannot finish your degree at TUM

Auflagen tests include:

- LRG0220 Fundamentals of mathematics
- LRG0221 Engineering mechanics 1 + 2
- LRG0222 Engineering mechanics 3
- LRG 0223 Fundamentals of materials science
- LRG0224 Basic course thermodynamics
- LRG0225 Basic course fluid mechanics
- LRG0226 Basic course automatic control
- LRG0227 CAD/Construction and machine elements

→ **these tests are not modules, hence there are no lectures**

Auflagen – Additional requirements cont'd

- Test are held together with tests for aptitude assessment
- Failed tests can be repeated once **within first year of studies**

- Dates for tests:
 - winter semester: March
 - summer semester: August – **Summer semester 2021: 19 and 20 August 2021.**

- Those of you who have been assigned Auflagen tests will be informed about registering for these in due course

- More information, including dates for tests, mock exams and levels of expectation:
<https://www.lrg.tum.de/en/flr/ma-aerospace/>



Double Degree Program

With **ISAE SUPAERO** in Toulouse - École Nationale Supérieure de l'Aéronautique et de l'Espace

<https://www.isae-supaero.fr/en/>

Two tracks:

- **M.Sc. Aerospace Engineering**
2 semesters at TUM, 2 semesters at ISAE
language of instruction: English
- **Ingénieur ISAE-SUPAERO** (Diplôme d'Ingénieur)
2 semesters at TUM, 4 semesters at ISAE
language of instruction: French

Double Degree Program cont'd

Requirements:

- Good/very good Bachelor's degree – 2.5 or better
- Good/very good command of English – level B2 or better
- For Ingénieur ISAE: Good/very good command of French – level B2 or better
- First year of M.Sc. AS completed prior to stay abroad

Financing:

- Erasmus+: EUR 200/month

Application deadline: mid-December – mid-January for beginning in winter semester at ISAE

For more information about application process and requirements, see:

<https://www.lrg.tum.de/en/flr/study-programs/international-study-programs/>

SS 2021 – Corona and courses on campus

- Most courses are held online
- Some Practical courses are held on-campus
- Important:
 - Keep distance (1,5 m) to others
 - Wash hands before entering the seminar room
 - Wear mask throughout
 - Wearing masks in TUM buildings is mandatory
 - **You should register in TUMonline for any course you wish to attend**
 - Each room is equipped with QR-code for registering

More information and updates: <https://www.tum.de/en/about-tum/news/coronavirus/studies/>



Examination Office – Board of Examiners

Secretary to the board of examiners /
programme coordinator

Daniel Hartenstein, M.A.
Phone 089/289 – 55504
studiendekanat@lrg.tum.de

Thesis registration /
internship office

Isabelle Canchila Acuña, M.A.
Phone 089/289 – 55507
studiendekanat@lrg.tum.de

Office hours:

- Normally: Campus Garching: **Thursdays, 08:00 – 11:30, room MW2602**
- **During pandemic: all office hours cancelled. Contact via e-mail/phone**



Find more information and all relevant application forms here:

<https://www.lrg.tum.de/en/flr/study-programs/current-students/examination-office/>

<https://www.lrg.tum.de/en/flr/study-programs/current-students/forms-downloads/>



Thank you very much for your attention

and

Alle the best for your studies at TUM!