Department of Aerospace and Geodesy

Presentation
for
Students of the Master‘s Degree Program M.Sc. Aerospace
(M.Sc. AS)

Summer semester 2020
Structure of the degree program

Note: From summer semester 2020, there is no workshop to be done with the Master’s Thesis
## Curriculum (example)

Suggested arrangement of modules over four semesters:

### Semester 1

<table>
<thead>
<tr>
<th>Module</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Module 1</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 2</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 3</td>
<td>5</td>
</tr>
<tr>
<td>Research Practice</td>
<td>11</td>
</tr>
<tr>
<td>Practical Course 1</td>
<td>4</td>
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</tbody>
</table>

### Semester 2

<table>
<thead>
<tr>
<th>Module</th>
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</thead>
<tbody>
<tr>
<td>Master Module 4</td>
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<tr>
<td>Master Module 5</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 6</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 7</td>
<td>5</td>
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<tr>
<td>Practical Course 2</td>
<td>4</td>
</tr>
<tr>
<td>Supplementary Course 1</td>
<td>3</td>
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<tr>
<td>Supplementary Course 2</td>
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</table>

### Semester 3

<table>
<thead>
<tr>
<th>Module</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Master Module 8</td>
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<tr>
<td>Master Module 9</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 10</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 11</td>
<td>5</td>
</tr>
<tr>
<td>Master Module 12</td>
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<tr>
<td>Supplementary Course 3</td>
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<tr>
<td>Key Competencies</td>
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</table>

### Semester 4

<table>
<thead>
<tr>
<th>Module</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Master's Thesis</td>
<td>27</td>
</tr>
<tr>
<td>Workshop &quot;Writing your Thesis&quot;</td>
<td>3</td>
</tr>
</tbody>
</table>
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):
Basically, each module has 5 credits. You have to chose at least one module from core areas 1 to 5.
≥ 5 credits each (= 1 module)
∑ 25 credits

Additional competencies:
You’re free to chose from core areas 6 an/or 7.
(6) max. 35 credits
(7) max. 15 credits

∑ 60 credits

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

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

→ ≥ 9 credits: You have to chose modules with a total of at least 9 credits.
3. Practical Courses (lab courses)

- Introduction to practical methods in engineering
- Projects in small groups

→ ≥ 8 credits: You have to choose modules with a total of at least 8 credits.
Choose 1 from

- Term paper (*Semesterarbeit*)
- Team project (written)
- Research internship (written)

→ 11 credits

- This is a written assignment to be completed within 6 months
- Find yourselves a supervisor among lecturers that are giving courses in core areas 1 to 6
- For more information on contents, see: https://www.lrg.tum.de/en/flr/study-programs/current-students/forms-downloads/
5. Key Competences

• Chose from a large number of courses: Soft skills, applied ethics, foreign language courses etc.

→ ≥ 2 credits

For more information:

• Munich Center for Technology in Society/WTG@MCTS (https://www.cvl-a.mcts.tum.de/lehrveranstaltungen/)
• TUM Language Center (https://www.sprachenzentrum.tum.de/en/homepage/)
6. Master‘s Thesis

• Required module

- Master‘s thesis:
  written scientific paper | to be completed within 6 months
  → 30 credits

- Oral presentation (no grade), normally given after submission of Master‘s thesis

Σ 30 credits
Master‘s Thesis cont‘d

• Recommended: last examination of study program
• Note: admission possible when at least 80 credits obtained (with application to the board of examiners)

• You have to be enrolled throughout work on thesis
• No semester on leave possible
• Deadline for submission extendable when it’s impossible for you to finish on time, due to external factors for which you’re not responsible (with application)
• In case of illness deadline can be extended for duration of illness (with application)

→ Important: Applications must be handed in at the board of examiners before deadline of submission is reached
Master’s Thesis cont’d

- Thesis supervisors: Lecturers at the Departments of Aerospace and Geodesy and Mechanical Engineering or at other departments involved in teaching courses in core areas 1 to 6

- Deadline for marking: 2 months

- Oral presentation: If after submission of Master's thesis, date of presentation = graduation date

- Submission of Master’s thesis: Submission of all copies of your thesis at your supervisor
Registration for examinations

- 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 period:

  For summer semester 2020: 25.05.2020 – 30.06.2020

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

• Withdrawal from exam:
  - With application and submission of medical certificate at examinations office
Recognition of credits

• Modules can be recognised if their contents are equivalent

• This includes:
  (1) Modules that were **not** passed at TUM
      (national/international universities)

  (2) Modules that were passed at TUM
      (change of study program; free modules from bachelor’s degree program)

• Enrolment in master’s degree program is mandatory

Deadlines:
• Application for recognition is possible only once within the first year of study
• Double Degree: application in each semester
• During stay abroad (exchange students): Application is possible within the consecutive semester
Recognition of credits cont‘d

• Submission of transcript of records/Bachelor‘s graduation certificate, original and one copy
• Submission of description of module (credits; kind of examination) as a copy

• Date of submission of application form and documents decisive for deadline

• Note: when more than 21 credits are recognised, you will be assigned to a higher semester (repeat examinations and internships are excluded)

Application forms for recognition of credits on the website:

https://www.lrg.tum.de/flr/studium/formulare-und-downloads/
Academic Progress Check (Studienfortschrittskontrolle)

- Monitors your 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

- Exams that are not sat at the end of 6th semester are registered as fail
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

- **Note:** practical and supplementary courses **do** count for overall grade
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
• Good/very good command of French – level B2 or better (for Ingénieur ISAE)
• First year of M.Sc. AS completed prior to stay abroad

Financing:
• Erasmus+: EUR 200/month

For more information about application process and requirements (application deadline is beginning of February):

https://www.lrg.tum.de/en/flr/study-programs/international-study-programs/
Examination Affairs – Board of Examiners

- Secretary to the board of examiners and course coordinator M.Sc. Aerospace

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  studiendekanat@lrg.tum.de

Office hours:

Campus Garching: **Thursdays, 08:00 – 11:30, room MW2614**

Please note: Due to the current corona situation there are no office hours in the foreseeable future. You can always contact me via e-mail, though.
Find more information and all relevant application forms here:

https://www.lrg.tum.de/flr/studium/pruefungsangelegenheiten/

https://www.lrg.tum.de/flr/studium/formulare-und-downloads/
All the best for your studies at TUM!