Master of Science
Embedded Systems Engineering

Faculty of Engineering
University of Freiburg
Who am I?

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  Changes are announced here:
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I’ll show you…

1. How to organize your studies
2. Some explanations about administrative stuff
3. Some important rules regarding exams
4. Where you can get information and help
PART 1
SYLLABUS / STUDY PLAN
The Master program ESE is…

- generally an international study program
  - Most courses are offered in English
  - But some elective courses in German only
- a mixture of compulsory courses (to build a common ground for the students) and electives
- flexible: The study plan provides the frame, which you fill up with courses
  (→ when you do them is up to you)
- Customizable: A big variety of elective courses in Concentration areas and Personal Profile allow for individual specialization
Upcoming: New exam regulations with even more flexible syllabus

- New version of exam regulations with new syllabus starting in winter semester 2021/22
- Don’t get too set on the current curriculum, as we expect you to switch to the new version
- Details will follow this semester
  (Examples for study plans, English translation of exam regulation, information on the procedure to switch to new curriculum etc.)
- Important to know now: Every course you take now will still exist in the new regulations
Module types/Courses in the ESE program

- **Module Components / Courses**
  - Lectures – German: Vorlesung (V)
  - Exercises – German: Übung (Ü)
  - Lab courses – German: Praktikum / Praktische Übung (Pr)
  - Seminars – German: Seminar (S)
  - Projects – German: Projekt (*also* Pr)
Graded assessments or pass/fail

- **Coursework or pass/fail assessments** (“Studienleistungen”, SL)
  - Exercises, reports, (mid-term) exams…
  - May be part of a module (for example the exercise sheets, then it’s called coursework) or the overall assessment to complete a course successfully (=pass or fail assessment; can be an end-of-term exam, even) *(in German both is called “Studienleistung”…)*
  - May be graded, or only “pass” or “fail”
  - Not part of the final grade

- **Graded assessments / Exams** (“Prüfungsleistungen”, PL)
  - Written or oral exams, reports, presentations, creation of software or demonstrators
  - Strict rules/regulations and very limited number of attempts
  - Always graded and always counts into the final grade
## Structure of the study program (when starting in summer term)

<table>
<thead>
<tr>
<th>Module / Area</th>
<th>Semester</th>
<th>ECTS credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kursvorlesung Informatik („advanced lecture“)</td>
<td>1 or 2</td>
<td>6</td>
</tr>
<tr>
<td>Kurs- or Spezialvorlesung Informatik</td>
<td>1 or 2</td>
<td>6</td>
</tr>
<tr>
<td>Assembly and Packaging Technology (English) / Aufbau- und Verbindungstechnik (German)</td>
<td>1 / 2</td>
<td>5</td>
</tr>
<tr>
<td>Sensorik und Aktorik (German) / Sensors (English)</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Cyber Physical Systems – Discrete Models</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Microelectronics</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Modelling and system identification</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Concentrations area 1</td>
<td>1, 2 or 3</td>
<td>At least 15</td>
</tr>
<tr>
<td>Concentrations area 2</td>
<td>1, 2 or 3</td>
<td>At least 15</td>
</tr>
<tr>
<td>Personal Profile</td>
<td>1, 2 or 3</td>
<td>At least 15</td>
</tr>
<tr>
<td>Master thesis + Presentation</td>
<td>4</td>
<td>27 + 3</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

At least 51 overall
Mandatory Courses

5 specific courses
- CPS – Discrete Models
- Sensors
- Assembly and Packaging Technology
- Micro electronics
- Modelling and system identification

Plus
- 1 advanced lecture ("Kursvorlesungen") in CS
- 1 advanced lecture or Specialization course in CS

- Big selection of specialization courses from CS
- Lots of them and the courses from MSE can be found in one or the other concentrations area
- All of them can also be chosen in your personal profile
- Keep this in mind when registering for a course in HISinOne
Regarding the elective areas: a general overview

**Concentration areas**

- Sensors and Actuators
- Design and Simulation
- Circuits and Systems
- Reliable Embedded Systems
- Distributed Systems
- Robotics and Computer Vision

**Select one = Concentration 1 (at least 15 ECTS)**

**Personal Profile**
(at least 15 ECTS)

**Select one = Concentration 2 (at least 15 ECTS)**

**At least 51 ECTS**
Concentrations and Personal Profile: Which and how many courses to choose?

- Choose two concentration areas (one from each group) and do courses \( \geq 15 \) credits
- In your Personal Profile select courses \( \geq 15 \) credits from all lectures, seminars or lab courses from the Master's programs for
  - MSE / MST
  - Computer Science
  @ the Faculty of Engineering
- You may take as many courses as you need to fulfill the constraints, but no more (additional)!
- You may take at most 2 seminars overall; the number of lab courses is not limited
- Study Project (from Computer Science, 18 ECTS) only available in Personal Profile
- There is a video tutorial explaining the booking procedure for seminars. Please check that out if you have questions about this topic.
PART 2
ADMINISTRATIVE THINGS
Some practical advice, general facts and recommendations

- Most courses are offered every other semester (i.e. once a year); some can be held more irregularly; should be mentioned in the module handbook (see HISinOne)
- Overlapping courses... With the amount of courses and the flexible curriculum we offer, this just happens. Basically: Deal with it! (Meaning: Choose one course for this semester, do the other one in year)
- Be aware that you might need to adapt your original study plan
Some practical advice, general facts and recommendations

- Usually no dependencies regarding order of courses
  - Nevertheless, check with lecturers for appropriate combinations or recommended order of courses
- Most prerequisites stated in the course catalog are recommendations, they are not mandatory; but some are…

*Just read what is said in the description!*
Conditional admission – What does this mean?

- Conditions have to be fulfilled in addition to the normal Master’s curriculum → likely to extend your study time
- You have to complete the required modules by the end of the second semester. They should be your top priorities! (Especially in case of course collisions/overlaps)

- You will be automatically registered for these courses, but have to register for the exams yourself
  → Registration for these exams has to be done via PDF form: https://www.tf.uni-freiburg.de/de/studium-lehre/a-bis-z-studium/dokumente/Examregistration.pdf
- Exams required for conditional admission can only be repeated once.
Advice for your next steps

- Study the course catalog / planner of studies (What courses are offered right now?)
- Generally, check out a few more courses than you intend to complete in the given semester
- Register (via HISinOne → “Booking of courses”) for the courses you want to take as soon as possible
- Information on dates and deadlines for course booking: https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates → Booking deadlines for Bachelor and Master courses
- Read the official exam regulations! (= terms and conditions of your study program)
Registering for/ booking of courses

- Have a look at your planner of studies
  https://campus.uni-freiburg.de

- For information on handling the Campus-Management-System, watch the tutorial/instruction video:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/information-for-new-students-summer-semester
  → Further information and tutorials
  → MSc ESE - Course booking in HISinOne (English)

- If you have questions or made a mistake while booking: Contact us! (Ms. Moses in the Dean‘s office:
  moses@tf.uni-freiburg.de or myself)  
  (Hint: Screenshots are really helpful for us!)
What to do if you forgot to register/book a course

Be aware:
Different course types have different deadlines!

If you forgot to book a course:

- Contact the lecturer and ask if there are still seats available and if it generally makes sense to start late
- The examination office can’t help you with this!

*Please note: Registration for an exam in HISinOne can be confusing if you did not book the course beforehand!*
PART 3
RULES FOR EXAMINATIONS
Registration for exams / graded assessments (PL)

- It’s a second, independent step from booking the course. It’s **not** done automatically!
- The procedure is *similar* to booking the courses. For a how-to, see [https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/de-registration-of-exams](https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/de-registration-of-exams)
- **Deadlines** for the registration (and de-registration) for exams are also mentioned on this website.
- Without registering for an exam you are not allowed to take it, so **do not forget!**
- To make sure you are correctly registered, we recommend saving/printing the pdf of the in HISinOne → My studies → My course enrollments and exam registrations
How to proceed if you failed an exam

- Number of attempts are limited:
  - 2 attempts for every exam / graded assessment (if needed)
  - In the new regulations, **2 oral or written exams** can be attempted **3 times**
- You are registered automatically for the repetition(s) and **cannot sign off**!
- Repetition exam will take place in the next semester.
- In the new regulations, you can **substitute 1 course** you failed the exam / graded assessment with another one (but it has to be done after the first attempt)
Improvement of a grade

- In the upcoming new regulations, you can improve the grade of 1 exam overall, that you did in your first year.
- This rule applies only to written or oral (not other kinds like homework or presentations).
- You have to take the "repetition" exam directly in the following semester.
- The examination with the better grade will be considered official.
- *Not all study programs have this option!*
Missing an exam: unexcused or authorized withdrawals

- If you do not attend an exam that you registered for, it counts as failed, unless you have a valid excuse.
- Valid excuses can be
  - Due to illness (→ doctor‘s note, use form „Application for Exam Withdrawal Approval Due to Illness“, see https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq)
  - Due to emergencies in family etc. (please contact examination office immediately)
  - Special circumstances due to the Coronavirus pandemic situation
Plagiarism is:
- Using someone else’s texts, pictures, reports, data, solutions, whatever….
- ... without citing the source

Sources include:
- Books, the internet, colleagues, …

To make it clear:
- Plagiarism is illegal!

The simple „if...then“ loop:
- If you plagiarize (once) → then you fail the course
- If you plagiarize repeatedly (twice) → then you are thrown out of the program and your academic career is over

Intellectual honesty is important!
PART 4
FINDING INFORMATION AND HELP
Students are responsible to stay informed

- We provide the necessary information through different sources:
  - Websites
  - Introductory events
  - Official documents (like exam regulations)
  - Information e-mails
    (Make sure to have access to your faculty user account and forward or use that e-mail address!)
- Students are expected to look for the information proactively
- „I did not know!“ is not accepted as a valid excuse!
Some useful links:

- Faculty of Engineering:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching

- Calendar, dates and deadlines:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates

- Program Website:
  https://www.tf.uni-freiburg.de/en/study-programs/embedded-systems-engineering/m-sc-embedded-systems-engineering

- Information for new students - summer semester
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/information-for-new-students-summer-semester
Problems with your studies?

- If you have any questions or problems:
  Act immediately and do not wait for the problem to disappear miraculously!

- Contacts & info sources:
  - Official information sources by university, faculty and study program (legal texts, websites)
  - Study advisors
  - Mentors
  - Lecturers / assistants
    (face-to-face or via e-mail)
  - Fachschaft TF (student committee of this faculty)
  - Information centers like the Student Service Center, Office of Student Services etc.
  - fellow students

- Contact information for advisory services at TF:
  [https://www.tf.uni-freiburg.de/en/study-programs/counseling](https://www.tf.uni-freiburg.de/en/study-programs/counseling)
When writing a mail to an advisor or the examination office…

- Sensible subject
- Use a greeting / salutation – we are not chatbots…
- Sign the email with your full name; your matriculation number is usually also helpful
- Use full names of professors, supervisors or lecturers (not only the first name)
- For a new topic: Write your own new mail and address it (correctly) yourself
Advising@Service Center Studium: ZSB / IAS @ SCS

Information

Clearing / first information
- Where to go to …?
- Whom to talk to if…?
- How do I…?
- daily info desk

Hotline
0761 / 203-4246

Advising

…on any topic concerning your studies
- confidential
- impartial
- professional
- open and scheduled consultation hours

Workshops

Smalls groups (mostly in German), topics such as:
- Doubts / hard choices
- Dealing with (study) stress
- Time and self-management
- Masters degree or job search?

www.zsb.uni-freiburg.de    www.ias.uni-freiburg.de
Where to get software you might need for your courses?

- The Computing Center (*Rechenzentrum*) offers lots of software and licenses like MATLAB, Mathematica or LabView:
  
  [https://www.rz.uni-freiburg.de/services/beschaffung/software](https://www.rz.uni-freiburg.de/services/beschaffung/software)

- For questions please contact [lizenzen@rz.uni-freiburg.de](mailto:lizenzen@rz.uni-freiburg.de)