

M.Sc. Microsystems Engineering

Faculty of Engineering
IMTEK
University of Freiburg

Albert-Ludwigs-Universität Freiburg



**UNI
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About me



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Consulting hours via phone: Tuesday & Thursday 9:30-11:30, on site:
best via prior appointment

More info on consulting hours and changes:

<https://www.tf.uni-freiburg.de/de/studienangebot/studienberatung>



Academic advisors

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Curriculum

New exam regulations introduced in WS 2021/22 (PO version 2021)



- A new version of the exam regulations with a new syllabus has been introduced in the last winter semester
→ Not every lecturer may be fully aware of the changes
- Differences to previous regulations; when talking to other MSE Master students without knowing which regulations they follow!

Some important terms I



Modules= building blocks of the syllabus

- Consist of various elements (different symbols/icons in study planner)
- Credits are given for the complete module, no „partial credits“

Courses in the MSE program:

- Lectures –Vorlesung(V)
- Exercises –Übung(Ü)
- Lab courses –Praktikum/ PraktischeÜbung(Pr)
- Seminars –Seminar (S)



Graded assessments or pass/fail:

Coursework or pass/fail assessments (“Studienleistungen”, SL)

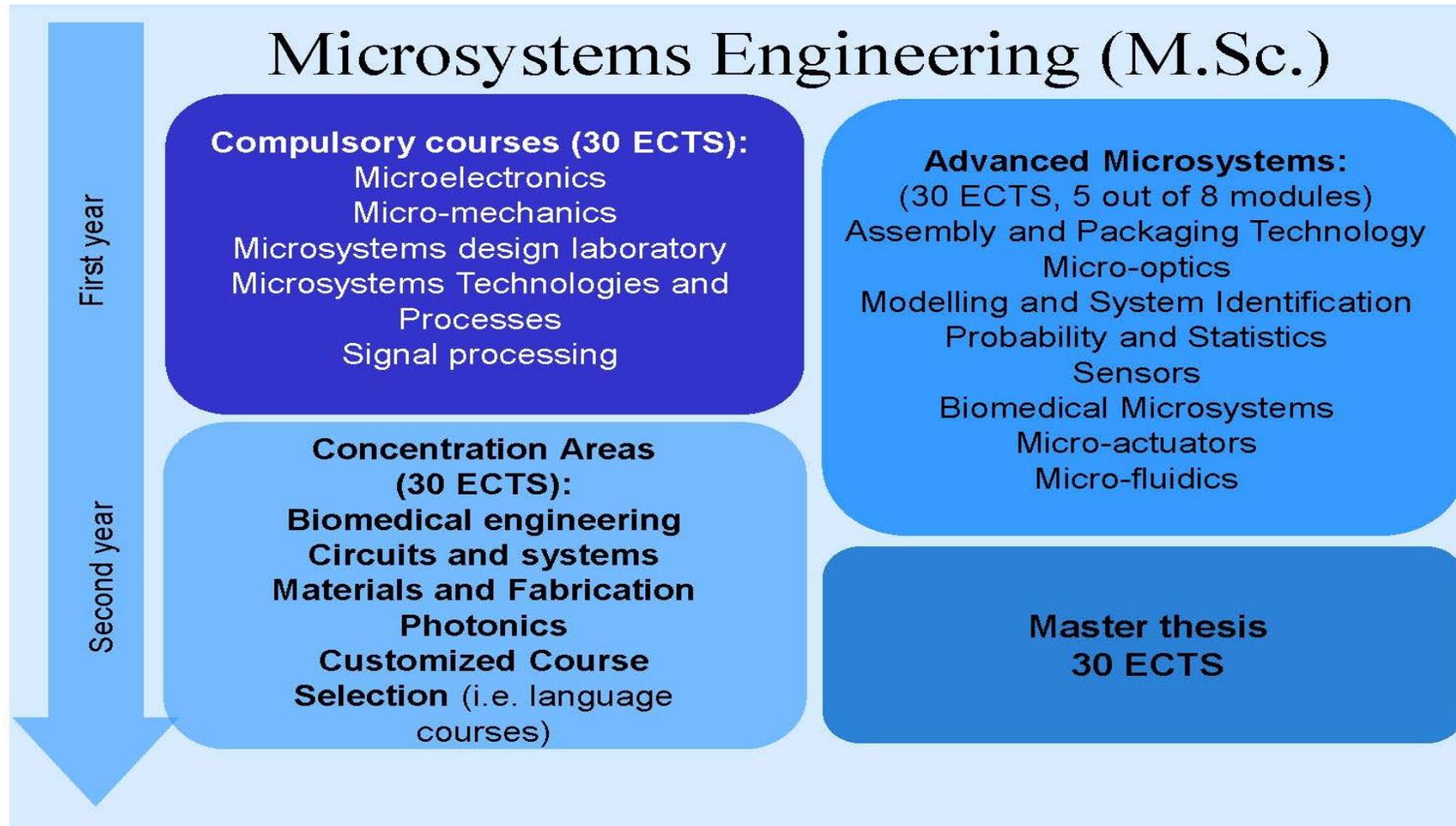
- Part of a module or final assessment
- May be graded, or only “pass” or “fail”
- Not part of the final grade
- No negative consequences if failed (apart from having to repeat → “time penalty”)



Graded assessments /Exams (“Prüfungsleistungen”, PL)

- Always graded
- Always counts towards the final grade
- Strict rules/regulations and very limited number of attempts

Structure of the curriculum



At a glance...



- **5 Compulsory courses= 30 ECTS**
- **Advanced Microsystems: 5 out of 8 modules= 30 ECTS**
- **Concentration Areas= 30 ECTS**
 - **Customized Course Selection = 9 ECTS**
- **Master's thesis=30 ECTS**
- You are not allowed to take more courses than necessary to meet these requirements
- In general, you have to plan so you hit the 90 credits exactly

Mandatory modules in MSc MSE



Module	Type	Exam	ECTS	Sem
Micro-electronics	Le+E	Written exam	6	1
Micro-mechanics	Le+E	Written exam	6	1
MST Design Laboratory I for Microsystems Engineering	La	Pass/Fail assessment (Studienleistung)	6	1
MST Technologies and Processes	Le+E	Pass/Fail assessment (Studienleistung) Written exam	6	1
Signal Processing	Le+La	Written exam	6	2
Master's Module (6 months)		Thesis + Presentation	27 + 3	4

Compulsory Electives: Advanced Microsystems

→ Choose 5 of 8



Module	Type	Exam	ECTS	Sem.
Assembly and Packaging Technology	Le+E	Written exam	6	1, 2 or 3
Micro-optics	Le+E	Written exam	6	1 or 3
Modelling and System Identification	Le+E	Written exam	6	1 or 3
Probability and Statistics	Le+E	Written exam	6	1 or 3
Sensors	Le+E	Written exam	6	1 or 3
Biomedical Microsystems	Le+E	Written exam	6	2
Micro-actuators	Le+E	Written Exam	6	2
Micro-fluidics	Le+E	Written Exam	6	2
Total to be selected			30	

Le = Lecture, E = Exercise, La = Lab course

Concentration Areas in MSE



- You have to choose **one area**
- The 4 Concentration Areas are:
 - Circuits and Systems (includes the old areas Circuits & Systems and Sensors & Actuators)
 - Biomedical Engineering (includes the old areas Biomedical Eng. and Lab-on-a-Chip)
 - Materials and Fabrication (includes the old areas Design & Simulation and Materials)
 - Photonics

Customized Course Selection



Instead of completing all 30 ECTS from your chosen concentration area, you can earn 9 ECTS in the Customized Course Selection

Here, you can choose from

- Pass-or-fail courses (*Studienleistungen*), for example scientific writing or project management in MSE
- **One** language course (esp. German courses from SLI for international students) (please note: **not** from the „Zentrum für Schlüsselqualifikationen / BOK area!)
- Selected courses from other departments /faculties, like from the Economics Department (*not in study planner –application required*)

Be aware that the rules regarding the Customized Course Selection are different in the ESE study program, when talking to other students or lecturers!

Concentration Areas + Customized Course Selection



Concentration areas (21-30 ECTS)	ECTS
Circuits and Systems	Students have to choose one concentration area
Materials and Fabrication	
Biomedical Engineering	
Photonics	
Total	
Customized Course Selection	ECTS
Courses from other faculties at the University of Freiburg, also courses on German language, scientific writing, project management	Students can chose → either 30 concentration or 21 concentration+9 CCS
Courses from the MSc MSE program	
Total	9

Optional specialization



You can choose to do a specialization in your study program (which will be shown on the final documents). There are 4 specializations available:

- Circuits and Systems
- Materials and Fabrication
- Biomedical Engineering
- Photonics

The requirements are:

- You have to take courses with **at least 30 ECTS** from the according specialization
- You have to do a **Master Thesis** with a related topic

Master's thesis



Exam regulations 2021

- Master thesis (27 ECTS) graded
- Colloquium (= Presentation/ Defense; 3 ECTS) graded
- Admission to thesis: you need at least **72 ECTS** credits
- Duration: 6 months

Part 2



Administrative „stuff“

Advice and recommendations I



- Most courses are offered every other semester (i.e. once a year), some might be held more irregularly; this should be mentioned in the module handbook (please see HISinOne or PDF)
- Overlapping of courses: with the huge amount of courses offered, this unfortunately happens
- Be aware that you might need to adapt your original study plan

Advice and recommendations II



- Usually no dependencies regarding order of courses
- However, 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 → please read the description!

Next steps...



- Study the course catalog / planner of studies (What courses are offered right now?)
- 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>
- If you have questions or made a mistake while booking: **Contact** Ms. Moses in the Dean's office: moses@tf.uni-freiburg.de or myself (*Screenshots are really helpful*)
- 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!*



Rules regarding examinations

More details will be offered by the examination office team in a presentation in a few weeks.

You'll receive an invitation e-mail in due course.

Registration: Exams/graded assessments(PL)



- This is another, 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/examinations>
- **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 please **do not forget!**
- To make sure you are correctly registered, we recommend saving/printing the pdf of the registration confirmation in HISinOne → My studies → My course enrollments and exam registrations

Failed an exam? How to go ahead...



- Number of attempts are limited:
 - 2 attempts for every exam / graded assessment (if needed)
 - **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
- You can substitute **1** course (from Advanced MSE or the concentration) you failed the exam/ graded assessment with another one (but it has to be done after the **first** failed attempt)

Grade improvement



- Repeating an exam that you have passed, to improve your mark, is possible in one module you did in your first year of studies here
- This rule applies only to written or oral exam (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

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 required, 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)

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 emails (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

Information resources



- 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/microsystem-engineering/m-sc-microsystems-engineering-en?set_language=en
- Information for new students <https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/information-for-new-students-summer-semester>
- A to Z –Study FAQ <https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq>

Problems?



If you have any questions or problems: please act or reach out as soon as possible, waiting will not make the problem go away.

- Contacts & information sources:
 - Official information sources by university, faculty and study program
 - Study advisors (Contact information for advisory services at TF: <https://www.tf.uni-freiburg.de/en/study-programs/counseling>)
 - Mentors
 - Lecturers / assistants (face-to-face or via e-mail)
 - Fachschaft TF (student committee of this faculty)
 - Information centers like the Student Service Center, IAS, Office of Student Services etc.
 - fellow students

When writing mails to an advisor, coordinator or the examination office...



- Use a(n) (appropriate) subject
- Use a greeting/salutation
- Sign the email with your full name; your matriculation number is also helpful
- Use full names of professors, supervisors or lecturers (not only the first name)
- For a new topic: Write a new mail and address it (correctly) yourself
- If it is urgent, please indicate this in the subject line-our responses to mails not classified as urgent can take quite a while and we try to prioritize



Any questions? Please do not hesitate to contact me via studiengangkoordination.mst@imtek.uni-freiburg.de

