universitätfreiburg

## M.Sc. Microystems Engineering

Introduction

Faculty of Engineering IMTEK Svenja Andresen, Programme Coordinator Freiburg, 12/10/2023



#### **About me**

#### **Svenja Andresen**

- Programme Coordinator for Microsystems Engineering
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- studiengangkoordination.mst@imtek.uni-freiburg.de

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

More info on consulting hours and changes: <a href="https://www.tf.uni-freiburg.de/de/studienangebot/studienberatung">https://www.tf.uni-freiburg.de/de/studienangebot/studienberatung</a>



#### **Academic Advisors**

Dr. Jochen Kieninger

Phone: +49 761 203 7265



**Dr. Oswald Prucker** 

Phone: +49 761 203 7164

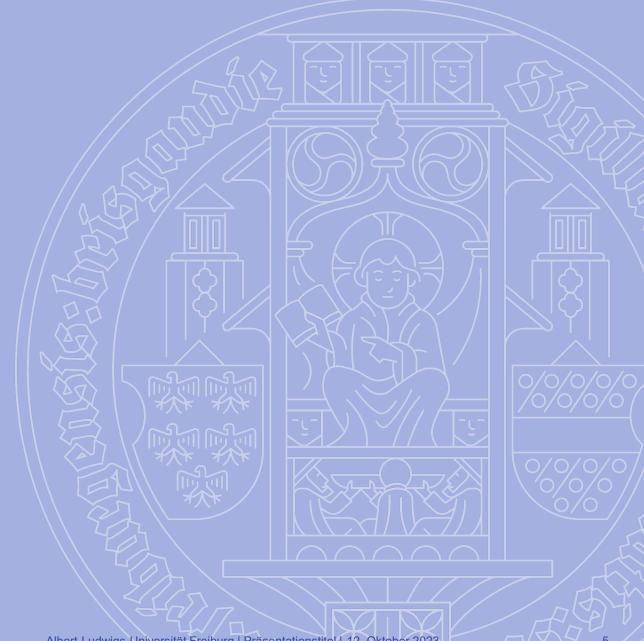


E-Mail: <u>studienberatung@imtek.de</u>

## **Agenda**

- 1. Organization
- 2. Administration
- 3. Important info and rules regarding exams
- 4. Where to find information and help

## 1. Organization



#### Curriculum

## Some important terms

### Modules **M**

#### 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/ Praktische Übung(Pr)
- Seminars –Seminar (S)

#### Curriculum

## Some important terms

#### 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 limited number of attempts

#### Curriculum

#### **Structure**

## Microsystems Engineering (M.Sc.)

First year

Second year

Microelectronics
Micro-mechanics
Microsystems design laboratory
Microsystems Technologies and
Processes
Signal processing

Concentration Areas
(30 ECTS):
Biomedical engineering
Circuits and systems
Materials and Fabrication
Photonics
Customized Course
Selection (i.e. language
courses)

Advanced Microsystems:

(30 ECTS, 5 out of 8 modules)
Assembly and Packaging Technology
Micro-optics
Modelling and System Identification
Probability and Statistics
Sensors
Biomedical Microsystems
Micro-actuators
Micro-fluidics

Master thesis 30 ECTS

## 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**

Module	Туре	Exam	ECTS	Semester
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	L+E	Pass/Fail assessment (Studienleistung) Written exam	6	1
Signal Processing	L+La	Written exam	6	2
Master's module		Thesis and presentation	27+3	4

#### **Compulsory elective modules**

Module	Туре	Exam	ECTS	Semester
Assembly and Packaging Technology	Le+E	Writen exam	6	1, 2 or 3
Mirco-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+La	Pass/fail assessment Written exam	6	1 or 3
Biomedical Microsystems	Le+E	Written exam	6	2
Micro-actuators	Le+E	Pass/fail assessment Written exam	6	2
Micro-fuidics	Le+E	Written exam	6	2
Total to be selected			30	

## **Concentration Areas in Microsystems Engineering**

You choose ONE area

#### The four concentration areas are:

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

- Courses from the MSE concentrations
- 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!

## **Optional Specialization**

You can choose to do a specialization in your study programme (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 30 ECTS from the according specialization
- You have to do a Master Thesis with a related topic

#### **Master's Thesis**

- Master thesis (27 ECTS) graded
- Colloquium (= Presentation/ Defense; 3 ECTS) graded

Admission to thesis: you need at least 72 ECTS credits

Duration: 6 months

More info: <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/thesis">https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/thesis</a>

## 2. Administration



#### **Advice and recommendations**

- 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

- 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)

A non-binding English translation of the MSE exam regulations can be found here.

## **Course booking**

- Have a look at your planner of studies <a href="https://campus.uni-freiburg.de">https://campus.uni-freiburg.de</a>
- If you have questions or made a mistake while booking: Contact Ms. Moses in the Dean's office: <u>moses@tf.uni-freiburg.de</u> or myself(Screenshots are really helpful)
- Booking periods can always be found here: <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates">https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates</a>
- → Booking deadlines and seat allocation for Bachelor and Master courses

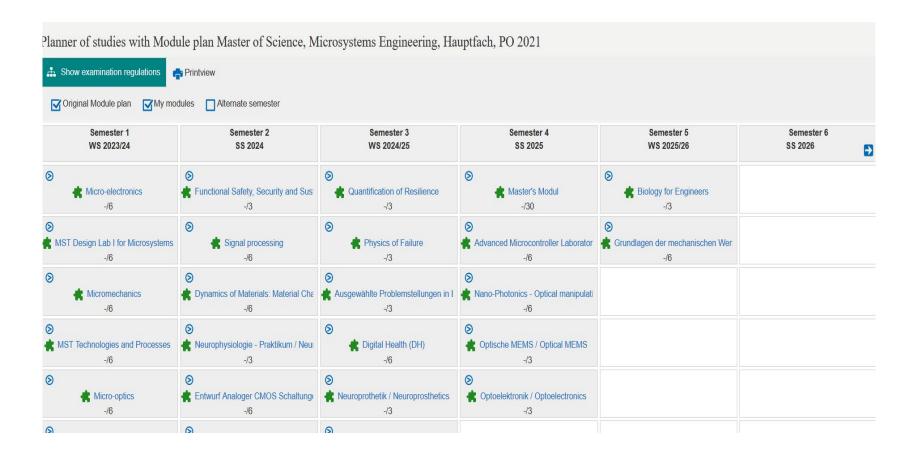
- Be aware: Different course types have different deadlines!
- If you forgot to book a course: contact the lecturer and ask if there are still seats available and if it generally makes sense to start late
- The examination office can't help you with this!
- Please note: Registration for an exam in HISinOne can be confusing if you did not book the course beforehand!

## Course booking Wiki/HISinOne Demo

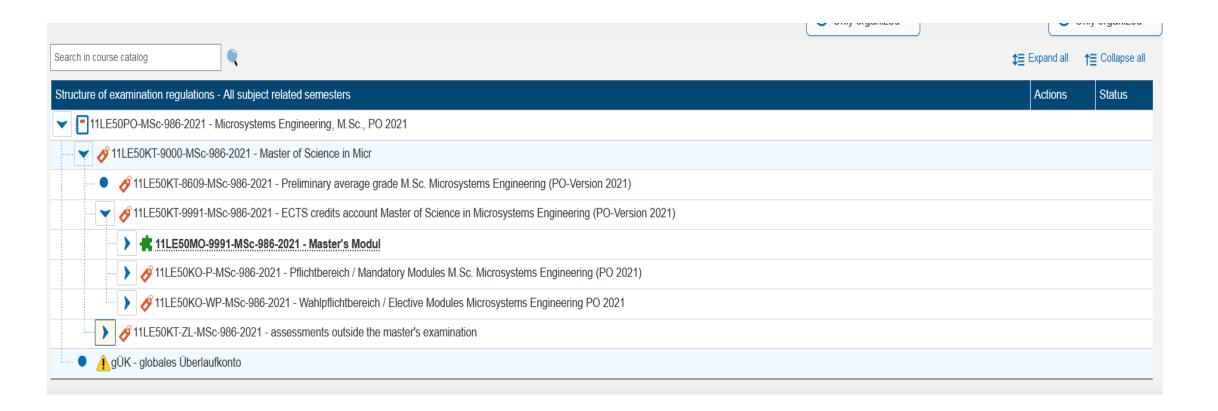
Login to <a href="https://campus.uni-freiburg.de/">https://campus.uni-freiburg.de/</a>



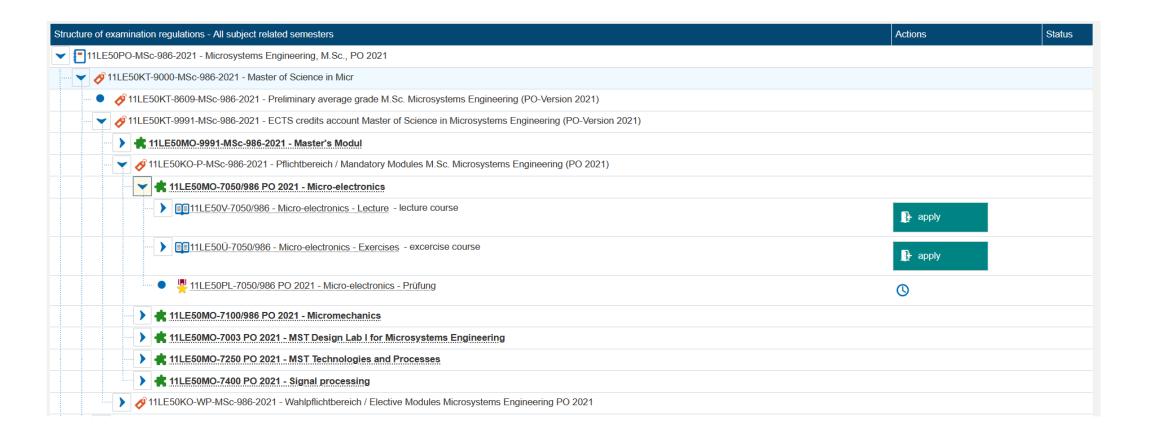
## Course booking Wiki/HISinOne Demo



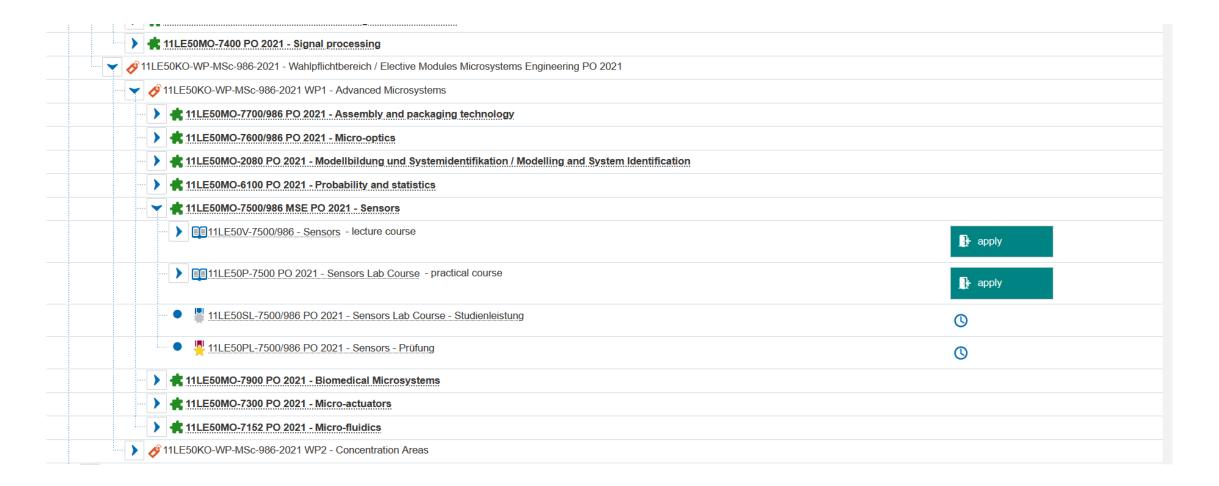
## Course booking Wiki/HISinOne Demo



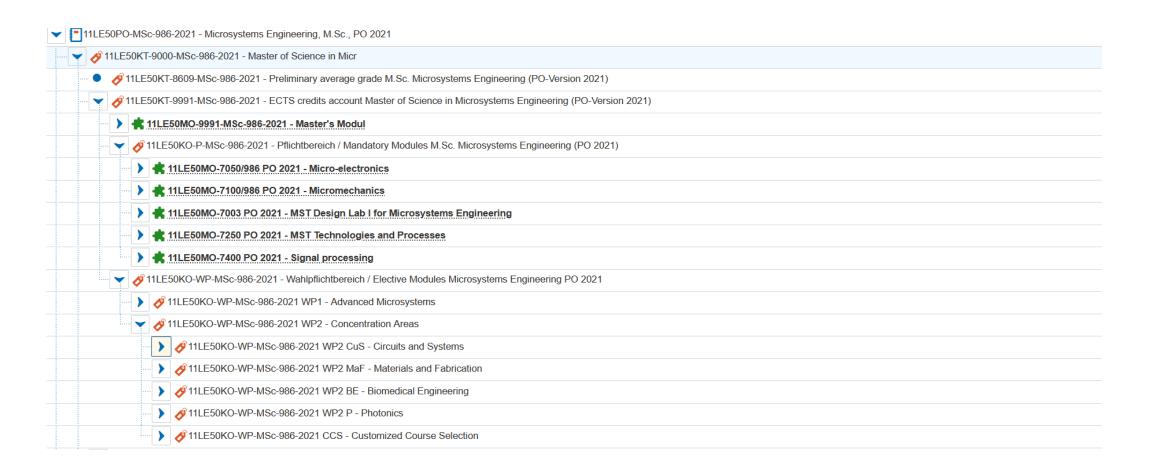
## Course booking Wiki/HISinOne Demo Mandatory courses



## Course booking Wiki/HISinOne Demo Advanced MSE



## Course booking Wiki/HISinOne Demo Concentrations



## Course booking Wiki/HISinOne Demo-Customized Course Selection

	11LE50	0KT-8609-MSc-986-2021 - Preliminary average grade M.Sc. Microsystems Engineering (PO-Version 2021)
	11LE50	OKT-9991-MSc-986-2021 - ECTS credits account Master of Science in Microsystems Engineering (PO-Version 2021)
		ILE50MO-9991-MSc-986-2021 - Master's Modul
	<b>2 4</b> 11	LE50KO-P-MSc-986-2021 - Pflichtbereich / Mandatory Modules M.Sc. Microsystems Engineering (PO 2021)
	··· > •	<u>常 11LE50MO-7050/986 PO 2021 - Micro-electronics</u>
-		★ 11LE50MO-7100/986 PO 2021 - Micromechanics
	··· <b>&gt;</b> -	t11LE50MO-7003 PO 2021 - MST Design Lab I for Microsystems Engineering
	··· >	11LE50MO-7250 PO 2021 - MST Technologies and Processes
	<b>&gt;</b>	<b>★</b> 11LE50MO-7400 PO 2021 - Signal processing
<b>Y</b>	<b>1</b> 1	LE50KO-WP-MSc-986-2021 - Wahlpflichtbereich / Elective Modules Microsystems Engineering PO 2021
		Ø 11LE50KO-WP-MSc-986-2021 WP1 - Advanced Microsystems     ✓ 11 Microsystems     Ø 11 Microsystems
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	[	) Ø 11LE50KO-WP-MSc-986-2021 WP2 CuS - Circuits and Systems
		) 6 11LE50KO-WP-MSc-986-2021 WP2 MaF - Materials and Fabrication
	[	) 4 11LE50KO-WP-MSc-986-2021 WP2 BE - Biomedical Engineering
	[	) 6 11LE50KO-WP-MSc-986-2021 WP2 P - Photonics
	[	▼ 0 11LE50KO-WP-MSc-986-2021 CCS - Customized Course Selection
		···· ) 🗳 11LE50KO-WP-MSc-986-2021 KT 1 - Courses offered by IMTEK
		···· ) 🗳 11LE50KO-WP-MSc-986-2021 KT 2 - Courses offered by other departmens of the University of Freiburg
		) 8 11LE50KO-WP-MSc-986-2021 KT 3 - Language courses



More details will be offered by the examination office team in a presentation in November. 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 <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/examinations">https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/examinations</a>
- 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

## How to proceed if you failed an exam

#### **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 exams (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
     <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq">https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq</a>
  - Due to emergencies in family etc. (please contact examination office immediately)

4. Finding information and help



## Students are responsible to stay informed

You are independent persons, expected to (mostly) self-organize and self-motivate. There is no service establishment catering to all your needs.

#### 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 email adress!)

Reading is essential! Please read! The whole text, all the lines in an email, the complete instructions in exercise or exam sheet...

"I did not know!" is not an acceptable excuse!

#### Information resources

- Faculty of Engineering: <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching">https://www.tf.uni-freiburg.de/en/studies-and-teaching</a>
- Calendar, dates and deadlines: <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates">https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates</a>
- Programme website: <a href="https://www.tf.uni-freiburg.de/en/study-programs/microsystem-engineering/m-sc-microsystems-engineering-en?set\_language=en">https://www.tf.uni-freiburg.de/en/study-programs/microsystem-engineering/m-sc-microsystems-engineering-en?set\_language=en</a>
- Information for new students: <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/freshers-info">https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/freshers-info</a>
- A to Z –Study FAQ <a href="https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq">https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq</a>

## When writing an e-mail to an advisor or the examination office...

- Please use a sensible subject
- Assume we do not know you, and we have no supernatural powers. So, please sign the email with your full name; your matriculation number can also be helpful, and it would be great if you mention your study programme
- Use full names of professors, supervisors or lecturers (we are not on first name base with everyone at the faculty)
- For a question about a new topic: Write a new mail and address it (correctly) yourself. Don't "answer" to older information mails from us
- If it is urgent, indicate this in the subject line! Our responses to mails not classified as urgent can take quite a while and we try to prioritize

#### Reach out...

If you have any queries or problems: please try to reach out as soon as possible.

#### Contacts & information sources:

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



## What is the Service Center Studium? Everything under one roof

#### SCS - Sedanstr. 6

Zentrale Studienberatung

(Central Academic Advising)

Information

Hotline

Beratung/ Counseling

Workshops, Events

Media-Team (OSA, myUFR-App)

**Projects** 

Studierendensekretariat (Registration office)

Applications/
Admissions
(Germans and
"Bildungsinländer")

Student Administration

International Admissions and Services

Applications/ Admissions Internat. Students

Student administration

Intercultural Mentoring

APIS - Additional
Program for Internat.
Students

**UniCard office** 

**Deutschlandstipendium** 

**Scholarship advising** 

FACE: advising on teachers training

Studying abroad | Erasmus+

Representative f. Students with a Disability or Chronic Illness

Federal Employment Agency
University Team

#### Whom to ask?

### programme-related matters:

general matters:

#### **Lecturers/ Professors**

e.g. thematic questions, literature and learning material etc.

#### **Study coordinators**

e.g. study planning, decisions, setting priorities, examination regulations, credits etc.

#### **International Admissions and Services (in SCS)**

e.g. advice for international students, preliminary certification by the university, issue of certificates for international students, questions about leave of absence and tuition fees etc.

→ www.ias.uni-freiburg.de

#### **Central Academic Advising (in SCS)**

e.g. motivation, reorientation, decision-making, learning process, study organisation, stress, crises etc.

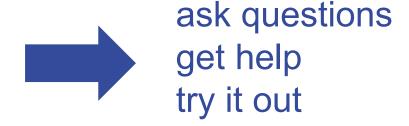
- confidential, anonymous if necessary, neutral
- If needed, referral to other contact persons (representative for students with chronic illness/disability, employment agency etc.)

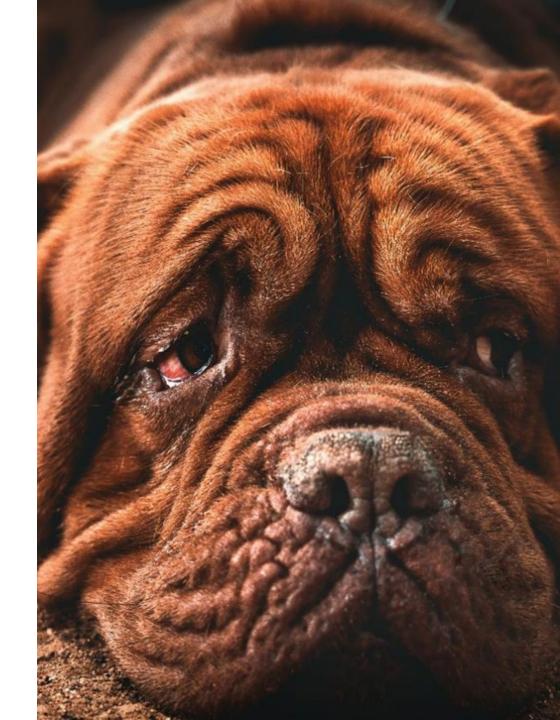
→ www.zsb.uni-freiburg.de



## What to do when things get stuck? Trouble shooting

- Confusion, doubt and crises are normal parts of studying: sometimes it's
  just a brief irritation, sometimes there's more to it than that
- There are many helpful contact persons at the university; the SCS will help directly or find the right places for you
- Take care of a good balance from the beginning (e.g. student health management www.sgm.uni-freiburg.de; workshops by SCS and SWFR)
- If needed, sooner rather than later:





## In case of emergency

- emergency call 112
- https://uni-freiburg.de/zuv/service/hilfe-bei-notfaellen/
- https://www.diversity.uni-freiburg.de/en/service-and-contactpoints?set\_language=en
- Psychotherapeutic Counselling of the "Studierendenwerk" www.swfr.de/en, follow "Support"
- In case of urgent crises:
  - Outpatient Clinic of the University Department of Psychiatry and Psychotherapy, Hauptstraße 5, Freiburg Tel: 0761/270-65 500, -65 010, -65 020
  - Emergency practice of the Kassenärztliche Vereinigung BW in the University Hospital, ground floor, Hugstetter Str. 55, Freiburg

Tel: 116 117 (Mon/Tue/Thu 8 p.m.-6 a.m.; Wed/Fri 4 p.m.-6 a.m.; Sat/Sun/Holiday 24h)

# Thank you for your attention. Wishing you a good start and the best of success!

Campus tour is about to begin at 12:15 ©

