

MASTER MATERIAL SCIENCES AND ENGINEERING

Information for first semester students



TECHNICAL DATA



- **Regular period of studies**
 - 4 semester
- **Total credit points:**
 - 120 ECTS
- **Maximum study time:**
 - 7 semester

Semester	WS 1	SS 2	WS 3	SS 4	Total 120 credits
Subject	32 credits	30 credits	28 credits	30 credits	
Materialwiss. Vertiefung (Materials Science Major Course)	Microstructure- Property Relationships 6 credits, mPr Materials Characterization 6 credits, mPr	Applied Materials Modeling 6 credits, mPr Fundamentals in Materials Thermodynamics and Heterogeneous Equilibria 6 credits, mPr Solid-state Reactions and Kinetics of Phase Transformations, Corrosion 6 credits, mPr		Master's thesis 30 credits	30 credits
Schwerpunkt I * (Focal Course I)	See 3.2 8 credits, 2 mPr	See 3.2 8 credits, 2 mPr			16 credits
Schwerpunkt II * (Focal Course II)			See 3.2 16 credits, 3 mPr		16 credits
Interdisziplinäre Ergänzung (Interdisciplinary Supplement)		See 1.4 4 credits, m/sPr	See 1.4 8 credits, m/sPr		12 credits
Überfachliche Qualifikationen (Interdisciplinary Qualifications)			HoC/SPZ/ZAK- courses 4 credits, SL		4 credits
	Internship 12 credits				12 credits





OUTLINE

1. Statutes and regulations
2. Module Overview
3. Formalities at KIT
4. Further information



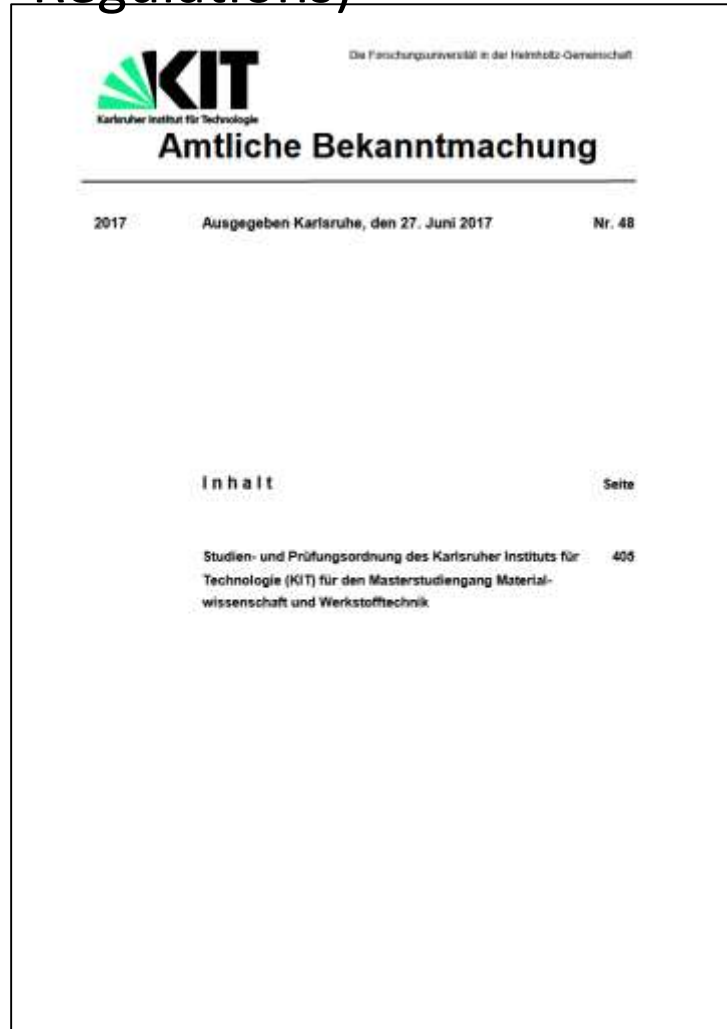


OUTLINE

1. Statutes and regulations
2. Module Overview
3. Formalities at KIT
4. Further information



Studien- und Prüfungsordnung (Studies and Examination Regulations)



Modulhandbuch (Module Handbook)



IMPORTANT OFFICES AND PEOPLE



Prüfungsausschuss PA
(examination
committee)

- Examination matters
- Legally binding statements
- recognitions
- extensions
- second repetition



Studienbüro
(Student office)

- matriculation
- deregistration



Performance
coordinator

- Registration for examinations
- recognition



OUTLINE



1. Statutes and regulations
- 2. Module Overview**
3. Formalities at KIT
4. Further information



MODULE OVERVIEW

Compulsory Modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics Kinetics Materials characterization Properties Simulations	Focal course 1 Focal Cours 2 2 Technical specialisation	KC lecture	Internship	Master thesis



LECTURES

- Lectures
 - Offered either in winter or summer
 - Compulsory courses are offered in every semester, alternating in German and English
 - Exams:
 - Offered once every semester
- Getting an early overview



MODULE OVERVIEW

Compulsory modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics	Focal course 1	KC	Internship	Master thesis
Kinetics				
Materials characterization	Focal Cours 2 2			
Properties	Technical specialisation			
Simulations				
Compulsory Subjects				



COMPULSORY SUBJECTS

- Compulsory courses: must be done by everyone

Deutsch	Englisch
<u>Winter semester:</u> - Solid-state Reactions and Kinetics of Phase Transformations, Corrosion - Fundamentals in Materials Thermodynamics and Heterogeneous Equilibria - Materials Characterization <u>Summer semester:</u> - Microstructure-Property Relationships - Applied Materials Simulation	<u>Winter semester:</u> - Microstructure-Property Relationships - Materials Characterization <u>Summer semester:</u> - Solid-state Reactions and Kinetics of Phase Transformations, Corrosion - Applied Materials Simulation - Fundamentals in Materials Thermodynamics and Heterogeneous Equilibria



MODULE OVERVIEW

Compulsory Modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics	Focal course 1	KC	Internship	Master thesis
Kinetics				
Materials characterization	Focal Cours 2 2			
Properties	Technical specialisation			
Simulations				
		Specialisation		



FOCAL COURSES

Focal courses: (4 Choices)

- Structural Materials
- Computational Materials Science
- Materials Processing
- Functional Materials



FOCAL COURSES



Focal Courses:

- 2 Focal Courses to choose
- Min. 16 ECTS – Max. 20 ECTS
 - Min. 12 ECTS with **Grading**
 - Min. 8 ECTS with „X“
- Registration via CAMPUS

SP 4: Funktionswerkstoffe

Koordinator: Prof. Hoffmann

LV-Nr		Lehrveranstaltung	Dozent	SWS	LP	Erfolgs-kontrolle	Sem	Sprache
2304207+ 2304213	X	Batterien und Brennstoffzellen*	Weber	3	5	mPr	WS	D
2304231	X	Sensoren	Meneskiou	2	3	sPr	WS	D
2304240	X	Sensorsysteme	Wersing	2	3	mPr	SS	D
2313737	X	Photovoltaik**	Powalla	4	6	sPr	SS	D
2313726+ 2313728	X	Optoelektronik	Lemmer	3	4	mPr	SS	D
2313734		Grundlagen der Plasmatechnologie	Kling	2	4	mPr	SS	D
2141865	X	Neue Aktoren und Sensoren	Kohl / Sommer	2	4	mPr	WS	D
2141866		Aktoren und Sensoren in der Nanotechnik	Kohl	2	4	mPr	WS	D
4021011	X	Elektronische Eigenschaften von Festkörpern I	Weber / Weiß	4	8	mPr	WS	D
4021111		Elektronische Eigenschaften von Festkörpern II	Ustinov	2	4	mPr	SS	D
5404		Spektroskopie mit Elektronen und weichen Röntgenstrahlen	Heske / Weinhardt	2	4	mPr	SS	D
5439		Moderne Charakterisierungsmethoden zur Charakterisierung von Materialien und Katalysatoren	Grunwaldt / Kleist / Lichtenberg	2	4	mPr	WS	D
23660	X	VLSI-Technologie	Siegel	2	4	mPr	WS	D
2309456+ 2309457	X	Halbleiterbauelemente	Koos	3	5	sPr	WS	D
2126784		Funktionskeramiken	Hinterstein	2	4	mPr	WS	D
2181710	X	Mechanik von Mikrosystemen	Gruber / Greiner	2	4	mPr	WS	D
2312717 + neu	X	Superconducting Materials***	Holzapfel	4	6	mPr	WS/ SS	E
2312708 +2312709	X	Superconductivity for Engineers***	Holzapfel/ Kempf	3	5	sPr	WS/ SS	E
2314011 + neu	X	Superconducting Magnet Technology and Power Systems***	Arndt/Noe	6	7	mPr	WS/ SS	E
2193013		Lasergestützte Methoden und deren Einsatz für Energiespeichermaterialien	Pfleging	2	4	mPr	ww	D



MODULE OVERVIEW

Compulsory Modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics	Focal course 1	KC	Internship	Master thesis
Kinetics				
Materials characterization	Focal Cours 2 2			
Properties	Technical specialisation			
Simulations				

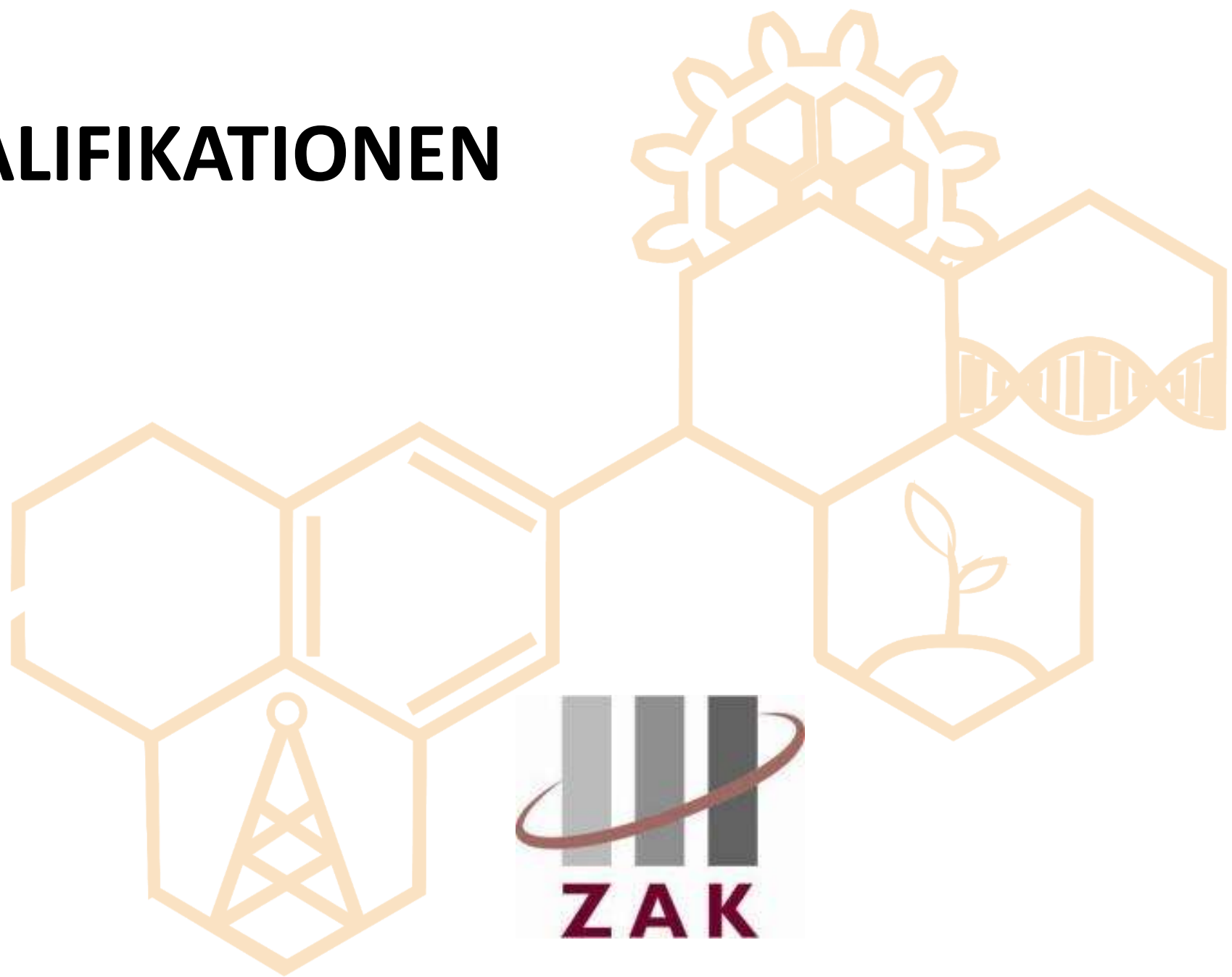
Key Competences



SCHLÜSSELQUALIFIKATIONEN



SpZ





KEY COMPETENCES

- House of Competence (**HoC**)
 - Key Competences
- Zentrum für Angewandte Kulturwissenschaften (**ZAK**)
 - Key Competences + Studium Generale
- Sprachenzentrum (**SpZ**)
 - Language courses

→ Registration periods shortly before the start of each semester



MODULE OVERVIEW

Compulsory Modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics	Focal course 1	KC	Internship	Master thesis
Kinetics				
Materials characterization	Focal Cours 2 2		Internship	
Properties	Technical specialisation			
Simulations				

INTERNSHIP



Internship:

- SPO:
 - At least 9 weeks (in the industry)
 - Must cover certain fields of activity
- Recognition by Dr. Patric Gruber
- Short presentation about the activities during the internship and report (mostly presentation slides)
- Bring original employer's reference

It may be chosen among the following areas:

- Werkstoffentwicklung (materials development)
- Werkstoffprüfung / Qualitätskontrolle (materials testing / quality control)
- Materialsynthese (materials synthesis)
- Werkstoffauswahl im Produktentstehungsprozess (materials selection in the product development process)
- Metallurgie / Pulvermetallurgie (metallurgy / powder metallurgy)
- Urformtechnik (molding)
- Umformtechnik (forming)
- Oberflächentechnik (surface treatment)
- Wärmebehandlung (thermal treatment)
- andere werkstofftechnische Tätigkeitsgebiete (nach Rücksprache mit dem Praktikantenamt der KIT-Fakultät für Maschinenbau) (other areas of materials engineering (upon agreement with the Internship Office of the KIT Department of Mechanical Engineering)).



MODULE OVERVIEW

Compulsory Modules	Specilization	Key Competences	Internship	Masterthesis
Thermodynamics	Focal course 1	KC	Internship	Master thesis
Kinetics				
Materials characterization	Focal Cours 2 2			
Properties	Technical specialisation			
Simulations				

Masterthesis





MASTER THESIS

Master thesis:

- 30 ECTS
 - **6 months!** Extension (**can be applied for at the PA**) only in exceptional cases (broken test-bench, illness, etc.)
- Prerequisite:
 - At least 75 LP completed
 - Completed internship





OUTLINE

1. Statutes and regulations
2. Module Overview
- 3. Formalities at KIT**
4. Further information





FORMALITIES AT KIT

Exam registration:

- Examinations must be **registered**
- Exams must be **deregistered** if they are not examined after all





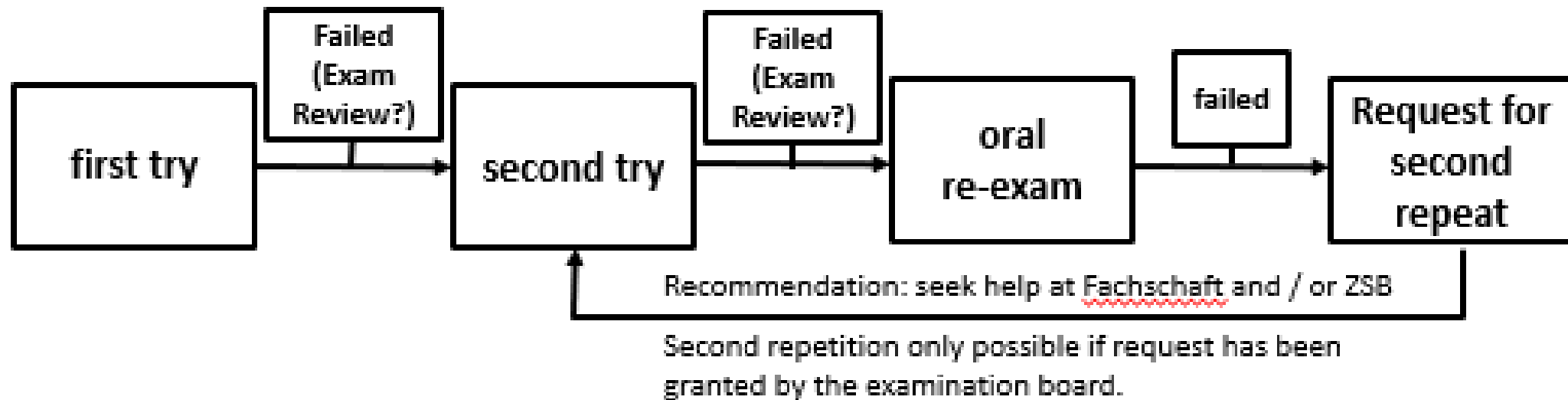
FORMALITIES AT KIT

Deadlines and time limits:

- Exam deregistration:
 - Written examination: the latest in the examination room
 - Oral examination: **3 working days** before examination
- Recognition likely in the first semester (or directly after return/change)
- Do not forget to re-register for the coming semester → Mid-February and Mid-August (You'll receive an email)



REPETITION OF WRITTEN EXAMS



OUTLINE

1. Statutes and regulations
2. Module Overview
3. Formalities at KIT
- 4. Further information**





CONTACT

- PA MatWerk:

- for all problems and questions concerning admission to examination
- can make legally binding statements
- matwerk.mpa@fs-fmc.kit.edu

- Studierendent service/Studiy Office:

- Enrolement
- Admission
- Exmatrikulation

Welcome Desk!

- Performance Coordinator (Johannes Schneider, IAM-CMS):

- Registration for examinations
- Recognitions





SEMESTER ABROAD

Various possibilities

- ERASMUS+
- Direktkooperation
- Freemover
- Kentucky
- ...



Sarah Witte

Raum: Geb. 10.23, Zi. 706

Tel.: 47716

sarah.witte@kit.edu

International Studieren im Maschinenbau (ISIM)

Important

- Inform immediately and be early
- **IStO und ISIM** coordinate the abroad stays





SEMESTER OF LEAVE

Recognition of abroad studies

- Talk to the lecturer in advance
 - If possible, make a written record of the „Learning Agreement“ (Erasmus)



ANSPRECHPARTNER



Fachschaft MACH/CIW

Öffnungszeiten: Mo-Fr 12:30-14:30

Telefon: +49 721 608-4 3782

Mail: fachschaft@fmc.uni-karlsruhe.de

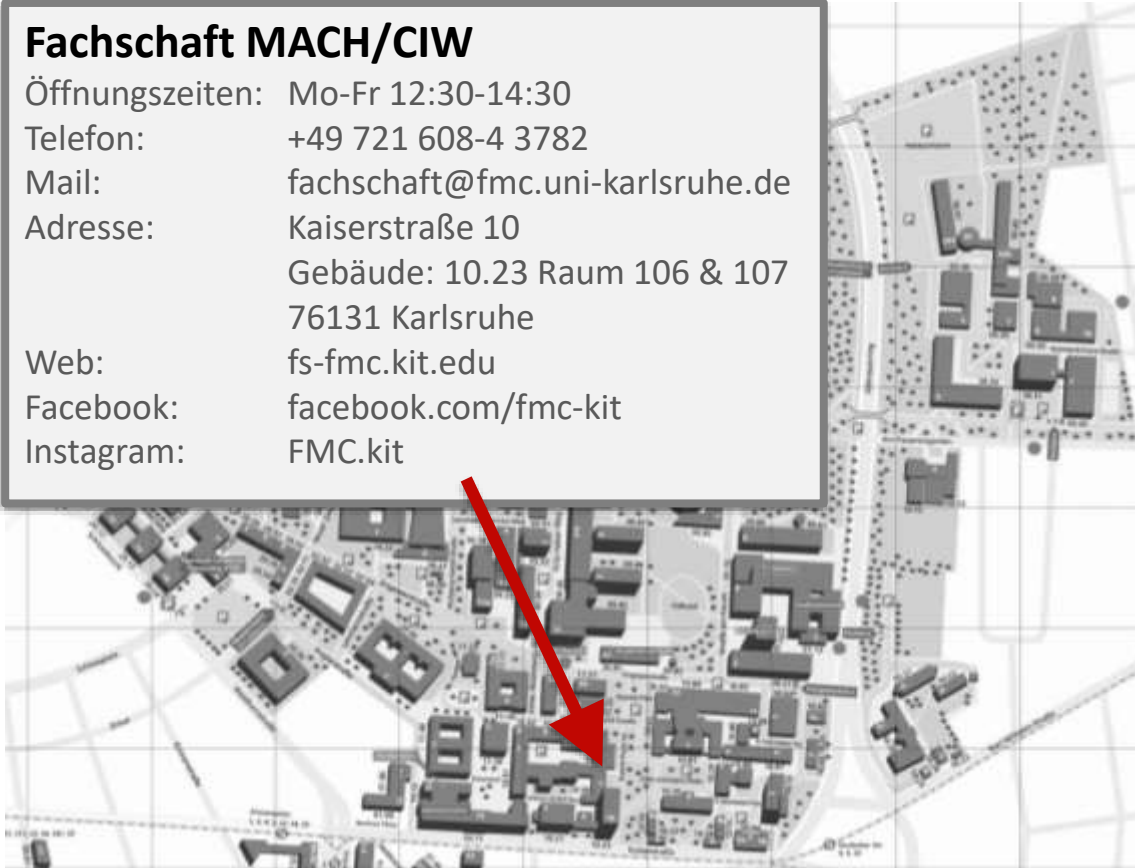
Adresse: Kaiserstraße 10

Gebäude: 10.23 Raum 106 & 107
76131 Karlsruhe

Web: fs-fmc.kit.edu

Facebook: facebook.com/fmc-kit

Instagram: [FMC.kit](https://www.instagram.com/FMC.kit)





BESIDE STUDIES

Discovering new things by looking beyond the horizon
Abroad studies, university groups, social commitment

- Student co-determination in/at the university
 - Student Council
 - ASTA
- Hochschulgruppen
- HiWi-Job

→ Entry possible at every time





WHAT ELSE TO DO...

Semesterverteiler

Hier könnt ihr euch in euren Mailverteiler ein-/austragen. Ihr müsst dazu nur eure Studienrichtung und das Jahr, in dem ihr mit dem Studium angefangen habt, eingeben. Über den Mailverteiler bekommt ihr immer die neusten Informationen von eurer Fachschaft.

Bachelor/Master: *

Master ▼

Studienbeginn: *

2019 ▼

Studiengang: *

MATWERK ▼

An-/Abmelden:

☒ Anmelden

☐ Abmelden

☒ Ich möchte weitergeleitet werden.

Link generieren

Subscribe our Semesterverteiler:
<https://www.fs-fmc.kit.edu/semesterverteiler>





SUMMARY

- Get a general overview
- Early registration for exams
- Recognition likely within the first semester
- Master thesis maximum 6 months
- Plan your stay abroad early

