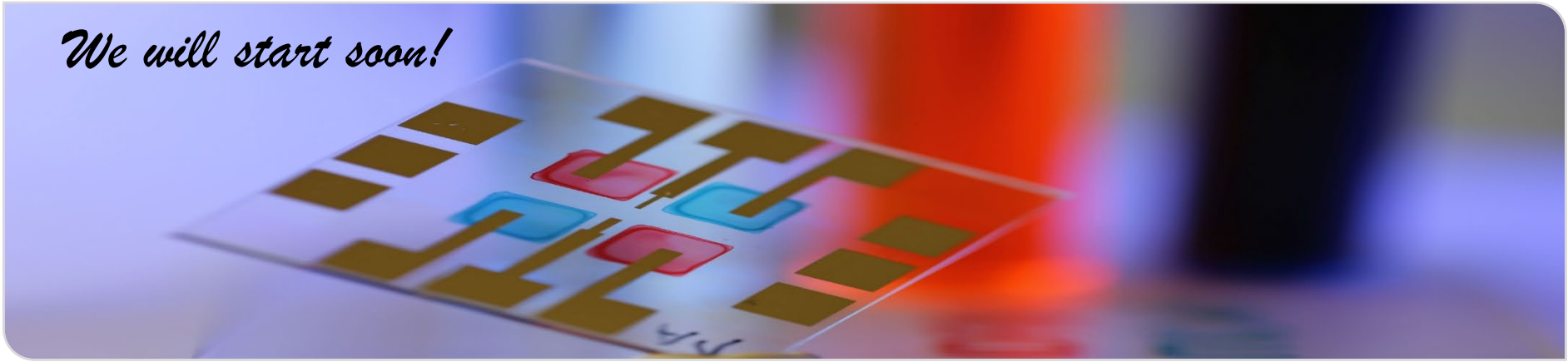
Karlsruhe Institute of Technology

Welcome to the first semester of the Master's degree programs Electrical Engineering and Information Technology (ETIT) Mechatronics and Information Technology (MIT)



Master Examination Board

- Chairmen:
  - Prof. Dr.-Ing. Ahmet Cagri Ulusoy (ETIT)
  - Prof. Dr.-Ing. Markus Geimer (MIT)

- Study Program Service:
  - Gisela Schlüter
  - Anastasia Wandler
  - Tamara Sarter

Service of the Study Program Service

- Recognition of examination results in the Master's Program
- Examination admissions for examinations outside the faculty
- Admission to the Master Thesis
- Processing of all applications for study derogations
  (i. e. deadline extension, second repetition, etc.)

Your Study Program ETIT

- The Master´s degree program is divided into four subjects:
  - 4 Fields of Specialization (60 CP)
    - Fundamentals (24 CP)
    - Focus Area (depended on Lab: 27-30 CP)
    - Lab course (exactly one)
  - Electives (24 CP)
  - Interdisciplinary Qualifications (6 CP)
  - Master´s Thesis (30 CP)

120 CP

Your Study Program ETIT

- 4 Fields of Specialization – one of them can be chosen:
  - Automation, Robotics & Systems Engineering
  - Electrical Power Systems and Electromobility
  - Information and Communication Technology
  - Microelectronics, Photonics and Quantum Technologies
- List of academic advisors by specialization
  - https://www.etit.kit.edu/english/_academic_advice.php

Your Study Program ETIT

- Field of Specialization (60 CP)
  - Fundamentals (24 CP)
    - 4 Modules has to be chosen
  - Several Focus Areas (27-30 LP)
    - Orientation and recommendation for possible study courses, guideline of reasonable module combinations
    - The modules for each Focus Area are marked with a cross and are recommendations. Students are free to make their choice
  - Exactly one lab within each Field of Specialization (~ 6 CP)

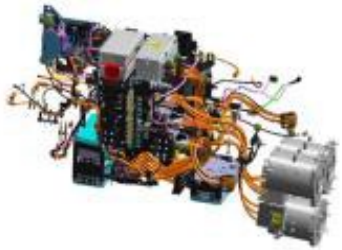
Your Study Program ETIT

- Electives (24 CP)
  - wide range of modules of further interest.
  - one additional lab or practical course can be chosen

- Interdisciplinary Qualifications (6 CP)
  - Subjects of the Language Centre
  - Subjects of the HoC – House of Competence
  - Services of the FORUM

Example: FoS Electrical Power Systems and Electromobility

- **Profiles:**
  - Electromobility
  - Electric Drives
  - Power Electronic Systems
  - Renewables
  - Electrochemical Systems
  - Power Systems Engineering and Economics
  - Superconductor Engineering



Example: FoS Electrical Power Systems and Electromobility

- Fundamentals (24 CP)

Fundamentals (24 CP)	CP winter	CP summer	Electro-mobility	Electric Drives	Power Electronic Systems	Renewables	Electro-chemical Systems	Power Systems Engineering & Economics	Super-conductor Engineering
English modules									
Batteries and Fuel Cells	6		x			x	x		
Electric Power Transmission & Grid Control		6	x		x	x		x	x
Numerical Methods with Programming Practice		6	x	x	x	x	x	x	x
Optimization of Dynamic Systems	6		x	x	x	x	x	x	x
Power Electronics		6	x	x	x	x	x	x	x
Superconductivity for Engineers	6								x

Example: FoS Electrical Power Systems and Electromobility – Focus Area (30 CP)

Fundamentals (24 CP)	CP winter	CP summer	Electro-mobility	Electric Drives	Power Electronic Systems	Renewables	Electro-chemical Systems	Power Systems Engineering & Economics	Super-conductor Engineering
English modules									
Batteries and Fuel Cells	6		x			x	x		
Electric Power Transmission & Grid Control		6	x		x	x		x	x
Numerical Methods with Programming Practice		6	x	x	x	x	x	x	x
Optimization of Dynamic Systems	6		x	x	x	x	x	x	x
Power Electronics		6	x	x	x	x	x	x	x
Superconductivity for Engineers	6								x
Focus Area (30 CP)	**CP winter**	**CP summer**							
English modules									
Communication Systems and Protocols		5	x	x	x	x	x	x	
Components of Power Systems		3						x	
Electric Drives for E-Mobility		5	x	x	x		x		
Electrocatalysis		5					x		
Energy Storage and Network Integration	4				x	x	x		
Hardware/Software Co-Design	6		x	x					
Liberalised Power Markets	6					x		x	
Nano- and Quantum Electronics		6							x
Pulsed Power Technology and Applications	3								x
Quantum Detectors and Sensors	6								x
Radio-Frequency Electronics	6								x
Renewable Energy-Resources, Technologies and Economics	3					x		x	
Seminar on Applied Superconductivity		3							x
Solar Energy (winter term) or Photovoltaik (summer term)	6	6				x	x		
Solar Thermal Energy Systems	4					x			
Superconducting Magnet Technology		4							x
Superconducting Materials (2-term module)	3	3							x
Superconducting Power Systems	4								x
Systems and Software Engineering	6		x	x					
Workshop Finite Element Method in Electromagnetics		3		x					
German modules									
Aufbau- und Verbindungstechnik für leistungselektronische Systeme	3			x	x				
Batterie- und Brennstoffzellensysteme		3	x		x	x	x		
Echtzeitregelung elektrischer Antriebe	6		x	x	x				
Einführung in die Energiewirtschaft		5						x	
Elektronische Systeme und EMV		3		x					
Energiewirtschaft	3							x	
Entwurf Elektrischer Maschinen	5		x	x					x
Grundlagen der Fahrzeugtechnik I	8		x						

Example: FoS Electrical Power Systems and Electromobility

- Lab Course (exactly 1)

Lab Course (exactly 1)	CP winter	CP summer							
English modules									
Lab Course on Nanoelectronics/Praktikum Nanoelektronik	6	6							x
Lab Course on Noise Thermometry	6	6							x
Lab Course on Robotic Winding Technology for Superconducting Wires	6								x
Lab Course on Superconducting Materials/ Praktikum Supraleitende Materialien	6	6							x
Lab Course on Superconducting Quantum Electronics/ Praktikum Supraleitende Quantenelektronik	6	6							x
Laboratory Modern Software Tools in Power Engineering		6						x	
Laboratory Information Systems in Power Engineering		6						x	
Laboratory Solar Energy/Praktikum Solarenergie	6	6				x			
Practical Course: Smart Energy System	6	6				x		x	
German modules									
Energietechnisches Praktikum	6			x	x				
Praktikum Batterien und Brennstoffzellen	6		x			x	x		
Praktikum Elektrische Antriebe und Leistungselektronik		6	x	x	x				

Overview Structure Master's program ETIT

In Summary 120 CP

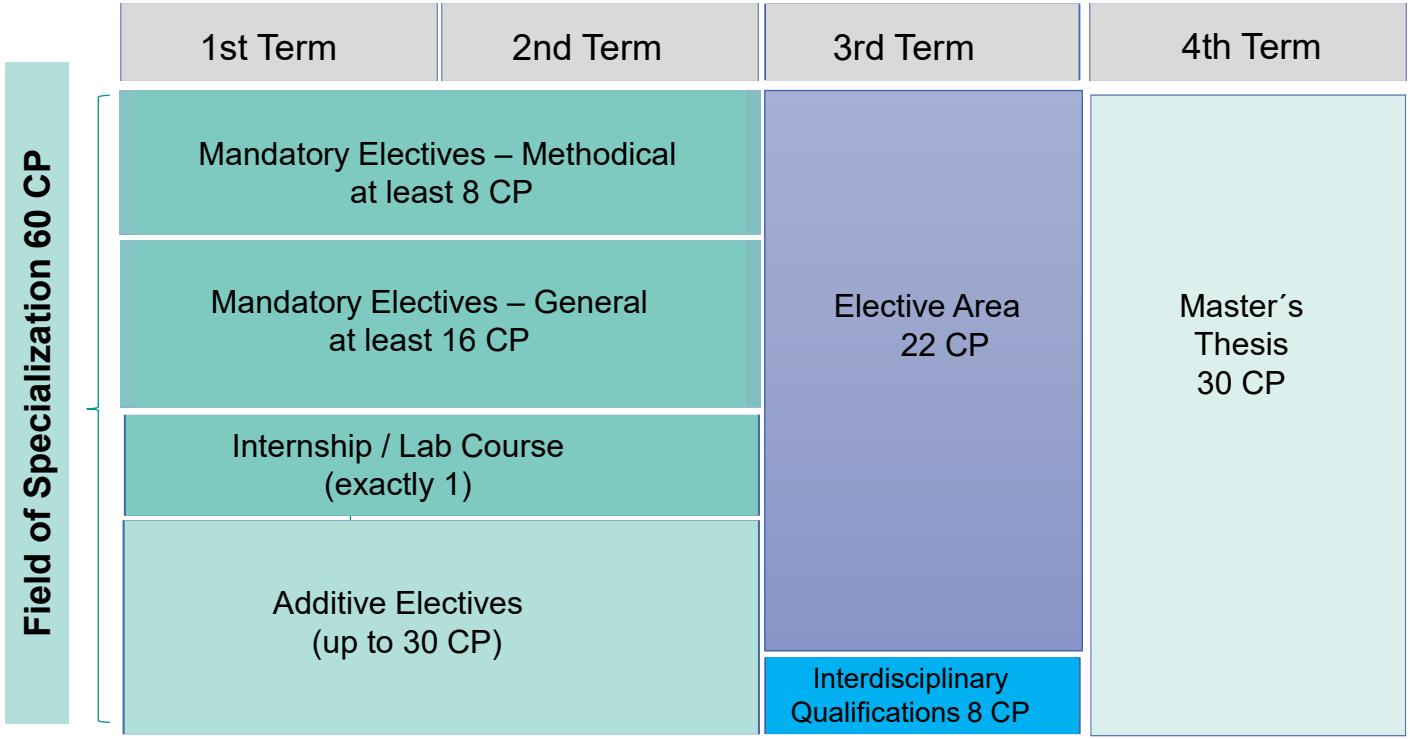
Your Study Program MIT

- The Master's degree program MIT is divided into the four subjects:
  - Field of Specialization (60 CP)
    - Electives (30 CP)
    - General (16 CP)
    - Methodical (8 CP)
    - Internship (6 CP)
  - Electives (22 CP)
  - Interdisciplinary Qualifications (8 CP)
  - Master`s Thesis (30 CP)

Your Study Program MIT

Choose 1 Field of Specialization
Energy Technology
Industrial Informatics and Systems Engineering
Vehicle Systems Engineering
Micro System Technology
Automation, Control and Robotics
Autonomous Systems and AI
Design of Mechatronic Systems

Your Study Program MIT



Important Deadlines:

- Recognition of examinations in the first semester after matriculation
- Recognition of Master's Transfer Account within the first semester
- Second repetition must be requested and approved by the examination board. As long as they are not approved, you have lost the right to take the exam and are not allowed to write exams at KIT.

Check the Module Handbook and the Study Regulations

Where to find us: Study Program Office

Building 10.91, Room 223.1

If you have any questions or problems regarding your studies you are welcome to contact us!

master-info@etit.kit.edu

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