

Electrical Engineering, MSc – Majors and courses (completely in English), 6 ECTS for each course with lecture + exercises

Major Smart Information Processing

- [Communication Networks Architecture and Design](#)
- [Statistical and Adaptive Signal Processing](#)
- [Optical Signal Processing](#)
- [Detection and Pattern Recognition](#)
- [Information Theory](#)
- [Deep Learning](#)
- [Advanced Mathematics for Signal and Information Processing](#)
- [Semiconductor Engineering IV – Intelligent Sensors and Actors \(SE IV\)](#)
- [Optical Communications](#)
- [Wireless Communications](#)

Major Communication Systems

- [Radio Frequency Technology](#)
- [Communication Networks Architecture and Design](#)
- [Statistical and Adaptive Signal Processing](#)
- [Physical Design of Integrated Circuits](#)
- [Performance Modeling and Simulation](#)
- [Microwave Analog Frontend Design I](#)
- [Information Theory](#)
- [Advanced Mathematics for Signal and Information Processing](#)
- [Mixed-Signal Integrated Circuits](#)
- [Advanced Optical Fiber Communications](#)
- [Optical Communications](#)
- [Wireless Communications](#)

Major Electromagnetics Applications

- [Radio Frequency Technology](#)

- [Physical Design of Integrated Circuits](#)
- [Detection and Pattern Recognition](#)
- [Microwave Analog Frontend Design I](#)
- [RF CMOS](#)
- [Advanced Mathematics for Signal and Information Processing](#)
- [Microwave Engineering](#)
- [Advanced Optical Fiber Communications](#)
- [Optical Communications](#)
- [Wireless Communications](#)

Major Smart Systems

- [Power Electronics II](#)
- [Radio Frequency Technology](#)
- [Detection and Pattern Recognition](#)
- [Software Engineering for Real-Time Systems](#)
- [Industrial Automation Systems](#)
- [Circuit Design in Nanometer Scaled CMOS](#)
- [Advanced Mathematics for Signal and Information Processing](#)
- [Semiconductor Engineering IV – Intelligent Sensors and Actors \(SE IV\)](#)
- [Advanced Optical Fiber Communications](#)
- [Introduction to CMOS Analog Integrated Circuit Design](#)

Major Nano and Opto Electronics

- [Radio Frequency Technology](#)
- [Optical Signal Processing](#)
- [Advanced CMOS Devices and Technology](#)
- [Physical Design of Integrated Circuits](#)
- [Photovoltaics III](#)

- [Microwave Analog Frontend Design I](#)
- [Thin Film Technology](#)
- [Engineering Materials](#)
- [Mixed-Signal Integrated Circuits](#)
- [Semiconductor Engineering IV – Intelligent Sensors and Actors](#)

Major Power-Electronic Systems and Technologies

- [Power Electronics II](#)
- [Battery modelling and Energy Management](#)
- [Applied Numerical Field Computations](#)
- [Semiconductor Engineering III - Semiconductor Power Devices \(SE III\)](#)
- [Engineering Materials](#)
- [Robust Power Semiconductor Systems I](#)
- [Robust Power Semiconductor Systems 2](#)
- [Hardware Platforms and Programming of Embedded Systems](#)
- [Wireless Power Transfer](#)

Major Electrical Power Systems

- [Power Electronics II](#)
- [Industrial Automation Systems](#)
- [Battery modelling and Energy Management](#)
- [Power Transmission II](#)
- [Electrical Machines II](#)
- [High Voltage Technology II](#)
- [Intelligent Power Grids](#)
- [High Voltage Insulation Systems](#)
- [Planning and Operation of Decentralized Power Systems](#)

Other modules (M.Sc. Electrical Engineering):

[Space-Time Wireless Communication](#)

[Digital Systems](#)

[Network Security](#)

[Mobile Network Architecture Evolution](#)

[Digital Video Communications](#)

[Antennas](#)

[High- Frequency Methods in Diffraction Theory](#)

Matrix Computations in Signal Processing and Machine Learning

[Error Control Coding: Graph-based Codes and Iterative Methods](#)

Error Control Coding: Algebraic and Convolutional Codes

Deep Learning Applications for Communications

Applied Numerical Field Computations

[Robust System Design](#)

[Circuit Design in Nanometer Scaled CMOS](#)

[Energy-Efficient Power-Semiconductor Architectures and Technology](#)

[Quantum Technologies 2](#)

[Quantum Technologies 1](#)

[Finite Element Methods](#)

[Sensor principles and integrated interface circuits](#)

Microwave Analog Frontend Design 2

Mixed-Signal Integrated Circuits

Automotive Radar Systems for Autonomous Driving

[Modeling and Analysis of Automation Systems](#)

SiGe BiCMOS Monolithic Microwave Integrated Circuit Design

Applications of High-Frequency Simulation Methods

Hardware Platforms and Programming of Embedded Systems

Advanced Visual Processing

Risk Assessment for Robotic Systems

Power Transmission II

[Condition Assessment of Power System Components](#)

High Voltage Test and Measuring Techniques

Wireless Power Transfer

Filter Synthesis

[Data Fusion and Resilience in Sensor Networks](#)

MASTER LAB COURSE, 6 ECTS

See the websites of the [Institutes](#)

KEY COMPETENCES, (non-technical), 3 ECTS

[Information on C@mpus](#)