

# Course Catalog

Fakultät für Informations-, Medien- und Elektrotechnik

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Courses are colour-coded according to the course language

German

English

German, English if  
necessary

German and English

## – Level: Bachelor, Summer Semester

→ [Advanced methods and theories of Media Design \(Russi\)](#)

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→ [algorithms and data structures \(Rosenthal\)](#)

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→ [Anerkennung "Staatlich geprüfter Augenoptiker" \(BaOPT\)](#)

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→ [Audio Engineering \(Reiter\)](#)

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→ [Autonomous Systems \(Yuan\)](#)

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→ [Autonomous Systems \(Yuan\)](#)

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→ [Bachelor Thesis \(BaTIN\)](#)

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→ [Bachelorarbeit \(BaET\)](#)

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→ [Bachelorarbeit \(BaMT\)](#)

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→ [Bachelorarbeit \(BaOPT\)](#)

---

→ [Basics of Media Design 1 \(Russi\)](#)

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→ [Bioenergie und regenerative Gastechologie \(Stenzel\)](#)

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→ [Capstone-Projekt \(BaET\)](#)

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→ [Colloquium \(BaTIN\)](#)

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→ [Communication Acoustics \(Pörschmann\)](#)

---

→ [Computer Graphics \(Fuhrmann\)](#)

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→ [Lighting Technology \(Weigand\)](#)

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→ [Management of Projects in Information Technology \(Yuan\)](#)

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→ [Mathematics 2 \(Bold\)](#)

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→ [Mathematics 2 \(Knospe\)](#)

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→ [Mathematics 2 \(Kunz\)](#)

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→ [Mathematics 2 \(Weigand\)](#)

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→ [Measurement Technology \(Silverberg\)](#)

---

→ [Media Design Project \(Russi\)](#)

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→ [Media ethics and society \(Russi\)](#)

---

→ [Medical Imaging \(Oberheide\)](#)

---

→ [Microcomputer systems \(Stockmann\)](#)

---

→ [Operating Systems and Distributed Systems 2 \(Vogt\)](#)

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→ [Operational energy management \(Stockmann\)](#)

---

→ [Optical Design \(Weigand\)](#)

---

→ [Parallel Programming and Computerarchitektur \(Thieling\)](#)

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→ [Persönliche Studienverlaufsplanung \(Kreiser\)](#)

---

→ Computer Science 2 (Fuhrmann)

---

→ Control Systems of Electrical Drives (Lohner)

---

→ Data Base Systems 2 (Behrend)

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→ Digital Communications (Dettmar)

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→ Digital Signal Processing with FPGA (Krah)

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→ Discrete Signals and Systems (Elders-Boll)

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→ Display technology (Ruelberg)

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→ Electrical Engineering Materials (Poggemann)

---

→ Electric power generation (Evers)

---

→ Electrical Engineering 2 (Basics) (Kronberger)

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→ Electrical Machines (Evers)

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→ Electrical safety and EMC (Humpert)

---

→ Electronic Media 1 (Pörschmann)

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→ Embedded system project (Krawutschke)

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→ Energy Economics (Stadler)

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→ Entwurf, Simulation und Layout von Schaltungen (Brunner)

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→ Formal Languages and Automata Theory (Nissen)

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→ Fundamentals in System Programming (Thieling)

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→ Fundamentals of Electrical Engineering 1 (Waffenschmidt)

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→ Fundamentals of Electrical Engineering 2 (May)

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→ Fundamentals of Electrical Engineering 2 (Waffenschmidt)

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→ Graphentheorie (Randerath)

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→ High Frequency Technologies (Kronberger)

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→ Holography (Altmeyer)

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→ Image Processing (Kunz)

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→ Image Sensor Technology (Poggemann)

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→ Industrial Image Processing (Thieling)

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→ Information technology for automation technology (Große)

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→ Photo Technology 2 (Fischer)

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→ Physics 1 (Humpert)

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→ Physics 1 (Kohlhof)

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→ Physics 1 (Oberheide)

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→ Postproduction (Gärtner)

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→ Power Electronics (Dick)

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→ Practical Informatics 2 (Rosenthal)

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→ Practical Informatics 2 (Yuan)

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→ Practically based Summer School (Schneider)

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→ Praxis- und Mobilitätsphase (BaMT)

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→ Praxismodul 1 (BaOPT)

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→ Praxisprojekt (BaET)

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→ Praxisprojekt (BaOPT)

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→ Process Control Technology Systems (Große)

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→ Product Development for Smart City (Stadler)

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→ Programming distributed and mobile applications (Vogt)

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→ Project Camera Technology Applications (Fischer)

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→ Project Image Processing / Pattern Recognition (Kunz)

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→ Project Interactive Systems (Grünvogel)

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→ Project Media Distribution / Display Technology (Ruelberg)

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→ Project Media Production Technologies (Reiter)

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→ Project-based optics (Gartz)

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→ Radiation, radiometry, photometry (Gartz)

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→ Sensors and evaluation of measurements (May)

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→ Software Engineering (Kreiser)

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→ Software Lab (Nissen)

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→ Stereoscopy (Fischer)

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→ Switch-Mode Power Supplies (Dick)

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→ Systems on Programmable Chips (Krawutschke)

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→ Internetworking And Network Security\_(Grebe)

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→ Internship\_(BaTIN)

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→ Introduction to Fieldbus Systems\_(Bartz)

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→ IoT Protocols and Applications\_(Elders-Boll)

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→ IT Security\_(Knospe)

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→ Kolloquium zur Bachelorarbeit\_(BaET)

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→ Kolloquium zur Bachelorarbeit\_(BaMT)

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→ Kolloquium zur Bachelorarbeit\_(BaOPT)

→ Technical optics\_(Altmeyer)

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→ Technologien der augenoptischen Industrie\_(NN)

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→ wave optics, interference, diffraction\_(Gartz)

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→ Web Architectures\_(Wörzberger)

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→ Web Engineering 1\_(Backend)\_(NN)

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→ Web project\_(NN)

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→ Writing scientific papers\_(Weigand)

## – Level: Bachelor, Winter Semester

→ Acoustics for Engineers\_(Pörschmann)

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→ Analogue signals and systems\_(Elders-Boll)

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→ Analogue signals and systems\_(Lohner)

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→ Anerkennung "Staatlich geprüfter Augenoptiker"  
(BaOPT)

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→ Antenna Technology\_(Kronberger)

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→ Applied Mathematics\_(Rhein)

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→ Applied Statistics and Numerical Analysis\_(Rhein)

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→ Bachelor Thesis\_(BaTIN)

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→ Bachelorarbeit\_(BaET)

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→ Bachelorarbeit\_(BaMT)

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→ Bachelorarbeit\_(BaOPT)

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→ Basic Electrical Engineering for Computer  
Science and Engineering\_(Thieling)

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→ Basics of Media Design 2\_(Russi)

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→ Business and Law\_(Kim)

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→ Camera Technology\_(Fischer)

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→ Colloquium\_(BaTIN)

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→ Computer Animation\_(Grünvogel)

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→ Computer Generated Imagery\_(Fuhrmann)

→ Kolloquium zur Bachelorarbeit\_(BaMT)

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→ Kolloquium zur Bachelorarbeit\_(BaOPT)

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→ Laser Physics and Technology\_(Altmeyer)

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→ Light microscopy\_(Altmeyer)

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→ Light-Matter-Interaction\_(Oberheide)

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→ Machine Learnig\_(Thieling)

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→ Mathematics 1\_(Bold)

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→ Mathematics 1\_(Grünvogel)

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→ Mathematics 1\_(Knospe)

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→ Mathematics 1\_(Weigand)

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→ Media Design Conception and Storytelling  
(Russi)

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→ Media Distribution and Storage\_(Ruelberg)

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→ Media Law\_(BaMT)

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→ Medizinische Statistik und Studienplanung  
(BaOPT)

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→ Networking in automation technology.  
(Stockmann)

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→ Neuroophthalmologie\_(BaOPT)

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→ Operating Systems and Distributed Systems 1  
(Vogt)

→ Computer Science 1 (Fuhrmann)

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→ Computer Science 3 (Lo Iacono)

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→ Control Engineering (Krah)

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→ Control System Technology (Kreiser)

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→ Data Base Systems 1 (Behrend)

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→ Data Mining (Rhein)

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→ Data Mining (Rhein)

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→ Datenbanken (Behrend)

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→ design and 3D-CAD (Gartz)

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→ Development of Complex Software Systems (Nissen)

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→ Digital Computer (Thieling)

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→ Electrical Drives (Dick)

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→ Electrical Engineering (Basics) (Kronberger)

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→ Electrical Engineering 3 (Kronberger)

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→ Electrical Power Distribution (Waffenschmidt)

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→ Electronic Circuits (Schneider)

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→ Electronic Media 2 (Ruelberg)

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→ Electronics (Poggemann)

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→ Embedded Systems (Krawutschke)

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→ Energy Storage (Stadler)

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→ F07 Networks and Protocols (Grebe)

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→ Fahrmechanik (Frantzen)

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→ Film- and Postproduction (Gärtner)

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→ First term project (Gartz)

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→ Functional Safety (Krah)

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→ Fundamentals of Electrical Engineering 1 (May)

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→ Fundamentals of Electrical Engineering 3 (Evers)

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→ Fundamentals of Electrical Engineering 3 (May)

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→ Geo- und Solarthermie (Lambers)

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→ Geometrical Optics (Gartz)

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→ Optical metrology (Gartz)

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→ Pathologie (BaOPT)

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→ Pharmakologie (BaOPT)

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→ Photo Technology 1 (Fischer)

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→ Phototechnology 3 (Poggemann)

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→ Physics 2 (Humpert)

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→ Physics 2 (Kohlhof)

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→ Physics 2 (Oberheide)

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→ Practical Informatics 1 (Rosenthal)

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→ Practical Informatics 1 (Vogt)

---

→ Praxis- und Mobilitätsphase (BaMT)

---

→ Praxismodul 2 (BaOPT)

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→ Praxisprojekt (BaET)

---

→ Presentation and Communication (BaTIN)

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→ Principles of Networked IT Systems (Elders-Boll)

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→ Process Control Engineering (Große)

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→ Programming Practice (Yuan)

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→ Programming Project (Kreiser)

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→ Recipe Control (Große)

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→ Self-management in studies (Grünvogel)

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→ Signal Processing (Bartz)

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→ Signal Theory and Applied Mathematics (Kunz)

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→ Signalprocessing using Matlab/Python and Microprocessors (Elders-Boll)

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→ Simulation von Energiesystemen (Nebel)

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→ Software Engineering (Nissen)

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→ Software Management (Wörzberger)

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→ Solarenergie (Blieske)

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→ Source and Channel Coding (Dettmar)

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→ Spezielle Kontaktlinsen (BaOPT)

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→ System Design Lab (Wörzberger)

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→ [Graphentheorie \(Randerath\)](#).

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→ [Graphical User Interfaces \(Rosenthal\)](#).

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→ [High Voltage Technology \(Humpert\)](#).

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→ [Industrial Computer Vision \(Thieling\)](#).

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→ [Internship \(BaTIN\)](#).

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→ [Kinderoptometrie \(BaOPT\)](#).

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→ [Kolloquium zur Bachelorarbeit \(BaET\)](#).

→ [Theory of imaging \(Altmeyer\)](#).

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→ [Verteilte Datenverarbeitungssysteme \(Behrend\)](#).

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→ [Video Studio Technology \(Reiter\)](#).

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→ [Visual and Auditive Perception \(Kunz\)](#).

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→ [Web Architectures \(Wörzberger\)](#).

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→ [Web Engineering 2 \(Frontend\) \(NN\)](#).

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→ [Wind Energy \(Stadler\)](#).

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→ [Wireless Communications in the IoT \(Dettmar\)](#).

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→ [Writing scientific papers \(Weigand\)](#).

## – Level: Master, Summer Semester

→ [Advanced Channel Coding \(Dettmar\)](#).

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→ [Advanced Mathematics \(Knospe\)](#).

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→ [Applied Matheamtics \(Grünvogel\)](#).

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→ [Basics on Systems and Networks \(Kronberger\)](#).

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→ [Communication in Distributed Systems and Networks \(Jonas\)](#).

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→ [Computational Intelligence \(Bartz\)](#).

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→ [Cryptography \(Knospe\)](#).

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→ [Digital Motion Control \(Krah\)](#).

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→ [Electric vehicle drivetrain \(Lohner\)](#).

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→ [Electrical Power Grids for Renewable Energy \(Waffenschmidt\)](#).

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→ [Embedded Security \(Lemke-Rust\)](#).

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→ [Ethics \(MaTIN\)](#).

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→ [Finite element method in electrical engineering \(Evers\)](#).

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→ [High Voltage Transmission Technology \(Humpert\)](#).

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→ [Human Computer Interaction \(Fuhrmann\)](#).

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→ [Identification and Privacy Enhanced Technologies \(Ullmann\)](#).

→ [Master Thesis \(MaMI\)](#).

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→ [Master Thesis \(MaTIN\)](#).

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→ [Master Thesis Colloquium \(MaMT\)](#).

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→ [Master Thesis Defense \(MaTIN\)](#).

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→ [Master's project \(MaMT\)](#).

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→ [Masterarbeit \(MaCSN\)](#).

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→ [Masterarbeit \(MaET\)](#).

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→ [Next Generation Networks \(Grebe\)](#).

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→ [Nonlinear optics \(Oberheide\)](#).

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→ [Optical and wireless communication systems \(Uhde\)](#).

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→ [Optical Spectroscopy and Applications \(Gartz\)](#).

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→ [Optoelektronik \(NN\)](#).

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→ [Parallel Programming \(Fuhrmann\)](#).

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→ [Project Management \(Dettmar\)](#).

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→ [Research Project \(MaTIN\)](#).

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→ [Research Project \(MaCSN\)](#).

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→ [Research Project in Virtual Acoustics and Object Based Audio \(Reiter\)](#).

→ [image\\_processing\\_master](#) (Salmen).

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→ [Intelligent Information Systems](#) (Behrend).

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→ [Kolloquium zur Masterarbeit](#) (MaCSN).

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→ [Kolloquium zur Masterarbeit](#) (MaET).

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→ [Large and Cloud-based Software-Systems](#) (Wörzberger).

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→ [Machine Learning and Scientific Computing](#) (Rhein).

→ [Research Project Virtual and Augmented Reality](#) (Grünvogel).

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→ [Research Seminar](#) (Krah).

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→ [Technologies and Systems of Video Production](#) (Reiter).

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→ [Theoretical Computer Science](#) (Randerath).

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→ [Theoretical Electro Dynamics](#) (Kohlhof).

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→ [Virtual Acoustic Environments](#) (VAE) (Pörschmann).

## – Level: Master, Winter Semester

→ [Advanced Multimedia Communications](#) (Grebe).

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→ [Advanced Seminar on Media Technology](#) (MaMT).

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→ [Algorithms for video signal processing](#) (Ruelberg).

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→ [Alternative Computer Architectures and Programming Languages](#) (Wörzberger).

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→ [Audio and Video Technologies](#) (Ruelberg).

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→ [Combinatorial Optimization and Graph Algorithms](#) (Randerath).

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→ [Communication in Distributed Systems and Networks](#) (Jonas).

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→ [Digital Imaging](#) (Fischer).

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→ [Digital Signal Processing](#) (Elders-Boll).

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→ [Electric Railways](#) (Evers).

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→ [Embedded Systems in Media Technology](#) (Poggemann).

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→ [Energy Management in Interconnected Systems](#) (Stadler).

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→ [Ethics](#) (MaTIN).

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→ [IT Security](#) (Knospe).

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→ [Kolloquium zur Masterarbeit](#) (MaCSN).

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→ [Kolloquium zur Masterarbeit](#) (MaET).

→ [Micro and nano systems](#) (Kohlhof).

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→ [Optical Software Development](#) (Weigand).

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→ [Power Electronics for PV and Wind](#) (Dick).

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→ [Power Electronics for PV and Wind](#) (Lohner).

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→ [Project management](#) (Gartz).

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→ [Project Management](#) (Dettmar).

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→ [Quantum mechanics](#) (Oberheide).

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→ [Research Project](#) (MaTIN).

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→ [Research Project](#) (MaCSN).

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→ [Research Project in Virtual Acoustics and Object Based Audio](#) (Reiter).

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→ [Research Project Virtual and Augmented Reality](#) (Grünvogel).

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→ [Research Seminar](#) (Krah).

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→ [RF System Design](#) (Kronberger).

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→ [Scanning Microscopy](#) (Altmeyer).

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→ [Servicemanagement in Netzen](#) (Leischner).

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→ [Simulation of Illumination Systems](#) (Weigand).

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→ [Software Engineering by Components and Pattern](#) (Kreiser).

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→ [Special Aspects of Mobile Autonomous Systems](#) (Yuan).

→ Master Thesis (MaMT).

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→ Master Thesis (MaTIN).

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→ Master Thesis Colloquium (MaMT).

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→ Master Thesis Defense (MaTIN).

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→ Master's project (MaMT).

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→ Masterarbeit (MaCSN).

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→ Masterarbeit (MaET).

→ State Space Control (Große).

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→ Systems Engineering for Energy Efficiency (May).

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→ Virtual and Augmented Reality (Fuhrmann).

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→ Virtuelle Private Netze (Österreich).

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→ Zuverlässigkeit von Systemen (Jung).