

Exclosure to Subject Specific Regulations from 26.11.2014  
 for Master-Programme Elektrotechnik  
 at TUHH  
 Programme Director: Prof. Christian Schuster  
 Total: 120 CP  
 Number of Specialisations to choose: 1

# Course Scheme Master Electrical Engineering (ETMS)

Consolidated Version  
 for Study Cohort: WiSe 14/15  
 according to Decision of Academic Senate: 25.06.2014  
 and Approval of Chair from: 02.07.2014  
 In Force on: 01.10.2014

| Re com. Term   | Module Name (German)                             | Modul Name (English)               | Institute | C/EC (1) | CM/OM (2) | Grade | Examination Form(3) | CP (4) | Course Name (German)                             | Course Name (English)             | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV |
|--|--|------------------------------------|-----------|----------|-----------|-------|---------------------|--------|--|-----------------------------------|-------------------|--------------|---------|---------|
| <b>Core qualification</b> Compulsory Courses: 54 LP Optional Courses: 0 LP |  |                                    |           |          |           |       |                     |        |  |                                   |                   |              |         |         |
| 1  | CMOS-Nanoelektronik mit Praktikum                | CMOS Nanoelectronics with Practice | E-9       | C        | CM        | Yes   | Kl                  | 6      |  |                                   |                   |              |         |         |
|  |  |                                    |           |          |           |       |                     |        | CMOS-Nanoelektronik                              | CMOS Nanoelectronics              | VL                | EN           | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | CMOS-Nanoelektronik                              | CMOS Nanoelectronics              | UE                | EN           | 1       | 1       |
|  |  |                                    |           |          |           |       |                     |        | CMOS-Nanoelektronik                              | CMOS Nanoelectronics              | PR                | EN           | 2       | 1       |
| 1  | Digitale Nachrichtenübertragung                  | Digital Communications             | E-8       | C        | CM        | Yes   | Kl                  | 6      |  |                                   |                   |              |         |         |
|  |  |                                    |           |          |           |       |                     |        | Digitale Nachrichtenübertragung                  | Digital Communications            | VL                | DE/EN        | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Digitale Nachrichtenübertragung                  | Digital Communications            | HÜ                | DE/EN        | 1       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Praktikum Digitale Nachrichtenübertragung        | Laboratory Digital Communications | PR                | DE/EN        | 1       | 1       |
| 1  | Hochfrequenztechnik                              | Microwave Engineering              | E-3       | C        | CM        | Yes   | Kl                  | 6      |  |                                   |                   |              |         |         |
|  |  |                                    |           |          |           |       |                     |        | Hochfrequenztechnik                              | Microwave Engineering             | VL                | DE/EN        | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Hochfrequenztechnik                              | Microwave Engineering             | HÜ                | DE/EN        | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Hochfrequenztechnik                              | Microwave Engineering             | PR                | DE/EN        | 1       | 1       |
| 1  | Mikrosystemtechnik                               | Microsystem Engineering            | E-7       | C        | CM        | Yes   | Kl                  | 6      |  |                                   |                   |              |         |         |
|  |  |                                    |           |          |           |       |                     |        | Mikrosystemtechnik                               | Microsystem Engineering           | VL                | EN           | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Mikrosystemtechnik                               | Microsystem Engineering           | UE                | EN           | 1       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Mikrosystemtechnik                               | Microsystem Engineering           | POL               | EN           | 1       | 1       |
| 1  | Theorie und Entwurf regelungstechnischer Systeme | Control Systems Theory and Design  | E-14      | C        | CM        | Yes   | Kl                  | 6      |  |                                   |                   |              |         |         |
|  |  |                                    |           |          |           |       |                     |        | Theorie und Entwurf regelungstechnischer Systeme | Control Systems Theory and Design | VL                | EN           | 2       | 1       |
|  |  |                                    |           |          |           |       |                     |        | Theorie und Entwurf regelungstechnischer Systeme | Control Systems Theory and Design | UE                | EN           | 2       | 1       |
| 2  | Technischer Ergänzungskurs I (laut FSPO)         | Technical Complementary Course I   | E-18      | C        | CM        | Yes   | lt. FSPO            | 6      |  |                                   |                   |              |         |         |
| 3  | Technischer Ergänzungskurs II (laut FSPO)        | Technical Complementary Course II  | E-18      | C        | CM        | Yes   | lt. FSPO            | 6      |  |                                   |                   |              |         |         |
| 1-3  | Betrieb & Management                             | Business & Management              | W-1       | C        | OM        |       |                     | 6      | Selection out of Catalogue                       |                                   |                   |              |         |         |

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|---|---|---|-----------|----------|-----------|-------|---------------------|--------|---|--|-------------------|--------------|---------|---------|
| 1-3   | Nichttechnische Ergänzungskurse im Master                     | Nontechnical Elective Complementary Courses for Master  | 0-TUHH    | C        | OM        |       |                     | 6      | Selection out of Catalogue                          |  |                   |              |         |         |
| <b>Specialisation Microwave Engineering, Optics, and Electromagnetic Compatibility</b> Compulsory Courses: 0 LP Optional Courses: 36 LP |   |   |           |          |           |       |                     |        |   |  |                   |              |         |         |
| 2   | Bioelektromagnetik: Prinzipien und Anwendungen                | Bioelectromagnetics: Principles and Applications        | E-18      | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | Bioelektromagnetik: Prinzipien und Anwendungen      | Bioelectromagnetics: Principles and Applications       | VL                | DE/EN        | 3       | 2       |
|   |   |   |           |          |           |       |                     |        | Bioelektromagnetik: Prinzipien und Anwendungen      | Bioelectromagnetics: Principles and Applications       | UE                | DE/EN        | 2       | 2       |
| 2   | EMV I: Kopplungen, Gegenmaßnahmen und Prüfverfahren           | EMC I: Couplings, Countermeasures and Test Procedures   | E-18      | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | EMV I: Kopplungen, Gegenmaßnahmen und Prüfverfahren | EMC I: Couplings, Countermeasures, and Test Procedures | VL                | DE/EN        | 3       | 2       |
|   |   |   |           |          |           |       |                     |        | EMV I: Kopplungen, Gegenmaßnahmen und Prüfverfahren | EMC I: Couplings, Countermeasures, and Test Procedures | UE                | DE/EN        | 1       | 2       |
|   |   |   |           |          |           |       |                     |        | EMV I: Kopplungen, Gegenmaßnahmen und Prüfverfahren | EMC I: Couplings, Countermeasures, and Test Procedures | PR                | DE/EN        | 1       | 2       |
| 2   | Einführung in die Antennentheorie                             | Introduction to Antenna Theory                          | E-3       | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | Einführung in die Antennentheorie                   | Introduction To Antenna Theory                         | VL                | DE/EN        | 2       | 2       |
|   |   |   |           |          |           |       |                     |        | Einführung in die Antennentheorie                   | Introduction To Antenna Theory                         | HÜ                | DE/EN        | 1       | 2       |
|   |   |   |           |          |           |       |                     |        | Einführung in die Antennentheorie                   | Introduction To Antenna Theory                         | PR                | DE/EN        | 1       | 2       |
| 2   | Elektromagnetische Wellen                                     | Electromagnetic Waves                                   | E-3       | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | Elektromagnetische Wellen                           | Electromagnetic Waves                                  | VL                | DE/EN        | 2       | 2       |
|   |   |   |           |          |           |       |                     |        | Elektromagnetische Wellen                           | Electromagnetic Waves                                  | HÜ                | DE/EN        | 1       | 2       |
|   |   |   |           |          |           |       |                     |        | Elektromagnetische Wellen                           | Electromagnetic Waves                                  | PR                | DE/EN        | 1       | 2       |
| 2   | Faseroptik und Integrierte Optik                              | Fibre and Integrated Optics                             | E-12      | EC       | CM        | Yes   | KI                  | 4      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | Faseroptik und Integrierte Optik                    | Fibre and Integrated Optics                            | VL                | EN           | 2       | 2       |
|   |   |   |           |          |           |       |                     |        | Faseroptik und Integrierte Optik (Übung)            | Fibre and Integrated Optics (Problem Solving Course)   | UE                | EN           | 1       | 2       |
| 2   | Hochfrequenzbauelemente und -schaltungen I                    | Microwave Semiconductor Devices and Circuits I          | E-3       | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|   |   |   |           |          |           |       |                     |        | Hochfrequenzbauelemente und -schaltungen I          | Microwave Semiconductor Devices and Circuits I         | VL                | DE/EN        | 3       | 2       |
|   |   |   |           |          |           |       |                     |        | Hochfrequenzbauelemente und -schaltungen I          | Microwave Semiconductor Devices and Circuits I         | HÜ                | DE/EN        | 2       | 2       |
| 2   | Numerische Methoden zur Berechnung elektromagnetischer Felder | Numerical Methods for Electromagnetic Field Computation | E-18      | EC       | CM        | Yes   | MdIP                | 4      |   |  |                   |              |         |         |

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|--------------|--|---|-------------|----------|-----------|-------|---------------------|--------|--|---|-------------------|--------------|---------|---------|
|              |  |   |             |          |           |       |                     |        | Numerische Methoden zur Berechnung elektromagnetischer Felder                  | Numerical Methods for Electromagnetic Field Computation                             | VL                | DE/EN        | 2       | 2       |
|              |  |   |             |          |           |       |                     |        | Numerische Methoden zur Berechnung elektromagnetischer Felder                  | Numerical Methods for Electromagnetic Field Computation                             | HÜ                | DE/EN        | 1       | 2       |
| 2            | Optoelektronik I - Wellenoptik   | Optoelectronics I - Wave Optics   | E-12        | EC       | CM        | Yes   | KI                  | 4      |  |   |                   |              |         |         |
|              |  |   |             |          |           |       |                     |        | Optoelektronik I: Wellenoptik  | Optoelectronics I: Wave Optics  | VL                | EN           | 2       | 2       |
|              |  |   |             |          |           |       |                     |        | Optoelektronik I: Wellenoptik (Übung)  | Optoelectronics I: Wave Optics (Problem Solving Course)                             | UE                | EN           | 1       | 2       |
| 3            | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme        | EMC II: Signal Integrity and Power Supply of Electronic Systems                     | E-18        | EC       | CM        | Yes   | MdIP                | 6      |  |   |                   |              |         |         |
|              |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme        | EMC II: Signal Integrity and Power Supply of Electronic Systems                     | VL                | DE/EN        | 3       | 3       |
|              |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme        | EMC II: Signal Integrity and Power Supply of Electronic Systems                     | UE                | DE/EN        | 1       | 3       |
|              |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme        | EMC II: Signal Integrity and Power Supply of Electronic Systems                     | PR                | DE/EN        | 1       | 3       |
| 3            | Forschungsprojekt in HF-Technik, Optik und Elektromagnetischer Verträglichkeit | Research Project in Microwave Engineering, Optics and Electromagnetic Compatibility | not defined | EC       | CM        | No    | PA                  | 6      |  |   |                   |              |         |         |
|              |  |   |             |          |           |       |                     |        | Forschungsprojekt in HF-Technik, Optik und Elektromagnetischer Verträglichkeit | Research Project in Microwave Engineering, Optics and Electromagnetic Compatibility | PK                | DE/EN        | 5       | 3       |
| 3            | Hochfrequenz- und Nachrichtentechnik in der Avionik                            | High Frequency and Communication Theory in Avionics                                 | E-18        | EC       | CM        | Yes   | MdIP                | 6      |  |   |                   |              |         |         |
|              |  |   |             |          |           |       |                     |        | Hochfrequenz- und Nachrichtentechnik in der Avionik                            | High Frequency and Communication Engineering in Avionics                            | VL                | DE/EN        | 2       | 3       |
|              |  |   |             |          |           |       |                     |        | Hochfrequenz- und Nachrichtentechnik in der Avionik                            | High Frequency and Communication Engineering in Avionics                            | UE                | DE/EN        | 2       | 3       |
| 3            | Hochfrequenzbauelemente und -schaltungen II                                    | Microwave Semiconductor Devices and Circuits II                                     | E-3         | EC       | CM        | Yes   | MdIP                | 6      |  |   |                   |              |         |         |
|              |  |   |             |          |           |       |                     |        | Hochfrequenzbauelemente und -schaltungen II                                    | Microwave Semiconductor Devices and Circuits II                                     | VL                | DE/EN        | 1       | 3       |
|              |  |   |             |          |           |       |                     |        | Hochfrequenzbauelemente und -schaltungen II                                    | Microwave Semiconductor Devices and Circuits II                                     | HÜ                | DE/EN        | 1       | 3       |
|              |  |   |             |          |           |       |                     |        | Praktikum Mikrowellenschaltungsentwurf   | Microwave Circuit Design Laboratory   | PR                | DE/EN        | 4       | 3       |

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|---|--|--|-----------|----------|-----------|-------|---------------------|--------|--|--|-------------------|--------------|---------|---------|
| 3   | Optoelektronik II - Quantenoptik                                       | Optoelectronics II - Quantum Optics                                | E-12      | EC       | CM        | Yes   | KI                  | 4      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Optoelektronik II: Quantenoptik  | Optoelectronics II: Quantum Optics                                 | VL                | EN           | 2       | 3       |
|   |  |  |           |          |           |       |                     |        | Optoelektronik II: Quantenoptik (Übung)                                | Optoelectronics II: Quantum Optics (Problem Solving Course)        | UE                | EN           | 1       | 3       |
| 3   | Seminar zu Hochfrequenztechnik und elektromagnetischer Verträglichkeit | Seminar on Microwave Engineering and Electromagnetic Compatibility | E-18      | EC       | CM        | No    | Re                  | 2      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Seminar zu Hochfrequenztechnik und elektromagnetischer Verträglichkeit | Seminar on Microwave Engineering and Electromagnetic Compatibility | SE                | EN           | 2       | 3       |
| <b>Specialisation Medical Technology</b> Compulsory Courses: 0 LP Optional Courses: 36 LP |  |  |           |          |           |       |                     |        |  |  |                   |              |         |         |
| 2   | Bildgebende Systeme in der Medizin                                     | Medical Imaging Systems  | M-3       | EC       | CM        | Yes   | KI                  | 3      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Bildgebende Systeme in der Medizin                                     | Medical Imaging Systems  | VL                | DE           | 2       | 2       |
| 2   | Bioelektromagnetik: Prinzipien und Anwendungen                         | Bioelectromagnetics: Principles and Applications                   | E-18      | EC       | CM        | Yes   | MdIP                | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Bioelektromagnetik: Prinzipien und Anwendungen                         | Bioelectromagnetics: Principles and Applications                   | VL                | DE/EN        | 3       | 2       |
|   |  |  |           |          |           |       |                     |        | Bioelektromagnetik: Prinzipien und Anwendungen                         | Bioelectromagnetics: Principles and Applications                   | UE                | DE/EN        | 2       | 2       |
| 2   | MED I: Medizinische Grundlagen I                                       | MED I: Medical Basics I  | M-3       | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Einführung in die Anatomie   | Introduction to Anatomy  | VL                | DE           | 2       | 2       |
|   |  |  |           |          |           |       |                     |        | Einführung in die Radiologie und Strahlentherapie                      | Introduction to Radiology and Radiation Therapy                    | VL                | DE           | 2       | 2       |
| 2   | MED II: Medizinische Grundlagen II                                     | MED II: Medical Basics II  | M-3       | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Einführung in die Biochemie und Molekularbiologie                      | Introduction to Biochemistry and Molecular Biology                 | VL                | DE           | 2       | 2       |
|   |  |  |           |          |           |       |                     |        | Einführung in die Physiology   | Introduction to Physiology   | VL                | DE           | 2       | 2       |
| 2   | Medizintechnik Projekt   | Medical Technology Lab   | E-1       | EC       | CM        | No    | PA                  | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Medizintechnik Projekt   | Medical Technology Lab   | POL               | DE/EN        | 6       | 2       |
| 2   | Regelungstechnische Methoden für die Medizintechnik                    | Feedback Control in Medical Technology                             | E-14      | EC       | CM        | Yes   | MdIP                | 3      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Regelungstechnische Methoden für die Medizintechnik                    | Feedback Control in Medical Technology                             | VL                | DE           | 2       | 2       |
| 2   | Robotik und Navigation in der Medizin                                  | Robotics and Navigation in Medicine                                | E-1       | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Robotik und Navigation in der Medizin                                  | Robotics and Navigation in Medicine                                | VL                | EN           | 2       | 2       |
|   |  |  |           |          |           |       |                     |        | Robotik und Navigation in der Medizin                                  | Robotics and Navigation in Medicine                                | UE                | EN           | 1       | 2       |
|   |  |  |           |          |           |       |                     |        | Robotik und Navigation in der Medizin                                  | Robotics and Navigation in Medicine                                | PS                | EN           | 2       | 2       |
| 3   | Digitale Bildanalyse   | Digital Image Analysis   | E-2       | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|   |  |  |           |          |           |       |                     |        | Digitale Bildanalyse   | Digital Image Analysis   | VL                | EN           | 4       | 3       |

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|--|--|---|-------------|----------|-----------|-------|---------------------|--------|---|--|-------------------|--------------|---------|---------|
| 3  | Forschungsprojekt in Medizintechnik                  | Reserach Project in Medical Technology              | not defined | EC       | CM        | No    | PA                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Forschungsprojekt in Medizintechnik                 | Research Project in Medical Technology             | PK                | DE/EN        | 5       | 3       |
| 3  | Intelligente Systeme in der Medizin                  | Intelligent Systems in Medicine                     | E-1         | EC       | CM        | Yes   | KI                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Intelligente Systeme in der Medizin                 | Intelligent Systems in Medicine                    | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Intelligente Systeme in der Medizin                 | Intelligent Systems in Medicine                    | UE                | EN           | 1       | 3       |
|  |  |   |             |          |           |       |                     |        | Intelligente Systeme in der Medizin                 | Intelligent Systems in Medicine                    | PS                | EN           | 2       | 3       |
| 3  | Medizinelektronik                                    | Electronic Circuits for Medical Applications        | E-9         | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik                                   | Electronic Circuits for Medical Applications       | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik                                   | Electronic Circuits for Medical Applications       | UE                | EN           | 1       | 3       |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik                                   | Electronic Circuits for Medical Applications       | PR                | EN           | 1       | 3       |
| 3  | Mikrosystemtechnologie in Theorie und Praxis         | Microsystems Technology in Theory and Practice      | E-7         | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Mikrosystemtechnologie                              | Microsystems Technology                            | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Mikrosystemtechnologie                              | Microsystems Technology                            | POL               | EN           | 2       | 3       |
| <b>Specialisation Information and Communication Systems</b> Compulsory Courses: 0 LP Optional Courses: 36 LP |  |   |             |          |           |       |                     |        |   |  |                   |              |         |         |
| 2  | Informationstheorie und Codierung                    | Information Theory and Coding                       | E-8         | EC       | CM        | Yes   | KI                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Informationstheorie und Codierung                   | Information Theory and Coding                      | VL                | DE/EN        | 3       | 2       |
|  |  |   |             |          |           |       |                     |        | Informationstheorie und Codierung                   | Information Theory and Coding                      | HÜ                | DE/EN        | 1       | 2       |
| 2  | Kommunikationsnetze II - Simulation und Modellierung | Communication Networks II - Simulation and Modeling | E-4         | EC       | CM        | Yes   | Ko                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Simulation und Modellierung von Kommunikationsnetze | Simulation and Modelling of Communication Networks | POL               | EN           | 5       | 2       |
| 2  | Mobilkommunikation                                   | Mobile Communications                               | E-8         | EC       | CM        | Yes   | KI                  | 4      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Mobilkommunikation                                  | Mobile Communications                              | VL                | EN           | 2       | 2       |
|  |  |   |             |          |           |       |                     |        | Mobilkommunikation                                  | Mobile Communications                              | HÜ                | EN           | 1       | 2       |
| 2  | Mustererkennung und Datenkompression                 | Pattern Recognition and Data Compression            | E-2         | EC       | CM        | Yes   | KI                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Mustererkennung und Datenkompression                | Pattern Recognition and Data Compression           | VL                | EN           | 4       | 2       |
| 2  | Seminar Informationstechnik                          | Seminar Communications Engineering                  | E-8         | EC       | CM        | Yes   | Re                  | 2      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Seminar Informationstechnik                         | Seminar Communications Engineering                 | SE                | DE/EN        | 2       | 2       |
| 3  | Digitale Audiosignalverarbeitung                     | Digital Audio Signal Processing                     | E-8         | EC       | CM        | Yes   | KI                  | 4      |   |  |                   |              |         |         |

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|--|---|---|-------------|----------|-----------|-------|---------------------|--------|---|---|-------------------|--------------|---------|---------|
|  |   |   |             |          |           |       |                     |        | Digitale Audiosignalverarbeitung                            | Digital Audio Signal Processing                           | VL                | EN           | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Digitale Audiosignalverarbeitung                            | Digital Audio Signal Processing                           | HÜ                | EN           | 1       | 3       |
| 3  | Digitale Bildanalyse  | Digital Image Analysis                                    | E-2         | EC       | CM        | Yes   | KI                  | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Digitale Bildanalyse  | Digital Image Analysis                                    | VL                | EN           | 4       | 3       |
| 3  | Digitale Signalverarbeitung und Digitale Filter             | Digital Signal Processing and Digital Filters             | E-8         | EC       | CM        | Yes   | KI                  | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Digitale Signalverarbeitung und Digitale Filter             | Digital Signal Processing and Digital Filters             | VL                | EN           | 3       | 3       |
|  |   |   |             |          |           |       |                     |        | Digitale Signalverarbeitung und Digitale Filter             | Digital Signal Processing and Digital Filters             | HÜ                | EN           | 1       | 3       |
| 3  | Forschungsprojekt in Nachrichten- und Kommunikationstechnik | Research Project in Information and Communication Systems | not defined | EC       | CM        | No    | PA                  | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Forschungsprojekt in Nachrichten- und Kommunikationstechnik | Research Project in Information and Communication Systems | PK                | DE/EN        | 5       | 3       |
| 3  | Hochfrequenz- und Nachrichtentechnik in der Avionik         | High Frequency and Communication Theory in Avionics       | E-18        | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Hochfrequenz- und Nachrichtentechnik in der Avionik         | High Frequency and Communication Engineering in Avionics  | VL                | DE/EN        | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Hochfrequenz- und Nachrichtentechnik in der Avionik         | High Frequency and Communication Engineering in Avionics  | UE                | DE/EN        | 2       | 3       |
| 3  | Kommunikationsnetze I - Analyse und Struktur                | Communication Networks I - Analysis and Structure         | E-4         | EC       | CM        | Yes   | Ko                  | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Analyse und Struktur von Kommunikationsnetzen               | Analysis and Structure of Communication Networks          | VL                | EN           | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Ausgewählte Themen der Kommunikationsnetze                  | Selected Topics of Communication Networks                 | POL               | EN           | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Übung Kommunikationsnetze                                   | Communication Networks Exercise                           | POL               | EN           | 1       | 3       |
| 3  | Moderne Funkssysteme  | Modern Wireless Systems                                   | E-8         | EC       | CM        | Yes   | MdIP                | 3      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Moderne Funkssysteme  | Modern Wireless Systems                                   | VL                | EN           | 2       | 3       |
| 3  | Traffic Engineering   | Traffic Engineering                                       | E-4         | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Seminar Traffic Engineering                                 | Seminar Traffic Engineering                               | SE                | EN           | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Traffic Engineering   | Traffic Engineering                                       | VL                | EN           | 2       | 3       |
|  |   |   |             |          |           |       |                     |        | Traffic Engineering Übung                                   | Traffic Engineering Exercises                             | UE                | EN           | 1       | 3       |
| <b>Specialisation Nanoelectronics and Microsystems Technology</b> Compulsory Courses: 0 LP Optional Courses: 36 LP |   |   |             |          |           |       |                     |        |   |   |                   |              |         |         |
| 2  | Grundlagen des IC-Entwurfes                                 | Fundamentals of IC Design                                 | E-9         | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|  |   |   |             |          |           |       |                     |        | Grundlagen des IC-Entwurfes                                 | Fundamentals of IC Design                                 | VL                | DE/EN        | 2       | 2       |
|  |   |   |             |          |           |       |                     |        | Grundlagen des IC-Entwurfes                                 | Fundamentals of IC Design                                 | PR                | DE/EN        | 2       | 2       |
| 2  | Halbleiterseminar   | Semiconductor Seminar                                     | E-9         | EC       | CM        | Yes   | Re                  | 2      |   |   |                   |              |         |         |

| Re com. Term | Module Name (German)  | Modul Name (English)  | Institute | C/EC (1) | CM/OM (2) | Grade | Examination Form(3) | CP (4) | Course Name (German)  | Course Name (English)   | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV |
|--------------|---|---|-----------|----------|-----------|-------|---------------------|--------|---|---|-------------------|--------------|---------|---------|
|              |   |   |           |          |           |       |                     |        | Halbleiterseminar   | Semiconductor Seminar   | SE                | EN           | 2       | 2       |
| 2            | Halbleitertechnologie   | Semiconductor Technology  | E-7       | EC       | CM        | Yes   | MdIP                | 7      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Halbleitertechnologie   | Semiconductor Technology  | VL                | DE/EN        | 4       | 2       |
|              |   |   |           |          |           |       |                     |        | Halbleitertechnologie   | Semiconductor Technology  | PR                | DE/EN        | 2       | 2       |
| 2            | Integrierte Schaltungen   | Integrated Circuits   | E-9       | EC       | CM        | Yes   | MdIP                | 3      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Integrierte Schaltungen   | Integrated Circuits   | VL                | DE           | 2       | 2       |
| 2            | Mikrocontrollerschaltungen: Realisierung in Hard- und Software          | Microcontroller Circuits: Implementation in Hardware and Software | E-19      | EC       | CM        | Yes   | SA                  | 2      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Mikrocontrollerschaltungen - Realisierung in Hard- und Software | Microcontroller Circuits: Implementation in Hardware and Software | SE                | DE           | 2       | 2       |
| 2            | Mikrosystementwurf  | Microsystem Design  | E-7       | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Mikrosystementwurf  | Microsystem Design  | VL                | EN           | 2       | 2       |
|              |   |   |           |          |           |       |                     |        | Mikrosystementwurf  | Microsystem Design  | PR                | EN           | 3       | 2       |
| 2            | Numerische Methoden zur Berechnung elektromagnetischer Felder           | Numerical Methods for Electromagnetic Field Computation           | E-18      | EC       | CM        | Yes   | MdIP                | 4      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Numerische Methoden zur Berechnung elektromagnetischer Felder   | Numerical Methods for Electromagnetic Field Computation           | VL                | DE/EN        | 2       | 2       |
|              |   |   |           |          |           |       |                     |        | Numerische Methoden zur Berechnung elektromagnetischer Felder   | Numerical Methods for Electromagnetic Field Computation           | HÜ                | DE/EN        | 1       | 2       |
| 2            | Optoelektronik I - Wellenoptik  | Optoelectronics I - Wave Optics                                   | E-12      | EC       | CM        | Yes   | KI                  | 4      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Optoelektronik I: Wellenoptik                                   | Optoelectronics I: Wave Optics                                    | VL                | EN           | 2       | 2       |
|              |   |   |           |          |           |       |                     |        | Optoelektronik I: Wellenoptik (Übung)                           | Optoelectronics I: Wave Optics (Problem Solving Course)           | UE                | EN           | 1       | 2       |
| 2-3          | Design von hochkomplexen integrierten Systemen und CAD-Werkzeuge        | Design of Highly Complex Integrated Systems and CAD Tools         | E-9       | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Design von hochkomplexen integrierten Systemen                  | Design of Highly Complex Integrated Systems                       | VL                | EN           | 2       | 2       |
|              |   |   |           |          |           |       |                     |        | CAD-Werkzeuge   | CAD Tools   | VL                | EN           | 2       | 3       |
| 2-3          | Praktischer Schaltungsentwurf analog und digital                        | Laboratory: Analog and Digital Circuit Design                     | E-9       | EC       | CM        | Yes   | KI                  | 6      |   |   |                   |              |         |         |
|              |   |   |           |          |           |       |                     |        | Praktischer Schaltungsentwurf digital                           | Laboratory: Digital Circuit Design                                | PR                | DE           | 2       | 2       |
|              |   |   |           |          |           |       |                     |        | Praktischer Schaltungsentwurf analog                            | Laboratory: Analog Circuit Design                                 | PR                | DE           | 2       | 3       |
| 3            | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme | EMC II: Signal Integrity and Power Supply of Electronic Systems   | E-18      | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |

| Re com. Term   | Module Name (German)                                       | Modul Name (English)  | Institute   | C/EC (1) | CM/OM (2) | Grade | Examination Form(3) | CP (4) | Course Name (German)  | Course Name (English)  | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV |
|--|--|---|-------------|----------|-----------|-------|---------------------|--------|---|--|-------------------|--------------|---------|---------|
|  |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme | EMC II: Signal Integrity and Power Supply of Electronic Systems  | VL                | DE/EN        | 3       | 3       |
|  |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme | EMC II: Signal Integrity and Power Supply of Electronic Systems  | UE                | DE/EN        | 1       | 3       |
|  |  |   |             |          |           |       |                     |        | EMV II: Signalintegrität und Spannungsversorgung elektronischer Systeme | EMC II: Signal Integrity and Power Supply of Electronic Systems  | PR                | DE/EN        | 1       | 3       |
| 3  | Forschungsprojekt in Nanoelektronik und Mikrosystemtechnik | Research Project in Nanoelectronics and Microsystems Technology | not defined | EC       | CM        | No    | PA                  | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Forschungsprojekt in Nanoelektronik und Mikrosystemtechnik              | Forschungsprojekt in Nanoelectronics and Microsystems Technology | PK                | DE/EN        | 5       | 3       |
| 3  | Medizinelektronik  | Electronic Circuits for Medical Applications                    | E-9         | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik   | Electronic Circuits for Medical Applications                     | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik   | Electronic Circuits for Medical Applications                     | UE                | EN           | 1       | 3       |
|  |  |   |             |          |           |       |                     |        | Medizinelektronik   | Electronic Circuits for Medical Applications                     | PR                | EN           | 1       | 3       |
| 3  | Mikrosystemtechnologie in Theorie und Praxis               | Microsystems Technology in Theory and Practice                  | E-7         | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Mikrosystemtechnologie  | Microsystems Technology  | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Mikrosystemtechnologie  | Microsystems Technology  | POL               | EN           | 2       | 3       |
| 3  | Optoelektronik II - Quantenoptik                           | Optoelectronics II - Quantum Optics                             | E-12        | EC       | CM        | Yes   | KI                  | 4      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Optoelektronik II: Quantenoptik   | Optoelectronics II: Quantum Optics                               | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Optoelektronik II: Quantenoptik (Übung)                                 | Optoelectronics II: Quantum Optics (Problem Solving Course)      | UE                | EN           | 1       | 3       |
| <b>Specialisation Control and Power Systems</b> Compulsory Courses: 0 LP Optional Courses: 36 LP |  |   |             |          |           |       |                     |        |   |  |                   |              |         |         |
| 2  | Approximation und Stabilität                               | Approximation and Stability                                     | E-10        | EC       | CM        | Yes   | MdIP                | 6      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Approximation und Stabilität  | Approximation and Stability                                      | VL                | DE/EN        | 2       | 2       |
|  |  |   |             |          |           |       |                     |        | Approximation und Stabilität  | Approximation and Stability                                      | UE                | DE/EN        | 1       | 2       |
|  |  |   |             |          |           |       |                     |        | Approximation und Stabilität  | Approximation and Stability                                      | SE                | DE/EN        | 1       | 2       |
| 2  | Humanoide Robotik  | Humanoid Robotic  | E-14        | EC       | CM        | Yes   | Re                  | 2      |   |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Humanoide Robotik   | Humanoid Robotics  | SE                | DE           | 2       | 2       |
| 2  | Lineare und Nichtlineare Systemidentifikation              | Linear and Nonlinear System Identifikation                      | E-14        | EC       | CM        | Yes   | MdIP                | 3      |   |  |                   |              |         |         |



| Re com. Term | Module Name (German)   | Modul Name (English)  | Institute | C/EC (1) | CM/OM (2) | Grade | Examination Form(3) | CP (4) | Course Name (German)  | Course Name (English)   | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV |
|--------------|--|---|-----------|----------|-----------|-------|---------------------|--------|---|---|-------------------|--------------|---------|---------|
|              |  |   |           |          |           |       |                     |        | Lineare und Nichtlineare Systemidentifikation                   | Linear and Nonlinear System Identification                        | VL                | EN           | 2       | 2       |
| 2            | Mikrocontrollerschaltungen: Realisierung in Hard- und Software | Microcontroller Circuits: Implementation in Hardware and Software | E-19      | EC       | CM        | Yes   | SA                  | 2      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Mikrocontrollerschaltungen - Realisierung in Hard- und Software | Microcontroller Circuits: Implementation in Hardware and Software | SE                | DE           | 2       | 2       |
| 2            | Numerik gewöhnlicher Differentialgleichungen                   | Numerical Treatment of Ordinary Differential Equations            | E-10      | EC       | CM        | Yes   | MdIP                | 6      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Numerik gewöhnlicher Differentialgleichungen                    | Numerical Treatment of Ordinary Partial Differential Equations    | VL                | DE/EN        | 2       | 2       |
|              |  |   |           |          |           |       |                     |        | Numerik gewöhnlicher Differentialgleichungen                    | Numerical Treatment of Ordinary Partial Differential Equations    | UE                | DE/EN        | 2       | 2       |
| 2            | Optimale und robuste Regelung                                  | Optimal and Robust Control  | E-14      | EC       | CM        | Yes   | MdIP                | 4      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Optimale und robuste Regelung                                   | Optimal and Robust Control  | VL                | EN           | 2       | 2       |
|              |  |   |           |          |           |       |                     |        | Optimale und robuste Regelung                                   | Optimal and Robust Control  | UE                | EN           | 1       | 2       |
| 2            | Praktikum Regelungstechnik                                     | Control Lab   | E-14      | EC       | CM        | No    | Re                  | 2      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Praktikum Regelungstechnik I                                    | Control Lab I   | PR                | EN           | 1       | 2       |
|              |  |   |           |          |           |       |                     |        | Praktikum Regelungstechnik II                                   | Control Lab II  | PR                | EN           | 1       | 2       |
| 2            | Prozessmesstechnik   | Process Measurement Engineering                                   | E-18      | EC       | CM        | Yes   | MdIP                | 4      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Prozessmesstechnik  | Process Measurement Engineering                                   | VL                | DE/EN        | 2       | 2       |
|              |  |   |           |          |           |       |                     |        | Prozessmesstechnik  | Process Measurement Engineering                                   | HÜ                | DE/EN        | 1       | 2       |
| 2            | Regelungstechnische Methoden für die Medizintechnik            | Feedback Control in Medical Technology                            | E-14      | EC       | CM        | Yes   | MdIP                | 3      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Regelungstechnische Methoden für die Medizintechnik             | Feedback Control in Medical Technology                            | VL                | DE           | 2       | 2       |
| 3            | Ausgewählte Themen der Regelungstechnik                        | Advanced Topics in Control  | E-14      | EC       | CM        | Yes   | MdIP                | 4      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Ausgewählte Themen der Regelungstechnik                         | Advanced Topics in Control  | VL                | EN           | 2       | 3       |
|              |  |   |           |          |           |       |                     |        | Ausgewählte Themen der Regelungstechnik                         | Advanced Topics in Control  | UE                | EN           | 1       | 3       |
| 3            | Digitale Signalverarbeitung und Digitale Filter                | Digital Signal Processing and Digital Filters                     | E-8       | EC       | CM        | Yes   | KI                  | 6      |   |   |                   |              |         |         |
|              |  |   |           |          |           |       |                     |        | Digitale Signalverarbeitung und Digitale Filter                 | Digital Signal Processing and Digital Filters                     | VL                | EN           | 3       | 3       |
|              |  |   |           |          |           |       |                     |        | Digitale Signalverarbeitung und Digitale Filter                 | Digital Signal Processing and Digital Filters                     | HÜ                | EN           | 1       | 3       |

| Re com. Term   | Module Name (German)                               | Modul Name (English)                              | Institute   | C/EC (1) | CM/OM (2) | Grade | Examination Form(3) | CP (4) | Course Name (German)                               | Course Name (English)                            | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV |
|--|--|---|-------------|----------|-----------|-------|---------------------|--------|--|--|-------------------|--------------|---------|---------|
| 3  | Elektrische Energietechnik                         | Electrical Energy Technology                      | V-9         | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Elektrische Energieübertragung und -verteilung     | Electrical Energy Transmission and Distribution  | VL                | DE           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Grundlagen der elektrischen Energietechnik         | Basics of the Electrical Energy Technology       | VL                | DE           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Netzintegration und elektrische Energiespeicherung | Grid Integration and Electrical Energy Storage   | VL                | DE           | 2       | 3       |
| 3  | Forschungsprojekt in Regelungs- und Energietechnik | Research Project in Control and Power Systems     | not defined | EC       | CM        | No    | PA                  | 6      |  |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Forschungsprojekt in Regelungs- und Energietechnik | Research Project in Control and Power Systems    | PK                | DE/EN        | 5       | 3       |
| 3  | Kommunikationsnetze I - Analyse und Struktur       | Communication Networks I - Analysis and Structure | E-4         | EC       | CM        | Yes   | Ko                  | 6      |  |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Analyse und Struktur von Kommunikationsnetzen      | Analysis and Structure of Communication Networks | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Ausgewählte Themen der Kommunikationsnetze         | Selected Topics of Communication Networks        | POL               | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Übung Kommunikationsnetze                          | Communication Networks Exercise                  | POL               | EN           | 1       | 3       |
| 3  | Prozessautomatisierungstechnik                     | Industrial Process Automation                     | E-1         | EC       | CM        | Yes   | KI                  | 6      |  |  |                   |              |         |         |
|  |  |   |             |          |           |       |                     |        | Prozessautomatisierungstechnik                     | Industrial Process Automation                    | VL                | EN           | 2       | 3       |
|  |  |   |             |          |           |       |                     |        | Prozessautomatisierungstechnik                     | Industrial Process Automation                    | UE                | EN           | 2       | 3       |
| <b>Thesis</b> Compulsory Courses: 30 LP Optional Courses: 0 LP |  |   |             |          |           |       |                     |        |  |  |                   |              |         |         |
| 4  | Masterarbeit                                       | Master Thesis                                     | not defined | C        | CM        | Yes   | lt. FSPO            | 30     |  |  |                   |              |         |         |

#### Explanation:

<sup>1</sup>C=Compulsory, EC=Elective Compulsory

<sup>2</sup>CM=Compulsory Defined Module, OM=Optional Defined Module

<sup>3</sup>KI=Written exam, SA=Written elaboration, Re=Presentation, MdIP=Oral exam, KI=Written exam, lt. FSPO=according to Subject Specific Regulations, Re=Presentation, Ko=Colloquium, MdIP=Oral exam, SA=Written elaboration, PA=Project, HA=Homework, PA=Project

<sup>4</sup>CP=Credit Points

<sup>5</sup>VL=Lecture, SE=Seminar, UE=Recitation Section (small), POL=Problem-based Learning, PR=Laboratory Course, PS=Project Seminar, PK=Projection Course, HÜ=Recitation Section (large)

<sup>6</sup>DE=German, EN=English, DE/EN=German and English

<sup>7</sup>SWS=Contact hours