

Exclosure to Subject Specific Regulations from 25.05.2016
for Master-Programme Microelectronics and Microsystems
at TUHH

Programme Director: Prof. Hoc Khiem Trieu

Total: 120 CP

Number of Specialisations to choose: 1

Course Scheme Master Microelectronics and Microsystems (IMPMM)

Consolidated Version
for Study Cohort: WiSe 16/17
according to Decision of Academic Senate: 26.04.2017
and Approval of Chair from: 17.05.2017
Replaces Version from: 23.03.2016
In Force on: 01.10.2017
Out of Force on: 30.09.2019

| 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 |
|---|---|--|-----------|----------|-----------|-------|---------------------|--------|-------------------------------------|---------------------------|-------------------|--------------|---------|---------|
| Core qualification Compulsory Courses: 28 LP Optional Courses: 44 LP | | | | | | | | | | | | | | |
| 1 | CMOS-Nanoelektronik mit Praktikum | CMOS Nanoelectronics with Practice | E-9 | EC | CM | Yes | KI | 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 | Elektronische Bauelemente und Schaltungen | Electronic Devices and Circuits | E-9 | EC | CM | Yes | MdIP | 6 | | | | | | |
| | | | | | | | | | Elektronische Bauelemente für IMPMM | Electronic Devices | VL | EN | 2 | 1 |
| | | | | | | | | | Schaltungsdesign | Circuit Design | VL | EN | 2 | 1 |
| 1 | Mikrosystemtechnik | Microsystem Engineering | E-7 | EC | CM | Yes | KI | 6 | | | | | | |
| | | | | | | | | | Mikrosystemtechnik | Microsystem Engineering | VL | EN | 2 | 1 |
| | | | | | | | | | Mikrosystemtechnik | Microsystem Engineering | UE | EN | 1 | 1 |
| | | | | | | | | | Mikrosystemtechnik | Microsystem Engineering | POL | EN | 1 | 1 |
| 1 | Mikrosystemtechnologie in Theorie und Praxis | Microsystems Technology in Theory and Practice | E-7 | EC | CM | Yes | MdIP | 6 | | | | | | |
| | | | | | | | | | Mikrosystemtechnologie | Microsystems Technology | VL | EN | 2 | 1 |
| | | | | | | | | | Mikrosystemtechnologie | Microsystems Technology | POL | EN | 2 | 1 |
| 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 | | | | | | |
| | | | | | | | | | Halbleiterseminar | Semiconductor Seminar | SE | EN | 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 | Technischer Ergänzungskurs für IMPMM - Bereich ET (laut FSPO) | Technical Elective Complementary Course for IMPMM - field ET (according to Subject Specific Regulations) | E-9 | EC | CM | Yes | lt. FSPO | 6 | | | | | | |

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|--------------|---|--|-----------|----------|-----------|-------|---------------------|--------|---------------------------------------|------------------------------------|-------------------|--------------|---------|---------|
| 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 | Projektarbeit IMPMM | Project Work IMPMM | E-9 | C | CM | Yes | PA It. FSPO | 16 | | | | | | |
| 3 | Seminar Informationstechnik | Seminar Communications Engineering | E-8 | EC | CM | Yes | Re | 2 | | | | | | |
| | | | | | | | | | Seminar Informationstechnik | Seminar Communications Engineering | SE | DE/EN | 2 | 3 |
| 3 | Technischer Ergänzungskurs für IMPMM - Bereich TUHH (laut FSPO) | Technical Elective Complementary Course for IMPMM - field TUHH (according to Subject Specific Regulations) | E-9 | EC | CM | Yes | lt. FSPO | 6 | | | | | | |
| 1-3 | Betrieb & Management | Business & Management | W-1 | C | OM | | | 6 | Selection out of Catalogue | | | | | |
| 1-3 | Nichttechnische Ergänzungskurse im Master | Nontechnical Elective Complementary Courses for Master | 0-TUHH | C | OM | | | 6 | Selection out of Catalogue | | | | | |

Specialisation Communication and Signal Processing Compulsory Courses: 0 LP Optional Courses: 18 LP

| | | | | | | | | | | | | | | |
|---|--|---|------|----|----|-----|----|---|--|--|-----|-------|---|---|
| 1 | Hochfrequenztechnik | Microwave Engineering | E-3 | EC | CM | Yes | KI | 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 | 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 | 1 |
| | | | | | | | | | Ausgewählte Themen der Kommunikationsnetze | Selected Topics of Communication Networks | POL | EN | 2 | 1 |
| | | | | | | | | | Übung Kommunikationsnetze | Communication Networks Exercise | POL | EN | 1 | 1 |
| 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 | Weiterführende Konzepte der drahtlosen Kommunikation | Advanced Concepts of Wireless Communications | E-8 | EC | CM | Yes | KI | 6 | | | | | | |
| | | | | | | | | | Weiterführende Konzepte der drahtlosen Kommunikation | Advanced Concepts of Wireless Communications | VL | EN | 3 | 2 |
| | | | | | | | | | Weiterführende Konzepte der drahtlosen Kommunikation | Advanced Concepts of Wireless Communications | HÜ | EN | 1 | 2 |
| 3 | 3D Computer Vision | 3D Computer Vision | E-2 | EC | CM | Yes | KI | 6 | | | | | | |

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|---|--|---|-------------|----------|-----------|-------|---------------------|--------|---|---|-------------------|--------------|---------|---------|
| | | | | | | | | | 3D Computer Vision | 3D Computer Vision | VL | EN | 2 | 3 |
| | | | | | | | | | 3D Computer Vision | 3D Computer Vision | UE | EN | 2 | 3 |
| 3 | Digitale Audiosignalverarbeitung | Digital Audio Signal Processing | E-8 | EC | CM | Yes | KI | 6 | Digitale Audiosignalverarbeitung | Digital Audio Signal Processing | VL | EN | 3 | 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 |
| Specialisation Microelectronics Complements Compulsory Courses: 0 LP Optional Courses: 18 LP | | | | | | | | | | | | | | |
| 1 | Medizinelektronik | Electronic Circuits for Medical Applications | E-9 | EC | CM | Yes | MdIP | 6 | Medizinelektronik | Electronic Circuits for Medical Applications | VL | EN | 2 | 1 |
| | | | | | | | | | Medizinelektronik | Electronic Circuits for Medical Applications | UE | EN | 1 | 1 |
| | | | | | | | | | Medizinelektronik | Electronic Circuits for Medical Applications | PR | EN | 1 | 1 |
| 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 | 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 | 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 |
| 3-4 | Design von hochkomplexen integrierten Systemen und CAD-Werkzeuge | Design of Highly Complex Integrated Systems and CAD Tools | E-9 | EC | CM | Yes | MdIP | 6 | CAD-Werkzeuge | CAD Tools | VL | EN | 2 | 3 |
| | | | | | | | | | Design von hochkomplexen integrierten Systemen | Design of Highly Complex Integrated Systems | VL | EN | 2 | 4 |
| Thesis Compulsory Courses: 30 LP Optional Courses: 0 LP | | | | | | | | | | | | | | |
| 4 | Masterarbeit | Master Thesis | not defined | C | CM | Yes | lt. FSPO | 30 | | | | | | |

Explanation:

¹C=Compulsory, EC=Elective Compulsory

²CM=Compulsory Defined Module, OM=Optional Defined Module

³MdIP=Oral exam, Kl=Written exam, Ko=Colloquium, KI=Written exam, PA=Project, MdIP=Oral exam, SA=Written elaboration, Re=Presentation, HA=Homework, Re=Presentation, It. FSPO=according to Subject Specific Regulations, PA It. FSPO=Project (accord. to Subject Specific Regulations)

⁴CP=Credit Points

⁵VL=Lecture, SE=Seminar, UE=Recitation Section (small), POL=Problem-based Learning, PR=Laboratory Course, HÜ=Recitation Section (large)

⁶DE=German, EN=English, DE/EN=German and English

⁷SWS=Contact hours