

Exclosure to Subject Specific Regulations
 from 18.07.2018
 for Master-Programme Materialwissenschaft
 at TUHH
 Programme Director: Prof. Jörg Weißmüller
 Total: 120 CP
 Number of Specilisations to choose: 1

Course Scheme Master Materials Science (MAMS)

Consolidated Version
 for Study Cohort: WiSe20/21
 en_head_sda
 and Approval of Chair from:
 19.05.2021
 Replaces Version from: 15.04.2020
 In Force on: 01.10.2018
 Out of Force on: 30.09.2023

Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

| Re-com. Term | Module | | | | | | Examination | | | Course Work | | |
|--|---|----------|----------------------|-----------|----------|-----------|-------------|--|---------------------|-------------|------------------|--------------|
| | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| Core Qualification Compulsory Courses: 66 LP Optional Courses: 0 LP | | | | | | | | | | | | |
| 1 | Angewandte Computermethoden der Materialwissenschaft / Applied Computational Methods for Material Science | DE / EN | Prof. Huber | M-22 | C | CM | 6 | Y | FFA | | | |
| 1 | Materialphysik und atomare Materialmodellierung / Materials Physics and Atomistic Materials Modeling | DE | Prof. Huber | M-22 | C | CM | 6 | Y | KL | | | |
| 1 | Phänomene und Methoden der Materialwissenschaften / Phenomena and Methods in Materials Science | DE | Prof. Weißmüller | M-22 | C | CM | 6 | Y | KL | | | |
| 1-2 | Mehrphasige Materialien / Multiphase Materials | DE | Prof. Meißner | M-11 | C | CM | 6 | Y | KL | Y | SA | 0 |
| 2 | Fortgeschrittenenpraktikum Materialwissenschaften / Advanced Laboratory Materials Sciences | DE / EN | Prof. Weißmüller | M-22 | C | CM | 6 | N | SA | | | |
| 2 | Mechanische Eigenschaften / Mechanical Properties | DE / EN | Dr. Lilleodden | M-9 | C | CM | 6 | Y | KL | | | |
| 3 | Moderne Funktionsmaterialien / Advanced Functional Materials | DE | Prof. Huber | M-22 | C | CM | 6 | Y | RE | | | |
| 3 | Studienarbeit Moderne Probleme der Materialwissenschaften / Study work on Modern Issues in the Materials Sciences | | Prof. Weißmüller | M-22 | C | CM | 12 | Y | STA | | | |
| 1-3 | Nichttechnische Angebote im Master / Non-technical Courses for Master | DE / EN | Richter | 0-TUHH | C | OM | 6 | Selection out of seperatly published Catalogue | | | | |
| 1-3 | Betrieb & Management / Business & Management | DE / EN | Prof. Meyer | W-1 | C | OM | 6 | Selection out of seperatly published Catalogue | | | | |
| Specialisation Engineering Materials Compulsory Courses: 0 LP Optional Courses: 24 LP | | | | | | | | | | | | |
| 1 | Kunststoffe / Polymers | DE / EN | Dr. Wittich | M-11 | EC | CM | 6 | Y | KL | | | |
| 2 | Faser-Kunststoff-Verbunde / Fibre-polymer-composites | EN | Prof. Fiedler | M-11 | EC | CM | 6 | Y | KL | | | |
| 2 | Verarbeitung von Faser-Kunststoff-Verbunde / Processing of fibre-polymer-composites | DE / EN | Prof. Fiedler | M-11 | EC | CM | 6 | Y | KL | | | |

| | | Module | | | | | Examination | | | Course Work | | |
|--------------|--|----------|----------------------|-----------|----------|-----------|-------------|----------------------------------|---------------------|-------------|------------------|--------------|
| Re-com. Term | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| 3 | Konstruieren mit Faser-Kunststoff-Verbunden / Design with fibre-polymer-composites | DE / EN | Prof. Fiedler | M-11 | EC | CM | 6 | Y | KL | | | |
| 3 | Materialprüfung, Bauzustands- und Schadensanalyse / Examination of Materials, Structural Condition and Damages | DE | Prof. Schmidt-Döhl | B-3 | EC | CM | 6 | Y | KL | | | |
| 3 | Materialwissenschaftliches Seminar / Materials Science Seminar | DE / EN | Prof. Weißmüller | M-22 | EC | OM | 6 | Selection out of Catalogue below | | | | |
| 3 | Metallische und Hybride Werkstoffe für den Leichtbau / Metallic and Hybrid Light-weight Materials | EN | Prof. Rutner | B-8 | EC | CM | 6 | Y | MP | | | |

Specialisation Modeling Compulsory Courses: 0 LP Optional Courses: 24 LP

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|---|---|---------|------------------|------|----|----|---|----------------------------------|----|---|----|----|
| 1 | Werkstoffmodellierung / Material Modeling | DE | Prof. Cyron | M-15 | EC | CM | 6 | Y | KL | | | |
| 2 | High-Order FEM / High-Order FEM | EN | Prof. Düster | M-10 | EC | CM | 6 | Y | KL | N | RE | 10 |
| 2 | Methoden der theoretischen Materialphysik / Methods in Theoretical Materials Science | DE / EN | Prof. Müller | M-9 | EC | CM | 6 | Y | MP | | | |
| 2 | Numerische Algorithmen in der Strukturmechanik / Numerical Algorithms in Structural Mechanics | DE | Prof. Düster | M-10 | EC | CM | 6 | Y | KL | | | |
| 2 | Numerische Strukturdynamik / Computational Structural Dynamics | DE | Prof. Düster | M-10 | EC | CM | 6 | Y | KL | | | |
| 2 | Quantenmechanik von Festkörpern / Quantum Mechanics of Solids | DE / EN | Prof. Müller | M-9 | EC | CM | 6 | Y | MP | | | |
| 2 | Skalenübergreifende Modellierung / Modeling Across The Scales | DE | Prof. Cyron | M-15 | EC | CM | 6 | Y | MP | | | |
| 3 | Kontinuumsmechanik / Continuum Mechanics | DE | Prof. Cyron | M-15 | EC | CM | 6 | Y | KL | | | |
| 3 | Materialwissenschaftliches Seminar / Materials Science Seminar | DE / EN | Prof. Weißmüller | M-22 | EC | OM | 6 | Selection out of Catalogue below | | | | |
| 3 | Nichtlineare Strukturanalyse / Nonlinear Structural Analysis | DE / EN | Prof. Düster | M-10 | EC | CM | 6 | Y | KL | | | |

Specialisation Nano and Hybrid Materials Compulsory Courses: 0 LP Optional Courses: 24 LP

| | | | | | | | | | | | | |
|---|--|---------|----------------|-----|----|----|---|---|----|--|--|--|
| 1 | BIO II: Biomaterialien / BIO II: Biomaterials | EN | Prof. Morlock | M-3 | EC | CM | 3 | Y | KL | | | |
| 1 | Mikrosystemtechnologie / Microsystems Technology | EN | Prof. Trieu | E-7 | EC | CM | 4 | Y | MP | | | |
| 2 | BIO II: Gelenkersatz / BIO II: Artificial Joint Replacement | DE | Prof. Morlock | M-3 | EC | CM | 3 | Y | KL | | | |
| 2 | Experimentelle Mikro- und Nanomechanik / Experimental Micro- and Nanomechanics | DE / EN | Dr. Lilleodden | M-9 | EC | CM | 6 | Y | KL | | | |
| 2 | Halbleitersseminar / Semiconductor Seminar | EN | Prof. Kuhl | E-9 | EC | CM | 2 | Y | RE | | | |

| | | Module | | | | | Examination | | | Course Work | | |
|--|--|----------|----------------------|-----------|----------|-----------|-------------|----------------------------------|---------------------|-------------|------------------|--------------|
| Re-com. Term | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| 2 | Optoelektronik I - Wellenoptik / Optoelectronics I - Wave Optics | EN | Prof. Eich | E-12 | EC | CM | 4 | Y | KL | | | |
| 2 | Quantenmechanik von Festkörpern / Quantum Mechanics of Solids | DE / EN | Prof. Müller | M-9 | EC | CM | 6 | Y | MP | | | |
| 2-3 | Grenzflächen und grenzflächenbestimmte Materialien / Interfaces and interface-dominated Materials | DE / EN | Prof. Huber | M-22 | EC | CM | 6 | Y | KL | | | |
| 3 | Materialwissenschaftliches Seminar / Materials Science Seminar | DE / EN | Prof. Weißmüller | M-22 | EC | OM | 6 | Selection out of Catalogue below | | | | |
| 3 | Optoelektronik II - Quantenoptik / Optoelectronics II - Quantum Optics | EN | Dr. Petrov | E-12 | EC | CM | 4 | Y | KL | | | |
| 3 | Partikeltechnologie und Feststoffverfahrenstechnik / Particle Technology and Solid Matter Process Technology | DE / EN | Prof. Heinrich | V-3 | EC | CM | 6 | Y | KL | Y | SA | 0 |
| Thesis Compulsory Courses: 30 LP Optional Courses: 0 LP | | | | | | | | | | | | |
| 4 | Masterarbeit / Master Thesis | | Professoren der TUHH | 0-TUHH | C | CM | 30 | Y | AB | | | |

Materials Science Seminar

| Course | | | | | Examination | | | |
|--|-------------------|--------------|---------|-----------|-------------|-------|---------------------|------------------------|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |
| Seminar keramische Hochleistungsmaterialien / Seminar Advanced Ceramics | SE | DE/EN | 2 | WiSe/SoSe | 3 | Y | RE | |
| Seminar Metallische Nanomaterialien / Seminar | SE | DE/EN | 2 | WiSe/SoSe | 3 | Y | RE | |
| Seminar Verbundwerkstoffe / Seminar Composites | SE | DE/EN | 2 | WiSe/SoSe | 3 | Y | RE | |
| Seminar zu grenzflächenbestimmten Materialien / Seminar on interface-dominated materials | SE | DE/EN | 2 | WiSe/SoSe | 3 | Y | RE | |

Explanation:

¹C=Compulsory, EC=Elective Compulsory

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

³KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, AB=Thesis, SA It. FPrO=Written elaboration (accord. to Internship Regulations)

⁴CP=Credit Points

⁵VL=Lecture, SE=Seminar, GÜ=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, HÜ=Recitation Section (large)

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

⁷SWS=Contact hours