

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

# TUHH

## Course Scheme Master Materials Science (MAMS)

Consolidated Version  
 for Study Cohort: WiSe21/22  
 en\_head\_sda  
 and Approval of Chair from:  
 04.05.2022  
 Replaces Version from: 17.03.2021  
 In Force on: 01.10.2018  
 Out of Force on: 30.09.2024

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 %)
<b>Core Qualification</b> 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			
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			
2	Mehrphasige Materialien / Multiphase Materials	DE	Prof. Meißner	M-11	C	CM	6	Y	KL	Y	SA	0
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				
<b>Specialisation Engineering Materials</b> Compulsory Courses: 0 LP Optional Courses: 24 LP												
1	Kunststoffe / Polymers	DE / EN	Dr. Wittich	M-11	EC	CM	6	Y	KL			
2	Aufbau und Eigenschaften der Faser-Kunststoff-Verbunde / Structure and properties of fibre-polymer-composites	DE / EN	Prof. Fiedler	M-11	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
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2	Ermüdung metallischer Strukturwerkstoffe und Verfahren für die Lebensdauererweiterung / Fatigue of metallic structural materials and methods for extending service life	DE / EN	PD Dr. Kashaev	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			
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

1	Werkstoffmodellierung / Materials 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			
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			

		Module					Examination				Course Work		
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2	Experimentelle Mikro- und Nanomechanik / Experimental Micro- and Nanomechanics	DE / EN	Dr. Lilleodden	M-9	EC	CM	6	Y	KL				
2	Halbleiterseminar / Semiconductor Seminar	EN	Prof. Kuhl	E-9	EC	CM	2	Y	RE				
2	Optoelektronik I - Wellenoptik / Optoelectronics I - Wave Optics	EN	Dr. Petrov	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	
<b>Thesis</b> 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:

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

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

<sup>3</sup>KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, AB=Thesis, SA lt. FPRO=Written elaboration (accord. to Internship Regulations)

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

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

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

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