

Exclosure to Subject Specific Regulations  
 from 25.07.2018  
 for Master-Programme Informatik-  
 Ingenieurwesen  
 at TUHH  
 Programme Director: Prof. Görschwin Fey  
 Total: 120 CP  
 Number of Specilisations to choose: 4



# Course Scheme Master Computer Science in Engineering (IIWMS)

Consolidated Version  
 for Study Cohort: WiSe22/23  
 en\_head\_sda  
 and Approval of Chair from:  
 21.06.2023  
 Replaces Version from: 15.03.2023  
 In Force on: 01.10.2023  
 Out of Force on: 30.09.2025

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: 24 LP Optional Courses: 0 LP												
3	Forschungsprojekt / Research Project	DE / EN	Prof. Fey	SD-E	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 I. Computer Science</b> Compulsory Courses: 0 LP Optional Courses: 18 LP												
1	Sicherheit von Cyber-phisichen Systemen / Security of Cyber-Physical Systems	EN	Prof. Fröschle	E-15	EC	CM	6	Y	KL	N	ÜA	10
1	Software-Sicherheit / Software Security	EN	Prof. Scandariato	E-22	EC	CM	6	Y	KL			
1	Softwareverifikation / Software Verification	EN	Prof. Schupp	E-16	EC	CM	6	Y	KL	Y	ÜA	15
2	Advanced Internet Computing / Advanced Internet Computing	EN	Prof. Schulte	E-19	EC	CM	6	Y	FFA			
2	Algorithmische Spieltheorie / Algorithmic Game Theory	DE / EN	Prof. Mnich	E-11	EC	CM	6	Y	KL			
2	Autonomous Cyber-Physical Systems / Autonomous Cyber-Physical Systems	EN	Prof. Renner	E-24	EC	CM	6	Y	KL	N	TE	10
2	Constraint Satisfaction Problems / Constraint Satisfaction Problems	EN	Prof. Mottet	E-EXK6	EC	CM	6	Y	MP			
2	Entwurf von Dependable Systems / Design of Dependable Systems	DE / EN	Prof. Fey	E-13	EC	CM	6	Y	MP	Y	FFST	0
3	Kommunikationsnetze / Communication Networks	EN	Prof. Timm-Giel	E-4	EC	CM	6	Y	RE			
3	Massiv parallele Systeme: Architektur und Programmierung / Massively Parallel Systems: Architecture and Programming	EN	Prof. Lal	E-EXK5	EC	CM	6	Y	MP	Y	FFST	20
3	Medizinische Bildgebung / Medical Imaging	DE / EN	Prof. Knopp	E-5	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
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<b>Specialisation II. Engineering Science</b> Compulsory Courses: 0 LP Optional Courses: 12 LP												
1	Digitale Nachrichtenübertragung / Digital Communications	DE / EN	Prof. Bauch	E-8	EC	CM	6	Y	KL	Y	SA	0
1	Elektrische Energiesysteme II: Betrieb und Informationssysteme elektrischer Energienetze / Electrical Power Systems II: Operation and Information Systems of Electrical Power Grids	DE	Prof. Becker	E-6	EC	CM	6	Y	MP			
2	Informationstheorie und Codierung / Information Theory and Coding	EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
2	Intelligente Systeme Projekt / Intelligent Systems Lab	DE / EN	Prof. Schlaefer	E-1	EC	CM	6	Y	SA	Y	GD	0
2	Maschinelles Lernen in der Elektro- und Informationstechnik / Machine Learning in Electrical Engineering and Information Technology	EN	Prof. Bauch	E-8	EC	CM	6	Y	MP			
3	Digitale Signalverarbeitung und Digitale Filter / Digital Signal Processing and Digital Filters	EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
<b>Specialisation III. Mathematics</b> Compulsory Courses: 0 LP Optional Courses: 12 LP												
1	Lineare und Nichtlineare Optimierung / Linear and Nonlinear Optimization	DE / EN	Prof. Mnich	E-11	EC	CM	6	Y	KL			
1	Mathematische Bildverarbeitung / Mathematical Image Processing	DE / EN	Prof. Lindner	E-10	EC	CM	6	Y	MP			
2	Numerische Mathematik II / Numerical Mathematics II	DE / EN	Prof. Le Borne	E-10	EC	CM	6	Y	MP			
2	Randomisierte Algorithmen und Zufällige Graphen / Randomised Algorithms and Random Graphs	DE / EN	Prof. Taraz	E-10	EC	CM	6	Y	MP			
3	Fortgeschrittenes maschinelles Lernen / Advanced Machine Learning	DE / EN	Dr. Zemke	E-10	EC	CM	6	Y	KL			
<b>Specialisation IV. Subject Specific Focus</b> Compulsory Courses: 0 LP Optional Courses: 24 LP												
2	Technischer Ergänzungskurs I für IIW / Technical Complementary Course I for Computational Science and Engineering		Prof. Fey	SD-E	EC	OM	12	according to Subject Specific Regulations				
3	Technischer Ergänzungskurs II für IIW / Technical Complementary Course II for Computational Science and Engineering		Prof. Fey	SD-E	EC	OM	12	according to Subject Specific Regulations				
<b>Thesis</b> Compulsory Courses: 30 LP Optional Courses: 0 LP												

		Module					Examination			Course Work		
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4	Masterarbeit / Master Thesis		Professoren der TUHH	0-TUHH	C	CM	30	Y	AB			

**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, FFST=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, GD=Group discussion, STA=Study work, AB=Thesis, UA=Exercices, SA It. FPRO=Written elaboration (accord. to Internship Regulations), TE=Attestation

<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, 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