

Exclosure to Subject Specific Regulations  
 from 25.07.2018  
 for Bachelor-Programme Informatik-  
 Ingenieurwesen  
 at TUHH  
 Programme Director: Prof. Görschwin Fey  
 Total: 180 CP  
 Number of Specilisations to choose: 3



# Course Scheme Bachelor Computer Science in Engineering (IIWBS)

Consolidated Version  
 for Study Cohort: WiSe22/23  
 en\_head\_sda  
 and Approval of Chair from:  
 13.12.2023  
 Replaces Version from: 15.03.2023  
 In Force on: 01.10.2023  
 Out of Force on: 31.03.2027

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: 138 LP Optional Courses: 0 LP												
1	Diskrete Algebraische Strukturen / Discrete Algebraic Structures	DE / EN	Prof. Zimmermann	E-13	C	CM	6	Y	KL			
1	Elektrotechnik I: Gleichstromnetzwerke und elektromagnetische Felder / Electrical Engineering I: Direct Current Networks and Electromagnetic Fields	DE	Prof. Kuhl	E-9	C	CM	6	Y	KL			
1	Mathematik I / Mathematics I	DE	Prof. Taraz	E-10	C	CM	8	Y	KL	Y	ÜA	10
1	Prozedurale Programmierung für Informatiker / Procedural Programming for Computer Engineers	DE / EN	Prof. Renner	E-24	C	CM	6	Y	KL			
2	Automatentheorie und Formale Sprachen / Automata Theory and Formal Languages	EN	Prof. Mnich	E-11	C	CM	6	Y	KL			
2	Elektrotechnik II: Wechselstromnetzwerke und grundlegende Bauelemente / Electrical Engineering II: Alternating Current Networks and Basic Devices	DE	Prof. Becker	E-6	C	CM	6	Y	KL	N	MT	10
2	Grundlagen der Betriebswirtschaftslehre / Foundations of Management	DE	Prof. Ihl	W-11	C	CM	6	Y	FFA			
2	Mathematik II / Mathematics II	DE	Prof. Taraz	E-10	C	CM	8	Y	KL	Y	ÜA	10
2	Programmierparadigmen / Programming Paradigms	DE / EN	NN	SD-E	C	CM	6	Y	KL			
3	Algorithmen und Datenstrukturen / Algorithms and Data Structures	DE / EN	Prof. Mnich	E-11	C	CM	6	Y	KL	N	ÜA	20
3	Mathematik III / Mathematics III	DE	Prof. Lindner	0-UNIHH-M	C	CM	8	Y	KL			
3	Numerische Mathematik I / Numerical Mathematics I	EN	Prof. Le Borne	E-10	C	CM	6	Y	KL			

		Module					Examination			Course Work		
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3	Rechnernetze und Internet-Sicherheit / Computernetworks and Internet Security	EN	Prof. Timm-Giel	E-4	C	CM	6	Y	KL			
3	Technische Informatik / Computer Engineering	DE / EN	Prof. Falk	E-13	C	CM	6	Y	KL	Y	ÜA	10
4	Eingebettete Systeme / Embedded Systems	EN	Prof. Falk	E-13	C	CM	6	Y	KL	Y	FFST	10
4	Seminare Informatik / Seminars Computer Science	DE / EN	Dozenten des SD E	SD-E	C	CM	6	N	RE			
4	Signale und Systeme / Signals and Systems	DE / EN	Prof. Bauch	E-8	C	CM	6	Y	KL			
4	Stochastik / Stochastics	DE / EN	Prof. Schulte	E-10	C	CM	6	Y	KL			
5	Einführung in die Nachrichtentechnik und ihre stochastischen Methoden / Introduction to Communications and Random Processes	DE / EN	Prof. Bauch	E-8	C	CM	6	Y	KL			
5	Grundlagen der Regelungstechnik / Introduction to Control Systems	DE	NN	E-14	C	CM	6	Y	KL			
5	IIV Praktikum / Practical Course IIV	DE / EN	Prof. Fey	E-13	C	CM	6	Y	FFA			
1-6	Nichttechnische Angebote im Bachelor / Non-technical Courses for Bachelors	DE / EN	Richter	0-TUHH	C	OM	6	Selection out of seperatly published Catalogue				

**Specialisation I. Computer Science** Compulsory Courses: 0 LP Optional Courses: 12 LP

5	Datenbanken / Databases	EN	Prof. Schulte	E-19	EC	CM	6	Y	KL			
5	Funktionales Programmieren / Functional Programming	EN	Prof. Schupp	E-16	EC	CM	6	Y	KL	Y	ÜA	15
5	Introduction to Quantum Computing / Introduction to Quantum Computing	DE / EN	Prof. Kliesch	E-25	EC	CM	6	Y	KL	Y	ÜA	20
5	Rechnerarchitektur / Computer Architecture	DE / EN	Prof. Falk	E-13	EC	CM	6	Y	KL	N	FFST	15
6	Berechenbarkeit und Komplexität / Computability and Complexity Theory	DE / EN	Prof. Kliesch	E-25	EC	CM	6	Y	KL	Y	ÜA	15
6	Betriebssystembau für Einkernsysteme / Operating System Construction for Single-Core Systems	DE / EN	Prof. Dietrich	E-EXK4	EC	CM	6	Y	MP	N	FFST	10
6	Compilerbau / Compiler Construction	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			
6	Grundlagen der Betriebssysteme / Fundamentals of Operating Systems	DE / EN	Prof. Dietrich	E-EXK4	EC	CM	6	Y	KL			
6	Maschinelles Lernen I / Machine Learning I	DE / EN	Prof. Ay	E-21	EC	CM	6	Y	KL	N	ÜA	20
6	Software-Engineering / Software Engineering	EN	Prof. Schupp	E-16	EC	CM	6	Y	KL	Y	ÜA	15
6	Softwareentwicklung / Software Development	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			

**Specialisation II. Mathematics & Engineering Science** Compulsory Courses: 0 LP Optional Courses: 6 LP

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 %)
4	Graphentheorie und Optimierung / Graph Theory and Optimization	DE / EN	Prof. Taraz	E-10	EC	CM	6	Y	KL			
4	Grundlagen Raumfahrtelctronik und Primärmission / Basics space electronics and primary mission	DE / EN	Prof. Kulau	E-EXK3	EC	CM	6	Y	SA			
5	Elektrische Energiesysteme I: Einführung in elektrische Energiesysteme / Electrical Power Systems I: Introduction to Electrical Power Systems	DE	Prof. Becker	E-6	EC	CM	6	Y	KL			
5	Elektronische Bauelemente / Electronic Devices	DE	Prof. Trieu	E-7	EC	CM	6	Y	KL	Y	FFST	10
5	Elektrotechnik III: Netzwerktheorie und Transienten / Electrical Engineering III: Circuit Theory and Transients	DE	Prof. Kölpin	E-3	EC	CM	6	Y	KL			
5	Kombinatorische Strukturen und Algorithmen / Combinatorial Structures and Algorithms	DE / EN	Prof. Taraz	E-10	EC	CM	6	Y	MP			
5	Messtechnik und Messdatenverarbeitung / Measurements: Methods and Data Processing	DE	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	ÜA	10
5	Technische Mechanik I (Stereostatik) / Engineering Mechanics I (Stereostatics)	DE	Prof. Kriegesmann	M-24	EC	CM	6	Y	KL			
5-6	Green Technologies II / Green Technologies II	DE	Dr. Scherzinger	V-9	EC	CM	6	Y	KL			
5-6	Machine Dynamics / Machine Dynamics	EN	Dr. Abbasimoshaei	M-4	EC	CM	6	Y	FFA			
6	Einführung in Medizintechnische Systeme / Introduction into Medical Technology and Systems	DE	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	RE	10
										Y	SA	10
6	Elektrische Maschinen und Antriebe / Electrical Machines and Actuators	DE	Prof. Kern	M-4	EC	CM	6	Y	FFA			
6	Halbleiterschaltungstechnik / Semiconductor Circuit Design	DE	NN	E-9	EC	CM	6	Y	KL			
6	Labor Cyber-Physical Systems / Lab Cyber-Physical Systems	DE / EN	Prof. Falk	E-13	EC	CM	6	Y	SA			
6	Löser für schwachbesetzte lineare Gleichungssysteme / Solvers for Sparse Linear Systems	EN	Prof. Le Borne	E-10	EC	CM	6	Y	MP			
6	Mathematik IV / Mathematics IV	DE	Prof. Lindner	0-UNIHH-M	EC	CM	6	Y	KL			
6	Theoretische Elektrotechnik I: Zeitunabhängige Felder / Theoretical Electrical Engineering I: Time-Independent Fields	DE	Prof. Schuster	E-18	EC	CM	6	Y	KL			

**Specialisation III. Subject Specific Focus** Compulsory Courses: 0 LP Optional Courses: 12 LP

6	Technischer Ergänzungskurs für IIWBS / Technical Complementary Course for Computational Science and Engineering Bachelor		Prof. Fey	SD-E	EC	OM	12	according to Subject Specific Regulations				
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		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 %)

**Thesis** Compulsory Courses: 12 LP Optional Courses: 0 LP

6	Bachelorarbeit / Bachelor Thesis		Professoren der TUHH	0-TUHH	C	CM	12	Y	AB			
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#### Explanation:

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

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

<sup>3</sup>MT=Midterm, KL=Written exam, SA=Written elaboration, FFST=Subject theoretical and practical work, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, ÜA=Exercises, AB=Thesis

<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, PS=Project Seminar, HÜ=Recitation Section (large)

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

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