

Exclosure to Subject Specific Regulations  
 from 25.07.2018  
 for Bachelor-Programme Computer Science  
 at TUHH dual study program  
 Programme Director: Prof. Karl-Heinz  
 Zimmermann  
 Total: 210 CP  
 Number of Specilisations to choose: 3

# Course Scheme Bachelor Computer Science (CSBS) dual study program

Consolidated Version  
 for Study Cohort: WiSe22/23  
 en\_head\_sda  
 and Approval of Chair from:  
 04.05.2022  
 In Force on: 01.10.2022  
 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: 156 LP Optional Courses: 0 LP												
1	Diskrete Algebraische Strukturen / Discrete Algebraic Structures	DE / EN	Prof. Zimmermann	E-13	C	CM	6	Y	KL			
1	Funktionales Programmieren / Functional Programming	EN	Prof. Schupp	E-16	C	CM	6	Y	KL	Y	ÜA	15
1	Mathematik I (EN) / Mathematics I (EN)	EN	Prof. Ruprecht	E-10	C	CM	8	Y	KL	Y	ÜA	10
1	Praxismodul 1 im dualen Bachelor / Practical module 1 (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
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	Grundlagen der Betriebswirtschaftslehre / Foundations of Management	DE	Prof. Ihl	W-11	C	CM	6	Y	FFA			
2	Mathematik II (EN) / Mathematics II (EN)	EN	Prof. Ruprecht	E-10	C	CM	8	Y	KL	Y	ÜA	10
2	Praxismodul 2 im dualen Bachelor / Practical module 2 (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
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			
3	Datenbanken / Databases	EN	Prof. Schulte	E-19	C	CM	6	Y	KL			
3	Mathematik III (EN) / Mathematics III (EN)	EN	Prof. Taraz	0-UNIHH-M	C	CM	8	Y	KL			

		Module					Examination			Course Work		
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3	Praxismodul 3 im dualen Bachelor / Practical module 3 (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
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	Berechenbarkeit und Komplexität / Computability and Complexity Theory	DE / EN	NN	E-13	C	CM	6	Y	KL			
4	Graphentheorie und Optimierung / Graph Theory and Optimization	DE / EN	Prof. Taraz	E-10	C	CM	6	Y	KL			
4	Praxismodul 4 im dualen Bachelor / Practical module 4 (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
4	Software-Engineering / Software Engineering	EN	Prof. Schupp	E-16	C	CM	6	Y	KL	Y	ÜA	15
4	Stochastik / Stochastics	DE / EN	Prof. Schulte	E-10	C	CM	6	Y	KL			
5	Praxismodul 5 im dualen Bachelor / Practical module 5 (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
5	Seminare Informatik / Seminars Computer Science	DE / EN	Dozenten des SD E	SD-E	C	CM	6	N	RE			
5	Software-Fachpraktikum / Software Industrial Internship		Dozenten des SD E	SD-E	C	CM	6	N	SA lt. FPrO			
1-6	Theorie-Praxis-Verzahnung im dualen Bachelor / Linking theory and practice (dual study program, Bachelor's degree)	DE	Dr. Haschke	0-SLS	C	CM	6	N	SA			
<b>Specialisation I. Computer and Software Engineering</b> Compulsory Courses: 0 LP Optional Courses: 12 LP												
4	Maschinelles Lernen I / Machine Learning I	DE / EN	Prof. Ay	SD-E	EC	CM	6	Y	KL	N	ÜA	20
4	Wissenschaftliche Programmierung / Scientific Programming	DE / EN	Prof. Knopp	E-5	EC	CM	6	Y	FFA			
5	Data Mining / Data Mining	EN	Prof. Schulte	E-19	EC	CM	6	Y	KL	Y	FFST	20
5	Einführung in die Informationssicherheit / Introduction to Information Security	EN	Prof. Scandariato	E-22	EC	CM	6	Y	KL			
5	Rechnerarchitektur / Computer Architecture	DE / EN	Prof. Falk	E-13	EC	CM	6	Y	KL	N	FFST	15
6	Compilerbau / Compiler Construction	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			
6	Eingebettete Systeme / Embedded Systems	EN	Prof. Falk	E-13	EC	CM	6	Y	KL	Y	FFST	10
6	Softwareentwicklung / Software Development	EN	Prof. Schupp	E-16	EC	CM	6	Y	FFA			
<b>Specialisation II. Mathematics and Engineering Science</b> Compulsory Courses: 0 LP Optional Courses: 18 LP												
4	Mathematik IV (EN) / Mathematics IV (EN)	EN	Prof. Taraz	0-UNIHH-M	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
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5	Kombinatorische Strukturen und Algorithmen / Combinatorial Structures and Algorithms	DE / EN	Prof. Taraz	E-10	EC	CM	6	Y	MP			
5	Quantenmechanik für Studierende der Ingenieurwissenschaften / Quantum Mechanics for Engineers	DE	NN	0-UNIHH	EC	CM	6	Y	MP	N	SA	0
5	Rechnergestützte Geometrie / Computational Geometry	DE	Dr. Batra	E-19	EC	CM	6	Y	KL			
5	Statistik / Statistics	DE / EN	Prof. Schulte	E-10	EC	CM	6	Y	KL			
6	Algebraische Methoden in der Regelungstechnik / Algebra and Control	DE / EN	Dr. Batra	E-19	EC	CM	6	Y	MP			
6	Einführung in Medizintechnische Systeme / Introduction into Medical Technology and Systems	DE	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	SA	10
										Y	RE	10
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	Signale und Systeme / Signals and Systems	DE / EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
<b>Specialisation III. Subject Specific Focus</b> Compulsory Courses: 0 LP Optional Courses: 12 LP												
5	Technischer Ergänzungskurs I für CSBS / Technical Complementary Course I for CSBS		Dozenten des SD E	SD-E	EC	OM	6	according to Subject Specific Regulations				
6	Technischer Ergänzungskurs II für CSBS / Technical Complementary Course II for CSBS		Dozenten des SD E	SD-E	EC	OM	6	according to Subject Specific Regulations				
<b>Thesis</b> Compulsory Courses: 12 LP Optional Courses: 0 LP												
6	Bachelorarbeit im dualen Studium / Bachelor thesis (dual study program)		Professoren der TUHH	0-TUHH	C	CM	12	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, ÜA=Exercises, AB=Thesis, SA It. 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, 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