

Exclosure to Subject Specific Regulations
 from 18.03.2020
 for Bachelor-Programme Data Science
 at TUHH
 Programme Director: Prof. Tobias Knopp
 Total: 180 CP
 Number of Specilisations to choose: 1



Course Scheme Bachelor Data Science (DSBS)

Consolidated Version
 for Study Cohort: WiSe21/22
 en_head_sda
 and Approval of Chair from:
 19.05.2021
 In Force on: 01.10.2021
 Out of Force on: 31.03.2026

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

Re-com. Term	Module Name (German / English)	Module					Examination			Course Work		
		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: 144 LP Optional Courses: 12 LP												
1	Diskrete Algebraische Strukturen / Discrete Algebraic Structures	DE / EN	Prof. Zimmermann	E-13	C	CM	6	Y	KL			
1	Mathematik I (EN) / Mathematics I (EN)	EN	Prof. Ruprecht	E-10	C	CM	8	Y	KL			
1	Prozedurale Programmierung für Informatiker / Procedural Programming for Computer Engineers	DE / EN	NN	E-17	C	CM	6	Y	KL			
2	Automatentheorie und Formale Sprachen / Automata Theory and Formal Languages	EN	Prof. Knopp	E-5	C	CM	6	Y	KL			
2	Mathematik II (EN) / Mathematics II (EN)	EN	Prof. Ruprecht	E-10	C	CM	8	Y	KL			
2	Programmierparadigmen / Programming Paradigms	DE / EN	NN	SD-E	C	CM	6	Y	KL			
2	Stochastik / Stochastics	DE / EN	Prof. Schulte	E-10	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	NN	E-16	C	CM	6	Y	KL			
3	Mathematik III (EN) / Mathematics III (EN)	EN	Prof. Taraz	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			
3	Statistik / Statistics	DE / EN	Prof. Schulte	E-10	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	Grundlagen der Betriebswirtschaftslehre / Foundations of Management	DE	Prof. Ihl	W-11	C	CM	6	Y	FFA			
4	Maschinelles Lernen / Machine Learning	DE / EN	Prof. Ay	SD-E	C	CM	6	Y	KL			
4	Signale und Systeme / Signals and Systems	DE / EN	Prof. Bauch	E-8	C	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 %)
4	Wissenschaftliche Programmierung / Scientific Programming	DE / EN	Prof. Knopp	E-5	C	CM	6	Y	KL			
5	Data Mining / Data Mining	DE / EN	Prof. Knopp	SD-E	C	CM	6	Y	KL			
5	Einführung in die Informationssicherheit / Introduction to Information Security	EN	Prof. Scandariato	E-22	C	CM	6	Y	KL			
5	Ethik in der Informationstechnologie / Ethics in Information Technology	DE / EN	NN	SD-W	C	CM	6	Y	FFA			
5	Praktikum Data Science / Practical Course Data Science	DE / EN	Prof. Ay	SD-E	C	CM	6	Y	FFA			
5	Bildverarbeitung / Image Processing	DE / EN	Prof. Knopp	E-5	EC	CM	6	Y	KL			
5	Einführung in die Datenerfassung und Datenverarbeitung / Introduction to Data Acquisition and Processing	DE	Prof. Schlaefer	E-1	EC	CM	6	Y	KL	Y	RE	0
										Y	ÜA	10
5	Einführung in die Nachrichtentechnik und ihre stochastischen Methoden / Introduction to Communications and Random Processes	DE / EN	Prof. Bauch	E-8	EC	CM	6	Y	KL			
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	Funktionales Programmieren / Functional Programming	EN	Prof. Schupp	E-16	EC	CM	6	Y	KL	Y	ÜA	15
5	Grundlagen der Regelungstechnik / Introduction to Control Systems	DE	Prof. Werner	E-14	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	Mechanik III (Dynamik) / Mechanics III (Dynamics)	DE	Prof. Seifried	M-13	EC	CM	6	Y	KL			
5	Rechnernetze und Internet-Sicherheit / Computernetworks and Internet Security	EN	Prof. Timm-Giel	E-4	EC	CM	6	Y	KL			
5	Simulation von Transport- und Umschlagssystemen / Simulation of Transport and Handling Systems	DE	Prof. Jahn	W-12	EC	CM	6	Y	FFA	N	FFST	20
5	Technische Informatik / Computer Engineering	DE / EN	Prof. Falk	E-13	EC	CM	6	Y	KL	Y	ÜA	10
6	Seminare Data Science / Seminars Data Science	DE / EN	Prof. Knopp	SD-E	C	CM	6	N	RE			
6	Berechenbarkeit und Komplexität / Computability and Complexity Theory	DE / EN	Prof. Zimmermann	E-13	EC	CM	6	Y	KL			
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	Halbleiterschaltungstechnik / Semiconductor Circuit Design	DE	Prof. Kuhl	E-9	EC	CM	6	Y	KL			
6	Löser für schwachbesetzte lineare Gleichungssysteme / Solvers for Sparse Linear Systems	EN	Prof. Le Borne	E-10	EC	CM	6	Y	MP			

		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 %)
6	Mathematik IV (EN) / Mathematics IV (EN)	EN	Prof. Taraz	0-UNIHH-M	EC	CM	6	Y	KL			
6	Vertiefende Grundlagen der Werkstoffwissenschaften / Enhanced Fundamentals of Materials Science	DE / EN	Prof. Schneider	M-9	EC	CM	6	Y	KL			
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 Electrical Engineering Compulsory Courses: 12 LP Optional Courses: 0 LP												
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	N	ÜA	10
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
Specialisation Logistics Compulsory Courses: 12 LP Optional Courses: 0 LP												
1	Verkehrssysteme und Umschlagtechnik / Traffic systems and handling technology	DE	Prof. Jahn	W-12	C	CM	6	Y	KL	N	SA	10
2	Logistikmanagement / Logistics Management	DE	Prof. Kersten	W-2	C	CM	6	Y	KL	N	FFST	20
Specialisation Materials Science Compulsory Courses: 12 LP Optional Courses: 0 LP												
1-2	Grundlagen der Werkstoffwissenschaften / Fundamentals of Materials Science	DE	Prof. Weißmüller	M-22	C	CM	6	Y	KL			
2	Moderne Werkstoffe / Advanced Materials	DE / EN	Prof. Huber	M-22	C	CM	6	Y	KL			
Specialisation Mechanics Compulsory Courses: 12 LP Optional Courses: 0 LP												
1	Mechanik I (Stereostatik) / Mechanics I (Statics)	DE	Prof. Seifried	M-13	C	CM	6	Y	KL			
2	Mechanik II: Elastostatik / Mechanics II: Mechanics of Materials	DE	Prof. Cyron	M-15	C	CM	6	Y	KL			
Specialisation Medicine Compulsory Courses: 12 LP Optional Courses: 0 LP												
1	MED II: Einführung in die Biochemie und Molekularbiologie / MED II: Introduction to Biochemistry and Molecular Biology	DE	Prof. Kreienkamp	M-3	C	CM	3	Y	KL			
2	MED I: Einführung in die Anatomie / MED I: Introduction to Anatomy	DE	Prof. Schumacher	M-3	C	CM	3	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 %)
2	MED I: Einführung in die Radiologie und Strahlentherapie / MED I: Introduction to Radiology and Radiation Therapy	DE	Prof. Carl	M-3	C	CM	3	Y	KL			
4	MED II: Einführung in die Physiologie / MED II: Introduction to Physiology	DE	Dr. Zimmermann	M-3	C	CM	3	Y	KL			
Thesis Compulsory Courses: 12 LP Optional Courses: 0 LP												
6	Bachelorarbeit / Bachelor Thesis		Professoren der TUHH	0-TUHH	C	CM	12	Y	AB			

Explanation:

¹C=Compulsory, EC=Elective Compulsory

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

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

⁴CP=Credit Points

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

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

⁷SWS=Contact hours