Course of Study Data Science (Study Cohort w21)

Sample course plan A Bachelor Data Science (DSBS)
Specialisation Materials Science

Legend:

Core Qualification Compulsory	Specialisation Compulsory	Focus Compulsory	Thesis Compulsory
Core Qualification Elective Compulsory	Specialisation Elective Compulsory	Focus Elective Compulsory	Interdisciplinary complement

LP	Semester 1	Form	Hrs/wk	Semester 2	Form	Hrs/wk	Semester 3	Form	Hrs/wk	Semester 4	Form	Hrs/wk	Semester 5	Form	Hrs/wk	Semester 6	Form	Hrs/wk
1	**Discrete Algebraic Structures**			**Automata Theory and Formal Languages**			**Databases**			**Signals and Systems**			**Introduction to Information Security**			**Seminars Computer Science**		
2	Discrete Algebraic Structures	VL	2	Automata Theory and Formal Languages	VL	2	Databases	VL	3	Signals and Systems	VL	3	Introduction to Information Security	VL	2	Introductory Seminar Computer Science II	SE	2
3	Discrete Algebraic Structures	GÜ	2	Automata Theory and Formal Languages	GÜ	2	Databases	GÜ	1	Signals and Systems	GÜ	2	Introduction to Information Security	GÜ	2	Introductory Seminar Computer Science I	SE	2
4																		
5																		
6																		
7	**Procedural Programming for Computer Engineers**			**Stochastics**			**Numerical Mathematics I**			**Foundations of Management**			**Data Mining**			**Ethics in Information Technology**		
8	Procedural Programming for Computer Engineers	VL	1	Stochastics	VL	2	Numerical Mathematics I	VL	2	Introduction to Management	VL	3	Data Mining	VL	2	Ethics in Information Technology	VL	2
9	Procedular Programming for Computer Engineers	HÜ	1	Stochastics	GÜ	2	Numerical Mathematics I	GÜ	2	Management Tutorial	GÜ	2	Data Mining	PBL	2	Ethics in Information Technology	SE	2
10	Procedural Programming for Computer Engineers	PR	2															
11																		
12																		
13	**Mathematics I (EN)**			**Programming Paradigms**			**Algorithms and Data Structures**			**Graph Theory and Optimization**			**Machine Learning II**			**Bachelor Thesis**		
14	Analysis I	VL	2	Programming Paradigms	VL	2	Algorithms and Data Structures	VL	4	Graph Theory and Optimization	VL	2	Machine Learning II	VL	2			
15	Analysis I	HÜ	1	Programming Paradigms	HÜ	1	Algorithms and Data Structures	GÜ	1	Graph Theory and Optimization	GÜ	2	Machine Learning II	GÜ	2			
16	Analysis I	GÜ	1	Programming Paradigms	PR	2												
17	Linear Algebra I	VL	2															
18	Linear Algebra I	HÜ	1															
19	Linear Algebra I	GÜ	1	**Mathematics II (EN)**			**Statistics**			**Scientific Programming**			**Functional Programming**					
20				Analysis II	VL	2	Statistics	VL	3	Scientific Programming	VL	3	Functional Programming	VL	2			
21	**Fundamentals of Materials Science (part 1)**			Analysis II	HÜ	1	Statistics	GÜ	1	Scientific Programming	GÜ	2	Functional Programming	HÜ	2			
22	Fundamentals of Materials Science I	VL	2	Analysis II	GÜ	1							Functional Programming	GÜ	2			
23	Physical and Chemical Basics of Materials Science	VL	2	Linear Algebra II	VL	2												
24				Linear Algebra II	HÜ	1												
25				Linear Algebra II	GÜ	1	**Mathematics III (EN)**			**Machine Learning I**			**Engineering Mechanics III (Dynamics)**					
26							Analysis III	VL	2	Machine Learning I	VL	2	Engineering Mechanics III	VL	3			
27				**Fundamentals of Materials Science (part 2)**			Analysis III	HÜ	1	Machine Learning I	GÜ	2	Engineering Mechanics III	GÜ	2			
28				Fundamentals of Materials Science II	VL	2	Analysis III	GÜ	1				Engineering Mechanics III	HÜ	1			
29							Differential Equations 1	VL	2									
30				**Advanced Materials**			Differential Equations 1	HÜ	1									
31				Advanced Materials Characterization	VL	2	Differential Equations 1	GÜ	1									
32				Advanced Materials Design	VL	2												
33				Advanced Materials Design	HÜ	2												
34																		
	Non-technical Courses for Bachelors (from catalogue) - 6LP																	

The choice of courses from the catalogue is flexible (depends on the semestral work load), provided the necessary number of required credits is reached.