Course of Study Data Science (Study Cohort w21)

Sample course plan D 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						
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						
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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**	**Computability and Complexity Theory**
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	Computability and Complexity Theory 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 3	Computability and Complexity Theory 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**	**Simulation of Transport and Handling Systems**	**Bachelor Thesis**
20		Analysis II VL 2	Statistics VL 3	Scientific Programming VL 3	Simulation of Transport and Handling Systems VL 1	
21	**Fundamentals of Materials Science (part 1)**	Analysis II HÜ 1	Statistics GÜ 1	Scientific Programming GÜ 2	Simulation of Transport and Handling Systems GÜ 3	
22	Fundamentals of Materials Science I VL 2	Analysis II GÜ 1				
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**		
26			Analysis III VL 2	Machine Learning I VL 2		
27		**Fundamentals of Materials Science (part 2)**	Analysis III HÜ 1	Machine Learning I GÜ 2		
28		Fundamentals of Materials Science II VL 2	Analysis III GÜ 1			
29		**Advanced Materials**	Differential Equations 1 VL 2			
30		Advanced Materials Characterization VL 2	Differential Equations 1 HÜ 1			
31		Advanced Materials Design VL 2	Differential Equations 1 GÜ 1			
32		Advanced Materials Design HÜ 2				
33						
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.