

Course of Study Data Science (Study Cohort w21)

Sample course plan B Bachelor Data Science (DSBS)

		Core qualification Compulsory		Specialisation Compulsory		Focus Compulsory		Thesis Compulsory				
		Core qualification Elective Compulsory		Specialisation Elective Compulsory		Focus Elective Compulsory		Interdisciplinary complement				
Specialisation	Materials Science	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 Data Science	
2	Discrete Algebraic Structures VL 2		Automata Theory and Formal Languages VL 2		Databases VL 4		Signals and Systems VL 3		Introduction to Information Security VL 2		Seminar Data Science I SE 2	
3	Discrete Algebraic Structures GÜ 2		Automata Theory and Formal Languages GÜ 2		Databases PBL 1		Signals and Systems GÜ 2		Introduction to Information Security GÜ 2		Seminar Data Science II SE 2	
4												
5												
6												
7	Procedural Programming for Computer Engineers		Stochastics		Numerical Mathematics I		Foundations of Management		Data Mining		Enhanced Fundamentals of Materials Science	
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		Enhanced Fundamentals: Metals VL 2	
9	Procedural Programming for Computer Engineers HÜ 1		Stochastics GÜ 2		Numerical Mathematics I GÜ 2		Management Tutorial GÜ 2		Data Mining GÜ 2		Enhanced Fundamentals: Ceramics and Polymers VL 2	
10	Procedural Programming for Computer Engineers PR 2										Enhanced Fundamentals: Ceramics and Polymers HÜ 1	
11												
12												
13	Mathematics I (EN)		Programming Paradigms		Algorithms and Data Structures		Graph Theory and Optimization		Practical Course Data Science		Bachelor Thesis	
14	Analysis I VL 2		Programming Paradigms VL 2		Algorithms and Data Structures VL 4		Graph Theory and Optimization VL 2		Practical Course Data Science PR 8			
15	Analysis I HÜ 1		Programming Paradigms HÜ 1		Algorithms and Data Structures GÜ 1		Graph Theory and Optimization 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											
20			Mathematics II (EN)		Statistics		Scientific Programming		Ethics in Information Technology			
21			Analysis II VL 2		Statistics VL 3		Scientific Programming VL 3		Ethics in Information Technology VL 2			
22	Fundamentals of Materials Science (part 1)		Analysis II HÜ 1		Statistics GÜ 1		Scientific Programming GÜ 2		Ethics in Information Technology SE 2			
23	Fundamentals of Materials Science I VL 2		Analysis II GÜ 1									
24	Physical and Chemical Basics of Materials Science VL 2		Linear Algebra II VL 2									
25			Linear Algebra II HÜ 1									
26			Linear Algebra II GÜ 1									
27					Mathematics III (EN)		Machine Learning		Introduction to Communications and Random Processes			
28			Fundamentals of Materials Science (part 2)		Analysis III VL 2		Machine Learning VL 2		Introduction to Communications and Random Processes VL 3			
29			Fundamentals of Materials Science II VL 2		Analysis III HÜ 1		Machine Learning GÜ 2		Introduction to Communications and Random Processes HÜ 1			
30					Analysis III GÜ 1				Introduction to Communications and Random Processes GÜ 1			
31			Advanced Materials		Differential Equations 1 VL 2							
32			Advanced Materials Characterization VL 2		Differential Equations 1 HÜ 1							
33			Advanced Materials Design VL 2		Differential Equations 1 GÜ 1							
34			Advanced Materials Design HÜ 2									

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.

