Course of Study Data Science (Study Cohort w21)

Legend:

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

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

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