Course of Study Data Science (Study Cohort w23)

Sample course plan G Bachelor Data Science (DSBS) Dual study program
Specialisation I. Mathematics/Computer Science, Specialisation II. Application

Legend

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

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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 - Exercise GÜ 2	**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	**Ethics in Information Technology** Ethics in Information Technology VL 2 Ethics in Information Technology SE 2
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7	**Procedural Programming for Computer Engineers** Procedural Programming for Computer Engineers VL 2 Procedural 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	**Graph Theory and Optimization** Graph Theory and Optimization VL 2 Graph Theory and Optimization GÜ 2	**Data Mining** Data Mining VL 2 Data Mining PBL 2	**Introduction to Electrical Engineering (Technomathematics)** Introduction to Electrical Engineering VL 3 Introduction to Electrical Engineering GÜ 2
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13	**Mathematics I (EN)** Mathematics I VL 4 Mathematics I HÜ 2 Mathematics I GÜ 2	**Foundations of Management** Introduction to Management VL 3 Management Tutorial GÜ 2	**Algorithms and Data Structures** Algorithms and Data Structures VL 4 Algorithms and Data Structures GÜ 1	**Seminars Computer Science** Introductory Seminar Computer Science II SE 2 Introductory Seminar Computer Science I SE 2	**Machine Learning II** Machine Learning II VL 2 Machine Learning II GÜ 3	**Bachelor thesis (dual study program)**
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19		**Programming Paradigms** Programming Paradigms VL 2 Programming Paradigms HÜ 1 Programming Paradigms PR 2	**Statistics** Statistics VL 3 Statistics GÜ 1	**Scientific Programming** Scientific Programming VL 3 Scientific Programming GÜ 2	**Practical module 5 (dual study program, Bachelor's degree)** Practical term 5 0	
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21	**Practical module 1 (dual study program, Bachelor's degree)** Practical term 1 0					
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25		**Mathematics II (EN)** Mathematics II VL 4 Mathematics II HÜ 2 Mathematics II GÜ 2	**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 3	**Computer Engineering** Computer Engineering VL 3 Computer Engineering GÜ 1	
26						
27	**Introduction to Data Science** Introduction to Data Science VL 2 Introduction to Data Science SE 2					
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31				**Practical module 4 (dual study program, Bachelor's degree)** Practical term 4 0	**Combinatorial Structures and Algorithms** Combinatorial Structures and Algorithms VL 3 Combinatorial Structures and Algorithms GÜ 1	
32						
33		**Practical module 2 (dual study program, Bachelor's degree)** Practical term 2 0	**Practical module 3 (dual study program, Bachelor's degree)** Practical term 3 0			
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Linking theory and practice (dual study program, Bachelor's degree) (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.