Course of Study Data Science (Study Cohort w21)

Sample course plan B Bachelor Data Science (DSBS)

Specialisation Mechanics

Legend:

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

Semester 1

Course	Form	Hrs/wk
Discrete Algebraic Structures		
Discrete Algebraic Structures	VL	2
Discrete Algebraic Structures	GÜ	2
Procedural Programming for Computer Engineers		
Procedural Programming for Computer Engineers	VL	1
Procedural Programming for Computer Engineers	HÜ	1
Procedural Programming for Computer Engineers	PR	2
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
Mechanics I (Statics)		
Mechanics I	VL	2
Mechanics I	GÜ	2
Mechanics I	HÜ	1

Semester 2

Course	Form	Hrs/wk
Automata Theory and Formal Languages		
Automata Theory and Formal Languages	VL	2
Automata Theory and Formal Languages	GÜ	2
Stochastics		
Stochastics	VL	2
Stochastics	GÜ	2
Programming Paradigms		
Programming Paradigms	VL	2
Programming Paradigms	HÜ	1
Programming Paradigms	PR	2
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
Mechanics II: Mechanics of Materials		
Mechanics II	VL	2
Mechanics II	GÜ	2
Mechanics II	HÜ	2

Semester 3

Course	Form	Hrs/wk
Databases		
Databases	VL	3
Databases	GÜ	1
Numerical Mathematics I		
Numerical Mathematics I	VL	2
Numerical Mathematics I	GÜ	2
Algorithms and Data Structures		
Algorithms and Data Structures	VL	4
Algorithms and Data Structures	GÜ	1
Statistics		
Statistics	VL	3
Statistics	GÜ	1
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

Semester 4

Course	Form	Hrs/wk
Signals and Systems		
Signals and Systems	VL	3
Signals and Systems	GÜ	2
Foundations of Management		
Introduction to Management	VL	3
Management Tutorial	GÜ	2
Graph Theory and Optimization		
Graph Theory and Optimization	VL	2
Graph Theory and Optimization	GÜ	2
Scientific Programming		
Scientific Programming	VL	3
Scientific Programming	GÜ	2
Machine Learning I		
Machine Learning I	VL	2
Machine Learning I	GÜ	2

Semester 5

Course	Form	Hrs/wk
Introduction to Information Security		
Introduction to Information Security	VL	2
Introduction to Information Security	GÜ	2
Data Mining		
Data Mining	VL	2
Data Mining	PBL	2
Machine Learning II		
Machine Learning II	VL	2
Machine Learning II	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

Semester 6

Course	Form	Hrs/wk
Seminars Computer Science		
Introductory Seminar Computer Science II	SE	2
Introductory Seminar Computer Science I	SE	2
Ethics in Information Technology		
Ethics in Information Technology	VL	2
Ethics in Information Technology	SE	2
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
Bachelor Thesis		

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.