Course of Study Data Science (Study Cohort w22)

Sample course plan F 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

Rows 1–6

Discrete Algebraic Structures	**Automata Theory and Formal Languages**	**Databases**	**Signals and Systems**	**Introduction to Information Security**	**Ethics in Information Technology**
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	Ethics in Information Technology — VL 2
Discrete Algebraic Structures — GÜ 2	Automata Theory and Formal Languages — GÜ 2	Databases - Exercise — GÜ 2	Signals and Systems — GÜ 2	Introduction to Information Security — GÜ 2	Ethics in Information Technology — SE 2

Rows 7–12

Procedural Programming for Computer Engineers	**Stochastics**	**Numerical Mathematics I**	**Graph Theory and Optimization**	**Data Mining**	**Introduction into Medical Technology and Systems**
Procedural Programming for Computer Engineers — VL 2	Stochastics — VL 2	Numerical Mathematics I — VL 2	Graph Theory and Optimization — VL 2	Data Mining — VL 2	Introduction into Medical Technology and Systems — VL 2
Procedural Programming for Computer Engineers — HÜ 1	Stochastics — GÜ 2	Numerical Mathematics I — GÜ 2	Graph Theory and Optimization — GÜ 2	Data Mining — PBL 2	Introduction into Medical Technology and Systems — PS 2
Procedural Programming for Computer Engineers — PR 2					Introduction into Medical Technology and Systems — HÜ 1

Rows 13–18

Mathematics I (EN)	**Foundations of Management**	**Algorithms and Data Structures**	**Seminars Computer Science**	**Machine Learning II**	**Bachelor thesis (dual study program)**
Mathematics I — VL 4	Introduction to Management — VL 3	Algorithms and Data Structures — VL 4	Introductory Seminar Computer Science II — SE 2	Machine Learning II — VL 2	
Mathematics I — HÜ 2	Management Tutorial — GÜ 2	Algorithms and Data Structures — GÜ 1	Introductory Seminar Computer Science I — SE 2	Machine Learning II — GÜ 3	
Mathematics I — GÜ 2					

Rows 19–24

	Programming Paradigms	**Statistics**	**Scientific Programming**	**Practical module 5 (dual study program, Bachelor's degree)**	
	Programming Paradigms — VL 2	Statistics — VL 3	Scientific Programming — VL 3	Practical term 5 — 0	
	Programming Paradigms — HÜ 1	Statistics — GÜ 1	Scientific Programming — GÜ 2		
Practical module 1 (dual study program, Bachelor's degree)	Programming Paradigms — PR 2				
Practical term 1 — 0					

Rows 25–32

Introduction to Data Science	**Mathematics II (EN)**	**Mathematics III (EN)**	**Machine Learning I**	**Introduction to Communications and Random Processes**
	Mathematics II — VL 4	Analysis III — VL 2	Machine Learning I — VL 2	Introduction to Communications and Random Processes — VL 3
	Mathematics II — HÜ 2	Analysis III — HÜ 1	Machine Learning I — GÜ 3	Introduction to Communications and Random Processes — HÜ 1
Introduction to Data Science — VL 2	Mathematics II — GÜ 2	Analysis III — GÜ 1		Introduction to Communications and Random Processes — GÜ 1
Introduction to Data Science — SE 1		Differential Equations 1 — VL 2		
		Differential Equations 1 — HÜ 1		
		Differential Equations 1 — GÜ 1	**Practical module 4 (dual study program, Bachelor's degree)**	**Introduction to Data Acquisition and Processing**
			Practical term 4 — 0	Measurements: Methods and Data Processing — VL 2
				Measurements: Methods and Data Processing — GÜ 1

Rows 33–38

	Practical module 2 (dual study program, Bachelor's degree)	**Practical module 3 (dual study program, Bachelor's degree)**		Data Acquisition and Data Processing — PS 2
	Practical term 2 — 0	Practical term 3 — 0		

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.