Course of Study Data Science (Study Cohort w22)

Sample course plan L 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

Sem.						
1–6	**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
7–12	**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	**MED I: Introduction to Anatomy** Introduction to Anatomy — VL 2 **MED I: Introduction to Radiology and Radiation Therapy** Introduction to Radiology and Radiation Therapy — VL 2
13–18	**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)**
19–24	**Practical module 1 (dual study program, Bachelor's degree)** Practical term 1 — 0	**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	
25–32	**Introduction to Data Science** Introduction to Data Science — VL 2 Introduction to Data Science — SE 1	**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	**Image Processing** Image Processing — VL 2 Image Processing — GÜ 2	
31–32				**Practical module 4 (dual study program, Bachelor's degree)** Practical term 4 — 0	**Introduction to Data Acquisition and Processing** Measurements: Methods and Data Processing — VL 2 Measurements: Methods and Data Processing — GÜ 1 Data Acquisition and Data Processing — PS 2	
33–38		**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			

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.