# Course of Study Data Science (Study Cohort w21)

Sample course plan D  Bachelor Data Science (DSBS)

Specialisation Electrical Engineering

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

| # | Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 |
|---|---|---|---|---|---|---|
| 1 | **Discrete Algebraic Structures** | **Automata Theory and Formal Languages** | **Databases** | **Signals and Systems** | **Introduction to Information Security** | **Seminars Computer Science** |
| 2 | 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 | Introductory Seminar Computer Science II  SE  2 |
| 3 | Discrete Algebraic Structures  GÜ  2 | Automata Theory and Formal Languages  GÜ  2 | Databases  GÜ  1 | Signals and Systems  GÜ  2 | Introduction to Information Security  GÜ  2 | Introductory Seminar Computer Science I  SE  2 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | **Procedural Programming for Computer Engineers** | **Stochastics** | **Numerical Mathematics I** | **Foundations of Management** | **Data Mining** | **Ethics in Information Technology** |
| 8 | Procedural Programming for Computer Engineers  VL  1 | Stochastics  VL  2 | Numerical Mathematics I  VL  2 | Introduction to Management  VL  3 | Data Mining  VL  2 | Ethics in Information Technology  VL  2 |
| 9 | Procedural Programming for Computer Engineers  HÜ  1 | Stochastics  GÜ  2 | Numerical Mathematics I  GÜ  2 | Management Tutorial  GÜ  2 | Data Mining  PBL  2 | Ethics in Information Technology  SE  2 |
| 10 | Procedural Programming for Computer Engineers  PR  2 | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | **Mathematics I (EN)** | **Programming Paradigms** | **Algorithms and Data Structures** | **Graph Theory and Optimization** | **Machine Learning II** | **Computability and Complexity Theory** |
| 14 | Analysis I  VL  2 | Programming Paradigms  VL  2 | Algorithms and Data Structures  VL  4 | Graph Theory and Optimization  VL  2 | Machine Learning II  VL  2 | Computability and Complexity Theory  VL  2 |
| 15 | Analysis I  HÜ  1 | Programming Paradigms  HÜ  1 | Algorithms and Data Structures  GÜ  1 | Graph Theory and Optimization  GÜ  2 | Machine Learning II  GÜ  3 | Computability and Complexity Theory  GÜ  2 |
| 16 | Analysis I  GÜ  1 | Programming Paradigms  PR  2 | | | | |
| 17 | Linear Algebra I  VL  2 | | | | | |
| 18 | Linear Algebra I  HÜ  1 | | | | | |
| 19 | Linear Algebra I  GÜ  1 | **Mathematics II (EN)** | **Statistics** | **Scientific Programming** | **Simulation of Transport and Handling Systems** | **Bachelor Thesis** |
| 20 | | Analysis II  VL  2 | Statistics  VL  3 | Scientific Programming  VL  3 | Simulation of Transport and Handling Systems  VL  1 | |
| 21 | **Electrical Engineering I: Direct Current Networks and Electromagnetic Fields** | Analysis II  HÜ  1 | Statistics  GÜ  1 | Scientific Programming  GÜ  2 | Simulation of Transport and Handling Systems  GÜ  3 | |
| 22 | | Analysis II  GÜ  1 | | | | |
| 23 | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields  VL  3 | Linear Algebra II  VL  2 | | | | |
| 24 | | Linear Algebra II  HÜ  1 | | | | |
| 25 | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields  GÜ  2 | Linear Algebra II  GÜ  1 | **Mathematics III (EN)** | **Machine Learning I** | | |
| 26 | | | Analysis III  VL  2 | Machine Learning I  VL  2 | | |
| 27 | | **Electrical Engineering II: Alternating Current Networks and Basic Devices** | Analysis III  HÜ  1 | Machine Learning I  GÜ  2 | | |
| 28 | | | Analysis III  GÜ  1 | | | |
| 29 | | Electrical Engineering II: Alternating Current Networks and Basic Devices  VL  3 | Differential Equations 1  VL  2 | | | |
| 30 | | | Differential Equations 1  HÜ  1 | | | |
| 31 | | Electrical Engineering II: Alternating Current Networks and Basic Devices  GÜ  2 | Differential Equations 1  GÜ  1 | | | |
| 32 | | | | | | |

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.