# Course of Study General Engineering Science (German program, 7 semester) (Study Cohort w20)

Sample course plan A  Bachelor General Engineering Science (German program, 7 semester) (AIWBS(7))
Specialisation Mechanical Engineering, Focus Materials in Engineering Sciences

Legend:

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

| LP | Semester 1 | Form | Hrs/wk | Semester 2 | Form | Hrs/wk | Semester 3 | Form | Hrs/wk | Semester 4 | Form | Hrs/wk | Semester 5 | Form | Hrs/wk | Semester 6 | Form | Hrs/wk | Semester 7 | Form | Hrs/wk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Chemistry** | | | **Electrical Engineering II: Alternating Current Networks and Basic Devices** | | | **Technical Thermodynamics II** | | | **Signals and Systems** | | | **Introduction to Control Systems** | | | **Foundations of Management** | | | **Advanced Internship AIW/ GES** | | |
| 2 | Chemistry I+II | VL | 4 | Electrical Engineering II: Alternating Current Networks and Basic Devices | VL | 3 | Technical Thermodynamics II | VL | 2 | Signals and Systems | VL | 3 | Introduction to Control Systems | VL | 2 | Introduction to Management | VL | 3 | | | |
| 3 | Chemistry I+II | HÜ | 2 | Electrical Engineering II: Alternating Current Networks and Basic Devices | UE | 2 | Technical Thermodynamics II | HÜ | 1 | Signals and Systems | UE | 2 | Introduction to Control Systems | UE | 2 | Management Tutorial | UE | 2 | | | |
| 4 | | | | | | | Technical Thermodynamics II | UE | 1 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | **Electrical Engineering I: Direct Current Networks and Electromagnetic Fields** | | | **Fundamentals of Mechanical Engineering Design** | | | **Mathematics III** | | | **Fluid Dynamics** | | | **Measurement Technology for Mechanical Engineers** | | | **Advanced Materials** | | | | | |
| 8 | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields | VL | 3 | Fundamentals of Mechanical Engineering Design | VL | 2 | Analysis III | VL | 2 | Fluid Mechanics | VL | 3 | Measurement Technology for Mechanical Engineering | VL | 2 | Advanced Materials Characterization | VL | 2 | | | |
| 9 | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields | UE | 2 | Fundamentals of Mechanical Engineering Design | HÜ | 2 | Analysis III | UE | 1 | Fluid Mechanics | HÜ | 2 | Measurement Technology for Mechanical Engineering | HÜ | 1 | Advanced Materials Design | VL | 2 | | | |
| 10 | | | | | | | Analysis III | HÜ | 1 | | | | Practical Course: Measurement and Control Systems | PR | 2 | Advanced Materials Design | HÜ | 2 | | | |
| 11 | | | | | | | Differential Equations 1 | VL | 2 | | | | | | | | | | | | |
| 12 | | | | | | | Differential Equations 1 | UE | 1 | | | | | | | | | | | | |
| | | | | | | | Differential Equations 1 | HÜ | 1 | | | | | | | | | | | | |
| 13 | **Mathematics I** | | | **Technical Thermodynamics I** | | | | | | **Mechanics IV (Oscillations, Analytical Mechanics, Multibody Systems, Numerical Mechanics)** | | | **Numerical Mathematics I** | | | **Enhanced Fundamentals of Materials Science** | | | | | |
| 14 | Linear Algebra I | VL | 2 | Technical Thermodynamics I | VL | 2 | | | | Mechanics IV | VL | 3 | Numerical Mathematics I | VL | 2 | Enhanced Fundamentals: Metals | VL | 2 | | | |
| 15 | Linear Algebra I | UE | 1 | Technical Thermodynamics I | HÜ | 1 | | | | Mechanics IV | UE | 2 | Numerical Mathematics I | UE | 2 | Enhanced Fundamentals: Ceramics and Polymers | VL | 2 | | | |
| 16 | Linear Algebra I | HÜ | 1 | Technical Thermodynamics I | UE | 1 | **Mechanics III (Dynamics)** | | | Mechanics IV | HÜ | 1 | | | | Enhanced Fundamentals: Ceramics and Polymers | HÜ | 1 | | | |
| 17 | Analysis I | VL | 2 | | | | Mechanics III | VL | 3 | | | | | | | | | | | | |
| 18 | Analysis I | UE | 1 | | | | Mechanics III | UE | 2 | | | | | | | | | | | | |
| | Analysis I | HÜ | 1 | | | | Mechanics III | HÜ | 1 | | | | | | | | | | | | |
| 19 | | | | **Mechanics II: Mechanics of Materials** | | | | | | **Advanced Mechanical Engineering Design (part 2)** | | | **Computer Engineering** | | | **Structural Materials (part 2)** | | | **Bachelor Thesis** | | |
| 20 | | | | Mechanics II | VL | 2 | | | | | | | Computer Engineering | VL | 3 | Fundamentals of | VL | 2 | | | |
| 21 | **Mechanics I (Statics)** | | | Mechanics II | UE | 2 | **Advanced Mechanical Engineering Design (part** | | | Advanced Mechanical | VL | 2 | Computer Engineering | UE | 1 | Mechanical Properties | | | | | |
| | Mechanics I | VL | 2 | | | | | | | | | | | | | | | | | | |

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| | Mechanics I UE 2<br>Mechanics I HÜ 1 | Mechanics II HÜ 2 | 1)<br>Advanced Mechanical Engineering Design I VL 2<br>Advanced Mechanical Engineering Design I HÜ 2 | Engineering Design II<br>Advanced Mechanical Engineering Design II HÜ 2 | | of Materials |
| 22 | | | | **Mechanical Engineering: Design (part 2)** | | |
| 23 | | | | | | |
| 24 | | | **Mechanical Engineering: Design (part 1)**<br>Embodiment Design and 3D-CAD VL 2 | Team Project Design Methodology PBL 2<br>Mechanical Design Project II PBL 3 | | |
| 25 | | **Mathematics II**<br>Linear Algebra II VL 2 | Mechanical Design Project I PBL 3 | **Fundamentals of Materials Science (part 2)**<br>Fundamentals of Materials Science II VL 2 | **Structural Materials (part 1)**<br>Welding Technology VL 3 | |
| 26 | | Linear Algebra II UE 1<br>Linear Algebra II HÜ 1 | | | | |
| 27 | **Programming in C**<br>Programming in C VL 1 | Analysis II VL 2 | **Fundamentals of Materials Science (part 1)**<br>Fundamentals of Materials Science I VL 2 | | | |
| 28 | Programming in C PR 1 | Analysis II HÜ 1<br>Analysis II UE 1 | | | **Material Science Laboratory**<br>Companion Lecture for Materials Science Laboratory VL 2<br>Material Science Laboratory PR 4 | |
| 29 | **Physics for Engineers (AIW)** | | | | | |
| 30 | Physics for Engineers VL 2 | | | | | |
| 31 | Physics for Engineers UE 1 | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

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.