Course of Study General Engineering Science (German program, 7 semester) (Study Cohort w21)

Legend:

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

Sample course plan A Bachelor General Engineering Science (German program, 7 semester) (AIWBS(7))

Specialisation Advanced Materials

1	**Chemistry** Chemistry I+II VL 4 Chemistry I+II HÜ 2	**Electrical Engineering II: Alternating Current Networks and Basic Devices** Electrical Engineering II: Alternating Current Networks and Basic Devices VL 3 Electrical Engineering II: Alternating Current Networks and Basic Devices GÜ 2	**Technical Thermodynamics II** Technical Thermodynamics II VL 2 Technical Thermodynamics II HÜ 1 Technical Thermodynamics II GÜ 1	**Signals and Systems** Signals and Systems VL 3 Signals and Systems GÜ 2	**Introduction to Control Systems** Introduction to Control Systems VL 2 Introduction to Control Systems GÜ 2	**Foundations of Management** Introduction to Management VL 3 Management Tutorial GÜ 2	**Advanced Internship AIW/ ES** Advanced Internship AIW/ ES: Preparation SE 1 Advanced Intenship AIW/ ES: Internship-accompanying Seminar SE 1
2							
3							
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7	**Electrical Engineering I: Direct Current Networks and Electromagnetic Fields** Electrical Engineering I: Direct Current Networks and Electromagnetic Fields VL 3 Electrical Engineering I: Direct Current Networks and Electromagnetic Fields GÜ 2	**Fundamentals of Mechanical Engineering Design** Fundamentals of Mechanical Engineering Design VL 2 Fundamentals of Mechanical Engineering Design HÜ 2	**Mathematics III** Analysis III VL 2 Analysis III GÜ 1 Analysis III HÜ 1 Differential Equations 1 VL 2 Differential Equations 1 GÜ 1 Differential Equations 1 HÜ 1	**Advanced Materials for Sustainability** Advanced Materials Characterization VL 2 Advanced Materials for Sustainability VL 2 Advanced Materials for Sustainability HÜ 2	**Fluid Mechanics (EN)** Fluid Mechanics VL 3 Fluid Mechanics HÜ 2	**Modeling, Simulation and Optimization (EN)** Modeling, Simulation and Optimization IV 4	
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13	**Mathematics I** Linear Algebra I VL 2 Linear Algebra I GÜ 1 Linear Algebra I HÜ 1 Analysis I VL 2 Analysis I GÜ 1 Analysis I HÜ 1	**Technical Thermodynamics I** Technical Thermodynamics I VL 2 Technical Thermodynamics I HÜ 1 Technical Thermodynamics I GÜ 1		**Computational Mechanics (EN)** Computational Mechanics IV 4 Computational Mechanics GÜ 2	**Quantum Mechanics for Materials Science** Atomic-Scale Fundamentals of Materials Science VL 2 Atomic-Scale Fundamentals of Materials Science HÜ 2	**Machine Learning for Physical Systems** Machine Learning for Physical Systems VL 2 Machine Learning for Physical Systems PBL 2	
14							
15							
16							
17							
18			**Engineering Mechanics III (Dynamics)** Engineering Mechanics III VL 3 Engineering Mechanics III GÜ 2 Engineering Mechanics III HÜ 1				
19		**Mechanics II: Mechanics of Materials** Mechanics II VL 2 Mechanics II GÜ 2 Mechanics II HÜ 2		**Mathematics IV (EN)** Differential Equations 2 VL 2 Differential Equations 2 HÜ 1 Differential Equations 2 GÜ 1 Complex Functions VL 2 Complex Functions HÜ 1 Complex Functions GÜ 1	**Materials Science Laboratory** Companion Lecture for Materials Science Laboratory VL 2 Material Science Laboratory PR 4	**Materials Engineering: Materials Selection, Processing and Modelling** Materials Selection and Processing VL 3 Materials and Process Modeling VL 3	**Bachelor Thesis**
20							
21	**Mechanics I (Statics)** Mechanics I VL 2 Mechanics I GÜ 2 Mechanics I HÜ 1		**Numerical Mathematics I** Numerical Mathematics I VL 2 Numerical Mathematics I GÜ 2				
22							
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25		**Mathematics II** Linear Algebra II VL 2 Linear Algebra II GÜ 1 Linear Algebra II HÜ 1 Analysis II VL 2 Analysis II HÜ 1 Analysis II GÜ 1		**Fundamentals of Materials Science (part 2)** Fundamentals of Materials Science II VL 2	**Measurement Technology for Mechanical Engineers** Measurement Technology for Mechanical Engineering VL 2 Measurement Technology for Mechanical Engineering PR 2 Practical Course: Measurement and Control Systems PR 2		
26							
27	**Computer Science for Engineers - Introduction and Overview** Computer Science for Engineers - Introduction and Overview VL 3 Computer Science for Engineers - Introduction and Overview GÜ 2		**Fundamentals of Materials Science (part 1)** Fundamentals of Materials Science I VL 2 Physical and Chemical Basics of Materials Science VL 2				
28							
29							
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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.