

# Course of Study General Engineering Science (German program, 7 semester) (Study Cohort w22)

|  |                                    |                           |                              |
|--|------------------------------------|---------------------------|------------------------------|
| 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 | Mechanical Engineering  | Focus | Theoretical Mechanical Engineering   | Semester 4                                  | Semester 5   | Semester 6   | Semester 7  |
|----------------|---|-------|--|---|--|--|---|
|                |   |       |  | FormHrs/wk                                  | FormHrs/wk   | FormHrs/wk   | FormHrs/wk  |
| 1              | <b>Chemistry</b>  |       | <b>Electrical Engineering II: Alternating Current Networks and Basic Devices</b> | <b>Technical Thermodynamics II</b>          | <b>Signals and Systems</b>                             | <b>Introduction to Control Systems</b>                 | <b>Foundations of Management</b>                  |
| 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 GÜ 2   | Technical Thermodynamics II HÜ 1            | Signals and Systems GÜ 2                               | Introduction to Control Systems GÜ 2                   | Management Tutorial GÜ 2                          |
| 4              |   |       | Electrical Engineering II: Alternating Current Networks and Basic Devices GÜ 2   | Technical Thermodynamics II GÜ 1            |  |  |   |
| 5              |   |       |  |   |  |  |   |
| 6              |   |       |  |   |  |  |   |
| 7              | <b>Electrical Engineering I: Direct Current Networks and Electromagnetic Fields</b> |       | <b>Fundamentals of Mechanical Engineering Design</b>                             | <b>Mathematics III</b>                      | <b>Fluid Dynamics</b>                                  | <b>Measurement Technology for Mechanical Engineers</b> | <b>Modeling, Simulation and Optimization (EN)</b> |
| 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 Engineers VL 2   | Modeling, Simulation and Optimization IV 4        |
| 9              | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields HÜ 2   |       | Fundamentals of Mechanical Engineering Design HÜ 2                               | Analysis III GÜ 1                           | Fluid Mechanics HÜ 2                                   | Measurement Technology for Mechanical Engineers HÜ 1   |   |
| 10             | Electrical Engineering I: Direct Current Networks and Electromagnetic Fields GÜ 2   |       | Fundamentals of Mechanical Engineering Design GÜ 2                               | Differential Equations 1 VL 2               |  | Measurement Technology for Mechanical Engineers HÜ 1   |   |
| 11             |   |       |  | Differential Equations 1 GÜ 1               |  | Practical Course: Measurement and Control Systems PR 2 |   |
| 12             |   |       |  | Differential Equations 1 HÜ 1               |  |  |   |
| 13             | <b>Mathematics I</b>  |       | <b>Technical Thermodynamics I</b>  |   | <b>Computational Mechanics</b>                         | <b>Numerical Mathematics I</b>                         | <b>Mathematics IV</b>                             |
| 14             | Mathematics I VL 4  |       | Technical Thermodynamics I VL 2  |   | Computational Multibody Dynamics IV 2                  | Numerical Mathematics I VL 2                           | Complex Functions VL 2                            |
| 15             | Mathematics I HÜ 2  |       | Technical Thermodynamics I HÜ 1  |   | Computational Mechanics GÜ 2                           | Numerical Mathematics I GÜ 2                           | Complex Functions GÜ 1                            |
| 16             | Mathematics I GÜ 2  |       | Technical Thermodynamics I GÜ 1  |   | Computational Structural Mechanics IV 2                |  | Complex Functions HÜ 1                            |
| 17             |   |       |  | <b>Engineering Mechanics III (Dynamics)</b> |  |  | Differential Equations 2 VL 2                     |
| 18             |   |       |  | Engineering Mechanics III VL 3              |  |  | Differential Equations 2 GÜ 1                     |
| 19             |   |       |  | Engineering Mechanics III GÜ 2              |  |  | Differential Equations 2 HÜ 1                     |
| 20             |   |       | <b>Mathematics II</b>  |   |  | <b>Heat Transfer</b>                                   | <b>Machine Learning I</b>                         |
| 21             | <b>Computer Science for Engineers - Introduction and Overview</b>                   |       | Mathematics II VL 4  |   | <b>Advanced Mechanical Engineering Design (part 2)</b> | Heat Transfer VL 3                                     | Machine Learning I VL 2                           |
| 22             | Computer Science for Engineers - Introduction and Overview VL 3                     |       | Mathematics II HÜ 2  |   | Advanced Mechanical Engineering Design II VL 2         | Heat Transfer HÜ 2                                     | Machine Learning I GÜ 2                           |
| 23             | Computer Science for Engineers - Introduction and Overview GÜ 2                     |       | Mathematics II GÜ 2  |   | Advanced Mechanical Engineering Design I HÜ 2          |  |   |
| 24             |   |       |  |   | Advanced Mechanical Engineering Design I HÜ 2          |  |   |
| 25             |   |       |  |   | <b>Mechanical Engineering: Design (part 2)</b>         |  |   |
| 26             |   |       |  |   | Team Project Design Methodology PBL 2                  |  |   |
| 27             | <b>Engineering Mechanics I (Stereostatics)</b>                                      |       |  |   | Mechanical Design Project II PBL 3                     |  |   |
| 28             | Engineering Mechanics I VL 2  |       | <b>Engineering Mechanics II (Elastostatics)</b>                                  |   |  | <b>Production Engineering (part 1)</b>                 | <b>Production Engineering (part 2)</b>            |
| 29             | Engineering Mechanics I GÜ 2  |       | Engineering Mechanics II VL 2  |   | <b>Fundamentals of Materials Science (part 2)</b>      | Production Engineering I VL 2                          | Production Engineering II VL 2                    |
| 30             | Engineering Mechanics I HÜ 1  |       | Engineering Mechanics II GÜ 2  |   | Fundamentals of Materials Science II VL 2              | Production Engineering I HÜ 1                          | Production Engineering II HÜ 1                    |
| 31             |   |       | Engineering Mechanics II HÜ 2  |   |  |  |   |
| 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.

