

# Course of Study Green Technologies: Energy, Water, Climate (Study Cohort w23)

|         |  |                                    |                           |                              |
|---------|--|------------------------------------|---------------------------|------------------------------|
| 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 S Bachelor Green Technologies: Energy, Water, Climate (GTBS) Dual study program

| Specialisation Energy Systems / Renewable Energies |   |  |   |   |   |   |  |
|--|---|--|---|---|---|---|--|
| 1  | <b>Mathematics I</b>  |  | <b>Technical Thermodynamics I</b>                                 | <b>Basics of Electrical Engineering</b>                               | <b>Fundamentals of Fluid Mechanics</b>  | <b>Heat and Mass Transfer</b>   | <b>System Integration Renewable Energies (part 2)</b>        |
| 2  | Mathematics I VL 4  |  | Technical Thermodynamics I VL 2                                   | Basics of Electrical Engineering VL 3                                 | Fundamentals of Fluid Mechanics VL 2  | Heat and Mass Transfer VL 2   | System Integration Renewable Energies II VL 2                |
| 3  | Mathematics I HÜ 2  |  | Technical Thermodynamics I HÜ 1                                   | Basics of Electrical Engineering GÜ 2                                 | Fluid Mechanics for Process Engineering HÜ 2  | Heat and Mass Transfer GÜ 1   | System Integration Renewable Energies II GÜ 1                |
| 4  | Mathematics I GÜ 2  |  | Technical Thermodynamics I GÜ 1                                   |   | Fundamentals on Fluid Mechanics GÜ 2  | Heat and Mass Transfer HÜ 1   |  |
| 5  |   |  |   |   |   |   |  |
| 6  |   |  |   |   |   |   |  |
| 7  |   |  | <b>Mathematics II</b>   | <b>Technical Thermodynamics II</b>                                    | <b>Sanitary Engineering I</b>   | <b>Introduction to Control Systems</b>                                      | <b>Climate change impact &amp; mitigation</b>                |
| 8  |   |  | Mathematics II VL 4   | Technical Thermodynamics II VL 2                                      | Wastewater Disposal VL 2  | Introduction to Control Systems VL 2  | Technical measures to mitigate greenhouse gas emissions VL 2 |
| 9  |   |  | Mathematics II HÜ 2   | Technical Thermodynamics II HÜ 1                                      | Wastewater Disposal HÜ 1  | Introduction to Control Systems GÜ 2  | Technical measures to mitigate greenhouse gas emissions GÜ 2 |
| 10   | <b>General and Inorganic Chemistry</b>                            |  | Mathematics II GÜ 2   | Technical Thermodynamics II GÜ 1                                      | Drinking Water Supply VL 2  |   | Basics of climate change and its effects VL 2                |
| 11   | General and Inorganic Chemistry VL 3                              |  |   |   | Drinking Water Supply HÜ 1  |   |  |
| 12   | Fundamentals in Inorganic Chemistry PR 3                          |  |   |   |   |   |  |
| 13   | Fundamentals in Inorganic Chemistry GÜ 1                          |  |   |   |   |   |  |
| 14   |   |  |   | <b>Mathematics III</b>  | <b>Conventional Energy Systems and Energy Industry</b>  | <b>Practical module 5 (dual study program, Bachelor's degree)</b>           | <b>Bachelor thesis (dual study program)</b>                  |
| 15   | <b>Computer Science for Engineers - Introduction and Overview</b> |  | <b>Organic Chemistry</b>  | Analysis III VL 2   | Power Industry VL 1   | Practical term 5 0  |  |
| 16   | Computer Science for Engineers - Introduction and Overview VL 3   |  | Organic Chemistry VL 2  | Analysis III GÜ 1   | Energy markets and energy trading VL 2  |   |  |
| 17   | Computer Science for Engineers - Introduction and Overview PR 2   |  | Organic Chemistry PR 2  | Analysis III HÜ 1   | Fossil Energy Systems VL 2  |   |  |
| 18   | Computer Science for Engineers - Introduction and Overview GÜ 2   |  | Organic Chemistry GÜ 2  | Differential Equations 1 VL 2   | Fuels I VL 1  |   |  |
| 19   |   |  |   | Differential Equations 1 GÜ 1   |   |   |  |
| 20   |   |  |   | Differential Equations 1 HÜ 1   | <b>Renewable Energies</b>   | <b>Economic and environmental project assessment</b>                        |  |
| 21   | <b>Green Technologies I</b>                                       |  | <b>Practical module 2 (dual study program, Bachelor's degree)</b> | <b>Measurement Technology for Chemical and Bioprocess Engineering</b> | Renewable Energies I VL 2   | Basics of Environmental Project Assessment VL 2                             |  |
| 22   | Meteorology and Climate Systems - Introduction VL 2               |  | Practical term 2 0  | Measurement Technology VL 2   | Renewable Energies II VL 2  | Case studies economic and environmental project assessment GÜ 1             |  |
| 23   | Introduction Green Technologies SE 2                              |  |   | Physical Fundamentals of Measurement Technology VL 2                  | Renewable Energies I HÜ 1   | Basics of economic project assessment VL 2                                  |  |
| 24   | Meteorology and Climate Systems - Introduction GÜ 2               |  |   | Practical Course Measurement Technology PR 2                          | Fuels II VL 1   |   |  |
| 25   |   |  |   |   |   |   |  |
| 26   |   |  |   |   | <b>Practical module 4 (dual study program, Bachelor's degree)</b>                               | <b>Electrical Power Systems I: Introduction to Electrical Power Systems</b> |  |
| 27   | <b>Practical module 1 (dual study program, Bachelor's degree)</b> |  | <b>Engineering Mechanics II (Elastostatics)</b>                   | <b>Green Technologies II (part 1)</b>                                 | Practical term 4 0  | Electrical Power Systems I: Introduction to Electrical Power Systems VL 3   |  |
| 28   | Practical term 1 0  |  | Engineering Mechanics II VL 2                                     | Environmental Technologie VL 2  |   | Electrical Power Systems I: Introduction to Electrical Power Systems GÜ 2   |  |
| 29   |   |  | Engineering Mechanics II GÜ 2                                     | Pollutant analysis VL 2   |   |   |  |
| 30   |   |  | Engineering Mechanics II HÜ 2                                     |   |   |   |  |
| 31   |   |  |   |   | <b>Green Technologies II (part 2)</b>   | <b>Green Technologies III</b>   |  |
| 32   |   |  |   |   | Practical Exercise Environmental Technology PR 1  | Scientific Work and Writing SE 2  |  |
| 33   | <b>Engineering Mechanics I (Stereostatics)</b>                    |  |   | <b>Practical module 3 (dual study program, Bachelor's degree)</b>     | <b>Computer Science for Engineers - Programming Concepts, Data Handling &amp; Communication</b> | Study Work Green Technologies PS 2  |  |
| 34   | Engineering Mechanics I VL 2                                      |  |   | Practical term 3 0  | Computer Science for Engineers - Programming Concepts, Data Handling & Communication VL 3       |   |  |
| 35   | Engineering Mechanics I GÜ 2                                      |  |   |   | Computer Science for Engineers - Programming Concepts, Data Handling & Communication GÜ 2       |   |  |
| 36   | Engineering Mechanics I HÜ 1                                      |  |   |   |   |   |  |
| 37   |   |  |   |   |   | <b>System Integration Renewable Energies (part 1)</b>                       |  |
| 38   |   |  |   |   |   | System Integration Renewable Energies I VL 2                                |  |
| 39   |   |  |   |   |   | System Integration Renewable Energies I GÜ 1                                |  |

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.

