# Course of Study Bioprocess Engineering (Study Cohort w14)

Sample course plan A Bachelor Bioprocess Engineering (BVTBS)

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Engineering Mechanics I** | | | **Engineering Mechanics II** | | | **Basics of Electrical Engineering** | | | **Fundamentals of Fluid Mechanics** | | | **Heat and Mass Transfer** | | | **Thermal Separation Processes (part 2)** | | |
| | Engineering Mechanics I | VL | 3 | Engineering Mechanics II | VL | 3 | Basics of Electrical Engineering | VL | 3 | Fundamentals of Fluid Mechanics | VL | 2 | Heat and Mass Transfer | VL | 2 | Separation Processes | PR | 1 |
| 2 | Engineering Mechanics I | UE | 2 | Engineering Mechanics II | UE | 2 | Basics of Electrical Engineering | UE | 2 | Exercises in Fluid Mechanics for Process Engineering | HÜ | 1 | Heat and Mass Transfer | UE | 1 | **Chemical Reaction Engineering (part 2)** | | |
| 3 | | | | | | | | | | | | | | | | Experimental Course Chemical Engineering | PR | 2 |
| 4 | | | | | | | | | | | | | | | | **Process and Plant Engineering I** | | |
| 5 | | | | | | | | | | | | | | | | Process and Plant Engineering I | VL | 2 |
| 6 | | | | | | | | | | | | | | | | Process and Plant Engineering I | HÜ | 1 |
| 7 | **Mathematics I** | | | **Technical Thermodynamics I** | | | **Technical Thermodynamics II** | | | **Phase Equilibria Thermodynamics** | | | **Thermal Separation Processes (part 1)** | | | Process and Plant Engineering I | UE | 1 |
| 8 | Linear Algebra I | VL | 2 | Technical Thermodynamics I | VL | 2 | Technical Thermodynamics II | VL | 2 | Thermodynamics III | VL | 2 | Thermal Separation Processes | VL | 3 | **Particle Technology and Solids Process Engineering** | | |
| 9 | Linear Algebra I | UE | 1 | Technical Thermodynamics I | HÜ | 1 | Technical Thermodynamics II | HÜ | 1 | Thermodynamics III | UE | 1 | Thermal Separation Processes | UE | 2 | Particle Technology I | VL | 2 |
| 10 | Linear Algebra I | HÜ | 1 | Technical Thermodynamics I | UE | 1 | Technical Thermodynamics II | UE | 1 | Thermodynamics III | HÜ | 1 | Thermal Separation Processes | HÜ | 1 | Particle Technology I | UE | 1 |
| 11 | Analysis I | VL | 2 | | | | | | | | | | | | | Particle Technology I | PR | 2 |
| 12 | Analysis I | UE | 1 | **Biochemistry and Microbiology** | | | **Mathematics III** | | | **Foundations of Management** | | | **Introduction to Control Systems** | | | | | |
| 13 | Analysis I | HÜ | 1 | Biochemistry | VL | 2 | Analysis III | VL | 2 | Introduction to Management | VL | 4 | Introduction to Control Systems | VL | 2 | **Bachelor Thesis** | | |
| 14 | | | | Biochemistry | PBL | 1 | Analysis III | UE | 1 | Project Entrepreneurship | PBL | 2 | Introduction to Control Systems | UE | 2 | | | |
| 15 | **Fundamentals in Inorganic Chemistry** | | | Microbiology | VL | 2 | Analysis III | HÜ | 1 | | | | | | | | | |
| 16 | Fundamentals in Inorganic Chemistry | VL | 4 | Microbiology | PBL | 1 | Differential Equations 1 | VL | 2 | **Informatics for Process Engineers** | | | **Chemical Reaction Engineering (part 1)** | | | | | |
| 17 | Fundamentals in Inorganic Chemistry | PR | 3 | **Mathematics II** | | | Differential Equations 1 | UE | 1 | Numeric and Matlab | PR | 2 | Chemical Reaction Engineering | VL | 2 | | | |
| 18 | | | | Linear Algebra II | VL | 2 | Differential Equations 1 | HÜ | 1 | Informatics for Process Engineers | VL | 2 | Chemical Reaction Engineering | HÜ | 2 | | | |
| 19 | | | | Linear Algebra II | UE | 1 | **Fundamentals in Molecular Biology** | | | Informatics for Process Engineers | UE | 2 | | | | | | |
| 20 | | | | Linear Algebra II | HÜ | 1 | Genetics and Molecular Biology | VL | 2 | | | | **Bioprocess Engineering - Advanced** | | | | | |
| 21 | **Fundamentals of Process Engineering** | | | Analysis II | VL | 2 | Genetics and Molecular Biology | PBL | 1 | **Bioprocess Engineering - Fundamentals** | | | Bioprocess Engineering - Advanced | VL | 2 | | | |
| 22 | Environmental Technologie | VL | 2 | Analysis II | HÜ | 1 | Lab Course in Microbiology and Biochemistry | PR | 3 | Bioprocess Engineering - Fundamentals | VL | 2 | Bioprocess Engineering - Advanced | UE | 2 | | | |
| 23 | Introduction into Process Engineering/Bioprocess Engineering | VL | 2 | Analysis II | UE | 1 | | | | Bioprocess Engineering- Fundamentals | HÜ | 2 | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | |
| 25 | Fundamentals of Technical Drawing and Materials | VL | 1 | | | | | | | Bioprocess Engineering - | PR | 2 | | | | | | |
| 26 | Fundamentals of Technical Drawing and Materials | HÜ | 1 | | | | | | | | | | | | | | | |
| 27 | **Physics for VT/BVT/EUT-Engineers** | | | **Organic Chemistry** | | | | | | | | | | | | | | |
| 28 | | | | Organic Chemistry | VL | 4 | | | | | | | | | | | | |
| 29 | Physics for VT/BVT/EUT- | VL | 2 | Organic Chemistry | PR | 3 | | | | | | | | | | | | |

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| 30 | Engineers<br>Physics for VT/BVT/EUT-Engineers | UE | 1 | | Fundamental Practical Course |
| 31 | | | | | |
| 32 | Physics-Lab for VT/BVT/EUT-Engineers | PR | 2 | | |

Nontechnical Complementary 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.