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

Sample course plan B Bachelor General Engineering Science (German program, 7 semester) (AIWBS(7))
Specialisation Mechanical Engineering, Focus Energy Systems

Semester 1

Chemistry
Course	Form	Hrs/wk
Chemistry I+II	VL	4
Chemistry I+II	HÜ	2

Electrical Engineering I: Direct Current Networks and Electromagnetic Fields
Course	Form	Hrs/wk
Electrical Engineering I: Direct Current Networks and Electromagnetic Fields	VL	3
Electrical Engineering I: Direct Current Networks and Electromagnetic Fields	GÜ	2

Mathematics I
Course	Form	Hrs/wk
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

Mechanics I (Statics)
Course	Form	Hrs/wk
Mechanics I	VL	2
Mechanics I	GÜ	2
Mechanics I	HÜ	1

Programming in C
Course	Form	Hrs/wk
Programming in C	VL	1
Programming in C	PR	1

Physics for Engineers (AIW)
Course	Form	Hrs/wk
Physics for Engineers	VL	2
Physics for Engineers	GÜ	1

Semester 2

Electrical Engineering II: Alternating Current Networks and Basic Devices
Course	Form	Hrs/wk
Electrical Engineering II: Alternating Current Networks and Basic Devices	VL	3
Electrical Engineering II: Alternating Current Networks and Basic Devices	GÜ	2

Fundamentals of Mechanical Engineering Design
Course	Form	Hrs/wk
Fundamentals of Mechanical Engineering Design	VL	2
Fundamentals of Mechanical Engineering Design	HÜ	2

Technical Thermodynamics I
Course	Form	Hrs/wk
Technical Thermodynamics I	VL	2
Technical Thermodynamics I	HÜ	1
Technical Thermodynamics I	GÜ	1

Mechanics II: Mechanics of Materials
Course	Form	Hrs/wk
Mechanics II	VL	2
Mechanics II	GÜ	2
Mechanics II	HÜ	2

Mathematics II
Course	Form	Hrs/wk
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

Semester 3

Technical Thermodynamics II
Course	Form	Hrs/wk
Technical Thermodynamics II	VL	2
Technical Thermodynamics II	HÜ	1
Technical Thermodynamics II	GÜ	1

Mathematics III
Course	Form	Hrs/wk
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

Mechanics III (Dynamics)
Course	Form	Hrs/wk
Mechanics III	VL	3
Mechanics III	GÜ	2
Mechanics III	HÜ	1

Advanced Mechanical Engineering Design (part 1)
Course	Form	Hrs/wk
Advanced Mechanical Engineering Design I	VL	2
Advanced Mechanical Engineering Design I	HÜ	2

Mechanical Engineering: Design (part 1)
Course	Form	Hrs/wk
Embodiment Design and 3D-CAD	VL	2
Mechanical Design Project I	PBL	3

Fundamentals of Materials Science (part 1)
Course	Form	Hrs/wk
Fundamentals of Materials Science I	VL	2
Physical and Chemical Basics of Materials Science	VL	2

Semester 4

Signals and Systems
Course	Form	Hrs/wk
Signals and Systems	VL	3
Signals and Systems	GÜ	2

Fluid Dynamics
Course	Form	Hrs/wk
Fluid Mechanics	VL	3
Fluid Mechanics	HÜ	2

Mechanics IV (Oscillations, Analytical Mechanics, Multibody Systems, Numerical Mechanics)
Course	Form	Hrs/wk
Mechanics IV	VL	3
Mechanics IV	GÜ	2
Mechanics IV	HÜ	1

Advanced Mechanical Engineering Design (part 2)
Course	Form	Hrs/wk
Advanced Mechanical Engineering Design II	VL	2
Advanced Mechanical Engineering Design II	HÜ	2

Mechanical Engineering: Design (part 2)
Course	Form	Hrs/wk
Team Project Design Methodology	PBL	2
Mechanical Design Project II	PBL	3

Fundamentals of Materials Science (part 2)
Course	Form	Hrs/wk
Fundamentals of Materials Science II	VL	2

Semester 5

Introduction to Control Systems
Course	Form	Hrs/wk
Introduction to Control Systems	VL	2
Introduction to Control Systems	GÜ	2

Measurement Technology for Mechanical Engineers
Course	Form	Hrs/wk
Measurement Technology for Mechanical Engineering	VL	2
Measurement Technology for Mechanical Engineering	HÜ	1
Practical Course: Measurement and Control Systems	PR	2

Heat Transfer
Course	Form	Hrs/wk
Heat Transfer	VL	3
Heat Transfer	HÜ	2

Computer Engineering
Course	Form	Hrs/wk
Computer Engineering	VL	3
Computer Engineering	GÜ	1

Reciprocating Machinery (part 1)
Course	Form	Hrs/wk
Fundamentals of Reciprocating Engines and Turbomachinery - Part Reciprocating Engines	VL	1
Fundamentals of Reciprocating Engines and Turbomachinery - Part Reciprocating Engines	HÜ	1

Numerical Mathematics I
Course	Form	Hrs/wk
Numerical Mathematics I	VL	2
Numerical Mathematics I	GÜ	2

Semester 6

Foundations of Management
Course	Form	Hrs/wk
Introduction to Management	VL	3
Management Tutorial	GÜ	2

Electrical Machines and Actuators
Course	Form	Hrs/wk
Electrical Machines and Actuators	VL	3
Electrical Machines and Actuators	HÜ	2

Reciprocating Machinery (part 2)
Course	Form	Hrs/wk
Internal Combustion Engines I	VL	2
Internal Combustion Engines I	HÜ	1

Renewables Energy Systems und Energy Economy
Course	Form	Hrs/wk
Renewable Energy	VL	2
Energy Systems and Energy Industry	VL	2
Power Industry	VL	1
Renewable Energy	GÜ	1

Semester 7

Advanced Internship AIW/ ES
Course	Form	Hrs/wk
Advanced Internship AIW/ ES: Preparation	SE	1
Advanced Intenship AIW/ ES: Internship-accompanying Seminar	SE	1

Bachelor Thesis

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.