

## 2 Curriculum Bachelor Chemical and Process Engineering

### 2.1 Semester overview

Semester CP	Fundamentals of Mathematics and Natural Sciences	Fundamentals of Scientific Engineering	Thermodynamics und Transport Processes	Fundamentals of Process Engineering	Lab Courses, Elective Courses, Thesis
1 33	Advanced Mathematics I (7)  General and Inorganic Chemistry (6)	Engineering Mechanics: Statics (5)  Mechanical Design (9)  Material Science and Engineering (4)			Laboratory I Part I (2)
2 31	Advanced Mathematics II (7)  Computational Methods (5)  Organic Chemistry (5)	Engineering Mechanics: Strength of Material (5)  Material Science and Engineering (5)			Basic Practical Course Part II (4)
3 30	Advanced Mathematics III (7)  Computational Methods – Lab (3)	Engineering Mechanics: Dynamics (5)	Thermodynamics I (7)		Advanced Practical Course (5)  Soft Skill Qualification (3)*
4 29			Thermodynamics II (7)  Heat and Mass Transfer (7)  Fluidynamics (5)  Control Engineering and System Dynamics (5)		Mandatory Elective Course I (5)*
5 32	Elementary Physics (7)			Chemical Process Engineering (6)  Thermal Process Engineering (6)  Mechanical Processing (6)	Mandatory Elective Course II (5)*  Specialization/ Project Work (2)**
6 25					Specialization/ Project Work (10)**  Soft Skill Qualification (3)*  Bachelor Thesis (12)

Numbers in brackets: Credit points (CP)

\* The distribution of the *Soft Skill Qualifications* and *Mandatory Elective Courses* over the semesters is a suggestion and can also be arranged differently depending on the modules selected.  
In the area of *Soft Skill Qualifikations*, at least one of the modules *Industrial Business Administration* or *Ethics and Material Cycles* must be selected.

\*\* The *Specialization/ Project Work* lasts two semesters and always begins in the winter semester. A profile subject can be chosen from approx. 10 offers. The distribution of the workload between winter and summer semesters may differ for individual profile subjects.

## 2.2 Overview: Fields and Modules

Area	Module	Responsible	SWS	CP
47 CP Fundamentals of Mathematics and Natural Sciences	Advanced Mathematics I	Griesmeier	6	7
	Advanced Mathematics II	Griesmeier	6	7
	Advanced Mathematics III	Griesmeier	6	7
	Computational Methods	Stein	3 + P	8
	General and Inorganic Chemistry	Behrens	5	6
	Organic Chemistry	Meier	4	5
	Elementary Physics	Ustinov	6	7
38 CP Fundamentals of Scientific Engineering	Engineering Mechanics: Statics and Strength of Material	Willenbacher	8	10
	Engineering Mechanics: Dynamics	Klahn	4	5
	Material Science and Engineering	Schneider	8	9
	Mechanical Design A	Matthiesen/ Albers	8	9
	Control Engineering and System Dynamics	Meurer	4	5
26 CP Thermodynamics and Transport Processes	Thermodynamics I	Enders	5	7
	Thermodynamics II	Enders	5	7
	Fluidynamics	Nirschl	4	5
	Heat/ Mass Transfer	Wetzel	5	7
18 CP Fundamentals of Process Engineering	Mechanical Processing	Dittler	4	6
	Thermal Process Engineering	Zeiner	4	6
	Chemical Process Engineering	Wehinger	4	6
10 CP Mandatory Elective Courses	2 Elective Modules		4 each	5 each
11 CP Laboratories	Basic Practical Course	Horn, Sinanis	P	6
	<u>Either:</u> Process Machines <u>Or:</u> Practical Course in Organic Chemistry for Chemical Engineers	Gleiß Rapp	P	5
6 CP Soft Skill Qualifikations	Elective Modules		2 each	3 each
12 CP Specialization/ Project Work	1 Elective Module			12
12 LP	Bachelorarbeit			12
SUMME				180

CP: Credit Points (ECTS), SWS: weekly teaching hours

## 2.3 Lectures/ Exercises/ Laboratories (Semester Overview, Attendance Time hours per week)

	1. Semester (WS)					2. Semester (SS)				
	V	Ü	P	CP	E	V	Ü	P	CP	E
Advanced Mathematics I and II	4	2	-	7	S+K	4	2	-	7	S+K
Computational Methods	-	-	-	-	-	2	1	P	5	K
Engineering Mechanics: Statics/ Strength of Material	2	2	-	5	-	2	2	-	5	K
General and Inorganic Chemistry (AAC)	3	2	-	6	K	-	-	-	-	-
Material Science and Engineering I and II	3	1	-	4	-	2	2	-	5	M
Mechanical Design A	4	2	-	9	S+K	-	-	-	-	-
Organic Chemistry for Engineers	-	-	-	-	-	2	2	-	5	K
Basic Lab Course	-	-	P	2	S	-	-	P	4	S
<i>Total credit points/ Number of graded exams</i>				33	3				31	5

	3. Semester (WS)					4. Semester (SS)				
	V	Ü	P	LP	E	V	Ü	P	LP	E
Advanced Mathematics III	4	2	-	7	S+K	-	-	-	-	-
Engineering Mechanics: Dynamics	2	2	-	5	S+K	-	-	-	-	-
Computational Methods	-	-	P	3	S	-	-	-	-	-
Control Engineering and System Dynamics	-	-	-	-	-	2	2	-	5	K
Fluidynamics	-	-	-	-	-	2	2	-	5	S+K
Technical Thermodynamics I and II	3	2	-	7	S+K	3	2	-	7	S+K
Heat- and Mass Transfer	-	-	-	-	-	3	2	-	7	K
Mandatory Elective Courses	-	-	-	-	-	2	2	-	5	K
Lab (Chemistry or Process Engineering) 2 weeks Feb./March	-	-	P	5	S	-	-	-	-	-
Soft Skill Qualification	2	-	-	3	S	-	-	-	-	-
<i>Total credit points/ Number of graded exams</i>				30	3				31	5

	5. Semester (WS)					6. Semester (SS)				
	V	Ü	P	LP	E	V	Ü	P	LP	E
Chemical Process Engineering	2	2	-	6	K	-	-	-	-	-
Thermal Process Engineering	2	2	-	6	K	-	-	-	-	-
Mechanical Processing	2	2	-	6	K	-	-	-	-	-
Elementary Physics	4	2	-	7	K	-	-	-	-	-
Mandatory Elective Courses	4	2	-	5	K	-	-	-	-	-
Specialization/ Project Work	1	1	-	2	-	1	1	P	10	A+M
Soft Skill Qualification*					-	2	-	-	3	S
Bachelor Thesis	-	-	-	-	-	360 hrs			12	A
<i>Total credit points/ Number of graded exams</i>				32	5				25	3

WS: Wintersemester, SS: Sommersemester

V: Lecture; Ü: Exercise P: Practical/ Lab; CP: Credit Points E: Examination  
K: Written exam, M: Oral Exam, A: Examination of another type/ thesis, S: Completed Coursework (ungraded)