

Curriculum – Technical Engineering

Start of studies in the winter semester

		1. Semester WS		2. Semester SS		3. Semester WS		4. Semester SS		5. Semester WS		6. Semester SS		7. Semester WS	
		ECTS	SWS	ECTS	SWS	ECTS	SWS	ECTS	SWS	ECTS	SWS	ECTS	SWS	ECTS	SWS
1.	Study section 1 – Basic modules														
1.1	Mathematics I	5	4												
1.2	Mathematics II			5	4										
1.3	Materials Engineering I – Fundamentals	5	4												
1.4	Electrical Engineering I			5	4										
1.5	Computer Science I	5	4												
1.6	Computer Science II			5	4										
1.7	Engineering Mechanics			5	4										
1.8	Strength of Materials I			5	4										
1.9	Engineering Design and CAD	5	4												
1.10	General and Inorganic Chemistry	5	4												
1.11	German for Technical Studies 1			5	4										
1.12	German for Technical Studies 2	5	4												
1.13	English for Engineers UNIcert® II, Business English	(5)	(4)												
1.14	English for Engineers UNIcert® II, Technical English			(5)	(4)										
2.	Study section 2 – Specialization modules I														
2.1.1	Machine Elements					5	4								
2.1.2	Strength of Materials II – FEM					5	4								
2.1.3	Product Engineering and Designing with Plastics					5	4								
2.1.4	Project Management							5	4						
2.1.5	Mold Making							5	4						
2.2.1	Electrical Engineering II					5	4								
2.2.2	Measurement Technology							5	4						
2.2.3	Computer Science III							5	4						
2.2.4	Battery Technology							5	4						
2.3.1	Biology					5	4								
2.3.2	Materials Engineering II – Advanced					5	4								
2.3.3	Physical Chemistry and Chemistry Laboratory Course					5	4								
2.3.4	Organic Chemistry and Polymer Chemistry							5	4						
2.3.5	Plastics Processing I							5	4						

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2.4.1	Thermodynamics – Fundamentals					5	4								
2.4.2	Technical Fluid Mechanics					5	4								
2.4.3	Process Engineering – Fundamentals					5	4								
2.4.4	Air, Soil and Water					5	4								
2.5.1	German for Technical Studies 3					5	4								
2.5.2	German for Technical Studies 4							5	4						
2.5.3	English for Engineers Unicert® III for Professional Purposes 1							(5)	(4)						
2.5.4	English for Engineers Unicert® III for Professional Purposes 2					(5)	(4)								
2.5.5	International Competence							5	4						
3.	Study section 3 – Specialization modules II														
3.1.1	Laser Material Processing											5	4		
3.1.2	Digital Production									5	4				
3.1.3	Innovation Management for Technical Products									5	4				
3.1.4	Scientific Research and Writing											5	4		
3.1.5	Project Development Course									5	4				
3.2.1	Electronics and Digital Technology									5	4				
3.2.2	Digital Signal Processing											5	4		
3.2.3	PLC-Programming											5	4		
3.2.4	Machine Learning									5	4				
3.2.5	Energy Conversion in Power/Working Machines											5	4		
3.2.6	Smart Grids									5	4				
3.3.1	Rheology and Simulations on Plastic Processing									5	4				
3.3.2	Materials Engineering III – Emerging Materials									5	4				
3.3.3	Instrumental Analysis and Laboratory Course											5	4		
3.3.4	Toxicology and Hazardous Substances									5	4				
3.3.5	Plastics Processing II											5	4		
3.3.6	Lightweight Engineering											5	4		

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3.4.1	Chemical and Biological Reaction Technology											5	4		
3.4.2	Chemical and Biological Process Technology									5	4				
3.4.3	Computational Fluid Dynamics											5	4		
3.4.4	Design of Experiments (DoE)											5	4		
3.4.5	Recycling and Waste Management									5	4				
3.4.6	Calculation and Design of Unit Operations in Process Engineering											5	4		
3.4.7	Process Engineering – Advanced									5	4				
4.	Practical semester with practical and bachelor's thesis														
4.1	Practical Work													18	18
4.2	Bachelor Thesis													12	12
Gesamt		30	24	30	24	30	24	30	24	30	24	30	24	30	0

From the second study section onwards, the specialization modules are offered as compulsory elective modules. Students can choose freely from these, whereby at least 5 ECTS credits must be earned from each specialization per study section.

Specializations:

- Classical Engineering
- Energy Technology and Information Processing
- Chemistry and Materials
- Process Technology and Environmental Engineering

There is no entitlement to all compulsory elective modules and elective modules being offered. Similarly, there is no entitlement to courses being offered if the number of participants is insufficient.