Master of Science in Chemical and Bioengineering

Credits according to categories – HS24 / FS25

Categories according to study regulation (SR) 2018			Hours	Credits		Performance assessment mode / minutes	
Examination subjects according to regulation		Courses according to curriculum		ECTS	min. per category		
Pre-study option during Bachelor's studies							
Research Project, Industry Internship					**13**		
	529-0301-00	Industry Internship (min. 7 weeks)		13		ungraded semester performance	
	529-0300-10	Research Project (7 weeks)	16A	13		ungraded semester performance	
Master's studies							
Core Subjects					24		
Biochemical Engineering	529-0615-01	Biochemical and Polymer Reaction Engineering	3G	6		o	30
	529-0837-01	Biomicrofluidic Engineering	3G	6		w	75
Products and Materials	529-0619-01	Chemical Product Design	3G	6		o	30
	529-0610-01	Interface Engineering of Materials	4G	6		w	120
Process Design	529-0643-01	Process Design and Development	3G	6		w	180
	529-0613-01	Process Simulation and Flowsheeting	3G	6		w	180
Catalysis and Separation	151-0927-00	Rate-Controlled Separations in Fine Chemistry	3V+ 1U	6		o	30
	529-0617-01	Catalysis Engineering	3G	6		o	30
Electives (Core Subjects can also be used as Electives)					23		
Biochemical Engineering	636-0108-00	Biological Engineering and Biotechnology	3V	4		w	90
	636-0007-00	Computational Systems Biology	3V+2U	6		w	120
	551-0324-00	Systems Biology	4V	6		w	150
	551-0357-00	Cellular Matters: Properties, Functions and Applications of Biomolecular Condensates	2S	4	graded semester performance		
	376-1714-00	Biocompatible Materials	3V	4		w	90
Environment and Energy	529-0745-01	General and Environmental Toxicology	3V	6		o	30
	151-0209-00	Renewable Energy Technologies	3G	4		w	120
	529-0191-01	Electrochemical Energy Conversion and Storage Technologies	3V+3U	4		w	120
	529-0507-00	Hands-on Electrochemistry for Energy Storage and Conversion Applications	6P	6	graded semester performance		
	529-0659-00	Electrochemistry: Fundamentals, Cells & Applications	3G	6		o	30
	529-0180-00	Sustainable Chemistry and Chemical Engineering in Industry	2G	2	graded semester performance		
Products and Materials	529-0948-00	Solid State Chemistry	6P	6	graded semester performance		
	327-2145-00	Advanced Polymer Synthesis	3G	4	end-of-sem. exam (w/90 min)		
	529-0135-00	Cook and Look: Watching Functional Materials in Situ	3G	3	ungraded semester performance		
Systems and Process Engineering	529-0611-01	Molecular Aspects of Catalysts and Surfaces	4G	6		w	60
	529-0941-00	Introduction to Macromolecular Chemistry	3G	4		w	60
	529-0017-00	Chemometrics and Machine Learning for Chemical Engineers	3G	6		w	90
	151-0109-00	Turbulent Flows	2V+1U	4		w	120
Modeling and Simulations	529-0150-00	Digital Chemistry	3G	6		o	30
	151-0207-00	Theory and Modeling of Reactive Flows	3G	4		o	30
	529-0004-01	Classical Simulation of (Bio)Molecular Systems	4G	6		o	30
Economics and Technology Management	363-0389-00	Technology and Innovation Management	2G	3	end-of-sem. Exam (w/90min)		
	363-0565-00	Principles of Macroeconomics	2V	3	end-of-sem. Exam (w/90min)		
	363-1008-00	Public Economics	2V	3		w	90
Case Studie					3		
	529-0459-01	Case Studies in Process Design	3A	3	ungraded semester performance		
Master Thesis	529-0600-10	Master Thesis (20 weeks)	40D	25	25	graded semester performance	
Compulsory Electives in 'Science in Perspective' (SiP)					2	acc. to performance ass.	
		Total			90		
		Sum according to regulation			90		

spring semester
autumn and spring semester

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Does not take place in FS25:

Products and Materials	529-0052-00	Concepts and Tools for Sustainable Chemicals Manufacture	2G	4		w	60