

Major: Functional Materials

Master's Programme in Chemical, Biochemical and Materials Engineering

Course substitution arrangements for students who continue their studies according to the curriculum of 2022-2024 during the transitional period of 1.8.2024 - 31.12.2025, when some of the courses of the curriculum 2022-2024 are no longer taught.

Common compulsory courses (3–5 cr)			
Code	Course name	ECTS credits	Equivalence in 1.8.2024 - 31.12.2025
<u>CHEM-E0105</u>	Academic Learning Community	3–5	Please contact the teacher
Choose total 60 credits from compulsory core courses (35–40 cr) and Specialisation courses (20–25 cr)			
Compulsory core courses (35–40 cr)			
<i>If CHEM-C3410 Nanomaterials is part of your BSc studies, choose 35 cr, if not choose all the following courses.</i>			
Code	Course name	ECTS credits	Equivalence in 1.8.2024 - 31.12.2025
<u>CHEM-E5140</u>	Materials Characterization, laboratory course	5	The course continues
<u>CHEM-E4155</u>	Solid State Chemistry	5	The course continues
<u>CHEM-E4105</u>	Nanochemistry and Nanoengineering	5	The course continues
<u>CHEM-E5150</u>	Surfaces and Films	5	CHEM-E5170 Surfaces and Films
<u>CHEM-E5160</u>	Functional Soft Materials D	5	The course continues
<u>CHEM-C3410</u>	Nanomaterials*	5	The course continues
<u>CHEM-E5200</u>	Personal Research Assignment in Functional Materials, V	5	CHEM-E4121 Research Project in Chemistry and Materials Science I (+ CHEM-E4122 Research Project in Chemistry and Material Science II 5cr, if student makes 2 x 5 cr project)
<u>CHEM-E5220</u>	Group Research Assignment in Functional Materials, V	5	MEC-E3007 Product Sustainability
*If not part of your bachelor studies.			

Specialisation courses (choose 20–25 cr)

Choose 20-25 cr to fulfil the requirement of 60 cr of master studies.

The tracks are only recommendation, you may choose any combination of the courses below

Code	Course name	ECTS credits	Equivalence in 1.8.2024 - 31.12.2025
MEMS and microsensors:			
<u>CHEM-E5125</u>	Thin Film Technology D	5	CHEM-E5175 Materials Engineering by Thin Films
<u>ELEC-E8715</u>	Design and Analysis of MEMS P	5	The course continues
<u>ELEC-E3220</u>	Semiconductor Devices	5	The course continues
<u>CHEM-E5115</u>	Microfabrication D	5	The course continues
<u>CHEM-E5230</u>	Advanced Micro- and Nanotechnology D	8	Discontinued. No replacement
<u>ELEC-E8713</u>	Materials and Microsystems Integration	5	ELEC-E8716 Heterogeneous Integration D
<u>ELEC-E3140</u>	Semiconductor Physics	5	The course continues
<u>ELEC-E8726</u>	Biosensing	5	The course continues
<u>CHEM-E8135</u>	Microfluidics and BioMEMS D	5	The course continues
<u>CHEM-E5240</u>	Advanced Materials Characterization D	5	Discontinued. No replacement
<u>NBE-E4150</u>	DNA Nanotechnology	5	The course continues
<u>ELEC-E9210</u>	Organic Electronics: Materials and Devices P	5	The course continues
Solid state and nanoscience track:			
<u>CHEM-E4205</u>	Crystallography Basics and Structural Characterization	5	The course continues
<u>CHEM-E5240</u>	Advanced Materials Characterization D	5	Discontinued. No replacement
<u>CHEM-E4215</u>	Functional Inorganic Materials	5	The course continues
<u>MEC-E6001</u>	Engineering Metals and Alloys D	5	The course continues
<u>CHEM-E5105</u>	Powder Metallurgy and Composites D	5	The course continues
<u>PHYS-E0421</u>	Solid-State Physics	5	Discontinued. No replacement
<u>ELEC-E3140</u>	Semiconductor Physics	5	The course continues
<u>PHYS-E0525</u>	Microscopy of Nanomaterials	5	The course continues
<u>PHYS-E0526</u>	Microscopy of Nanomaterials, laboratory course	5	The course continues
<u>ELEC-E4810</u>	Metamaterials and Nanophotonics D	5	Discontinued. No replacement

Polymers, soft matter and bio track:

<u>CHEM-E2200</u>	Polymer Blends and Composites	5	The course continues for the academic year 2024-2025 only
<u>CHEM-E2130</u>	Polymer Properties	5	The course continues
<u>CHEM-E8135</u>	Microfluidics and BioMEMS D	5	The course continues
<u>ELEC-E8726</u>	Biosensing	5	The course continues
<u>CHEM-E4210</u>	Molecular Thermodynamics D	5	The course continues
<u>CHEM-E2100</u>	Polymer Synthesis	5	The course continues
<u>CHEM-E2155</u>	Biopolymers D	5	The course continues
<u>ELEC-E8724</u>	Biomaterials science	5	ELEC-E8729 Biomaterial Interfaces D
<u>ELEC-E8729</u>	Biomaterial Interfaces D	5	The course continues
<u>PHYS-E0422</u>	Soft Condensed Matter Physics	5	The course continues
<u>MEC-E7006</u>	Advanced Manufacturing D	5	The course continues
<u>NBE-E4150</u>	DNA Nanotechnology	5	The course continues
<u>ELEC-E9210</u>	Organic Electronics: Materials and Devices P	5	The course continues