

CHEMISTRY OF MATERIALS M.SC. – STUDY PLAN

1 ST SEMESTER WINTER SEMESTER	2 ND SEMESTER SUMMER SEMESTER	3 RD SEMESTER WINTER SEMESTER	4 TH SEMESTER SUMMER SEMESTER
Molecular Physics and Condensed Matter (MMC B001) 10 ECTS	Functional Materials and Nanomaterials (MMC P001) 10 ECTS	Research Laboratory Work (MMC P003) 15 ECTS	Master's Thesis (MMC P005) 30 ECTS
Structural Principles in Materials Science (MMC B003) 10 ECTS	Materials Synthesis (MMC P002) 10 ECTS		
Materials Chemistry Laboratory: Synthesis & Characterization (MMC B004) 5 ECTS	Multi-Scale Simulation & Computational Materials Science I (MMC W003) - 5 ECTS	Multi-Scale Simulation & Computational Materials Science II (MMC W005) - 5 ECTS	
	„required specialization“ – 10 ECTS		
	Advanced Characterization Tools I (MMC W004) - 5 ECTS	Advanced Characterization Tools II (MMC W006) - 5 ECTS	
Foreign Language (MMC W002) 5 ECTS	Elective Modules as „individual specialization“	Elective Modules as „individual specialization“	
	15 ECTS		

compulsory module (total of 65 ECTS)

elective module (total of 25 ECTS): 10 ECTS „required specialization“, 15 ECTS „individual specialization“

CHEMISTRY OF MATERIALS M.SC. – MODULES AND EXAMS

	module title	module code	types of courses ¹	types of examination	Type of module ²	ECTS	Required ECTS
1st Semester winter semester	Molecular Physics and Condensed Matter	MMC B001	L / S	written or oral exam (100 %)	C	10	10
	Structural Principles in Materials Science	MMC B003	L / S / E	written or oral exam (70 %) + laboratory report (30 %)	C	10	10
	Materials Chemistry Laboratory: Synthesis & Characterization	MMC B004	E / P	written laboratory reports (100 %)	C	5	5
	Foreign Language	MMC W002	S	active participation + written exam and + oral exam (passed/failed)	C	5	5
2nd Semester summer semester	Functional Materials and Nanomaterials	MMC P001	L / S / P	exam (70 %) + laboratory report (30 %)	C	10	10
	Materials Synthesis	MMC P002	L / S / P	exam (70 %) + laboratory report (30 %)	C	10	10
	Multi-Scale Simulation and Computational Materials Science I*	MMC W003	L / S / P	exam (70 %) + laboratory report (30 %)	E/RS	5	5
	Advanced Characterization Tools I*	MMC W004	L / S / P	exam (75 %) + laboratory reports (25 %)	E/RS	5	
	Multi-Scale Simulation and Computational Materials Science I*	MMC W003	L / S / P	exam (70 %) + laboratory report (30 %)	E/IS	5	15
	Advanced Characterization Tools I*	MMC W004	S / P	written reports on lab practical (70 %) + oral presentation (30 %)	E/IS	5	
	Light-Matter Interactions and Optical Materials Design	MMC W011	L / S	written or oral exam (100 %)	E/IS	5	
	Advanced Polymer Synthesis	MMC W009	L / S	exam (100 %)	E/IS	5	
Batteries and Fuel Cells	MMC W010	L / S / P	exam (50 %); laboratory report (30%); seminar presentation (20 %)	E/IS	5		
Advanced Simulation Methods	MMC W007	L / E / P	written or oral exam (100 %)	E/IS	5		
3rd Semester winter semester	Nanobiotechnology, Molecular Aspects of Nanotechnology	MMC W008	L / S	written or oral exam (100 %)	E/IS	5	15
	Project Management	MMC W001	L / S	Oral or poster pitch related on a personal research project (100 %)	E/IS	5	
	Light-Matter Interactions and Optical Materials Design	MMC W011	L / S	written or oral exam (100 %)	E/IS	5	5
	Multi-Scale Simulation and Computational Materials Science II*	MMC W005	L / S / P	oral presentation of a mini project (100 %)	E/IS	5	
	Advanced Characterization Tools II*	MMC W006	L / P	laboratory reports (70 %) + oral presentation with discussion (30 %)	E/IS	5	
	Multi-Scale Simulation and Computational Materials Science II*	MMC W005	L / S / P	oral presentation of a mini project (100 %)	E/RS	5	
	Advanced Characterization Tools II*	MMC W006	L / S / P	Exam (75 %) + laboratory reports (25 %)	E/RS	5	
Research Laboratory Work	MMC P003	P	final report (100 %)	C	15	15	
4th Semester	Master's Thesis	MMC P005	P	master's thesis (75 %) and it's oral presentation (25 %) during the last two months of thesis preparation	C	30	30

¹: L = lecture; S = seminar; P = laboratory practical or practical course ; E = exercises

²: C = Compulsory; E = Elective (E/RS = elective as „required specialisation“: 2 modules have to be chosen (10 ECTS) | E/IS = elective as „individual specialisation“ (15 ECTS)

* the two modules, that haven't been chosen as „required specialization“, can be selected as elective modules in „individual specialization“ as well