

M.Sc. Materials Chemistry and Mineralogy (MCM) - from WiSe 2021/22

Sem 1	Introduction & Methods									
Modules Sem. 1	Mineralogy		Crystallography		Chemistry		Materials Science		Analytical Methods I	
Language	English		English		English		English		English	
Title, Form, CP Lect. 1	Introduction to Mineralogy	L+E 3	Introduction to Crystallography	L+E 3	Surfaces and Interfaces	L+E 1.5	Introduction to Materials	L 2	Materials Analysis I	L+E 6
Title, Form, CP Lect. 2	Thermodynamics, Kinetics + Phase Equilibria	L+E 3	X-Ray Diffraction and Rietveld Analysis	L+E 3	Solid State Chemistry	L+E 1.5	Phase Diagrams and Relationships	L+E 4		
Title, Form, CP Lect. 3					Solid State Physics	L+E 3				
	4 SWS		5 SWS		4 SWS		4 SWS		4 SWS	
Sem 2	Profile-Building & Methods									
Modules Sem. 2	Profile Chemistry OR Profile Mineralogy							Analytical Methods II		
MCM	choose 4 modules: 2-3 from the profile taken and 1-2 from the other profile							Materials Analysis II	L+E 6	
								4 SWS		
Profile Offer	Chemistry									
Modules Sem. 2	Solid State Synthesis and Characterization		Structure Property Relationships		Surface Chemistry and Catalysis		Solid State Spectroscopy		Computational Material Science	
Language	English		English		English		English		English	
Title, Form, CP Lect. 1	Practical Class SSSC	LP 4.5	Lecture Structure Property Relations	L 3	Lecture Heterogeneous Catalysis	L 3	Solid State Spectroscopy	L 3	Introduction to Computational Materials Science	L 4.5
Title, Form, CP Lect. 2	Seminar SSSC	S 1.5	Seminar Structure Property Relations	S 3	Vacuum and Cryotechnics	L 1	Solid State Spectroscopy Practical	LP 3	Practical Aspects of Computational Materials Science	LP 1.5
Title, Form, CP Lect. 3					Vacuum & Cryotechnics Lab Course	LP 2				
	5 SWS		4 SWS		4 SWS		4 SWS		4 SWS	
Modules Sem. 2	Multiple (Large) Dataset Analysis									
Language	English									
Title, Form, CP Lect. 1	Introduction to Data Analysis	L 3								
Title, Form, CP Lect. 2	Practical Data Analysis	E 3								
Title, Form, CP Lect. 3										
	4 SWS									
Profile Offer	Mineralogy									
Modules Sem. 2	Crystal Structure Analysis		Minerals and Materials		Physical Properties of Crystals		Special Topics in Mineralogy and Materials Science		Nanomaterials	
Language	English		English		English		English		English	
Title, Form, CP Lect. 1	Crystal Structure Analysis and Crystal Chemistry	L+E 4	Mineral Surfaces and Reactions	L 3	Introduction to Crystal Physics	L+E 3	Layered and Framework Silicates in Mineralogy and Technology	L+E 3	Nanomaterials	E 3
Title, Form, CP Lect. 2	Single Crystal Diffraction	L+E 2	Materials Resources	L+E+S 3	Crystal Optics	L+E 3	Lab Course: Zeolites and Clay Minerals	LP 3	Nanotechnology	PE 3
Title, Form, CP Lect. 3										
	5 SWS		4 SWS		4 SWS		4 SWS		5 SWS	
Modules Sem. 2	Functional Ceramics		Technical Ceramics		Petrological Methods in Ore Geology					
Language	English/German		English/German		English					
Title, Form, CP Lect. 1	Bioceramics	L+E 3	Ceramics Lab Course	LP 3	Petrological Methods in Ore Geology	L+E 6				
Title, Form, CP Lect. 2	Modification and Characterization of Material Surfaces for biotechn. Appl.	L+E 3	Ceramics Nanotechnology	L+E 3						
Title, Form, CP Lect. 3										
	4 SWS		5 SWS		4 SWS					
Sem 3	General Studies & Research Modules									
Modules Sem. 3	Research Module I				Research Module II				General Studies	
Language	English				English				English	
Title, Form, CP Lect. 1	Profile Chemistry: Research Module Chemistry I or II				another Research Module out of Research Module Chemistry I or II and Research Module Mineralogy I or II.				Programming	L+E 3
Title, Form, CP Lect. 2	Profile Mineralogy: Research Module Mineralogy I or II								General Studies Compulsory Course	L+E 3
	PE 12				PE 12					
	10 SWS				10 SWS				4 SWS	
Sem 4	Master Thesis									
Modules Sem. 4	Module Master Thesis									
Language	English									
Title, Form, CP Lect. 1	Master Thesis (6 Months) in the Profile taken and oral Master Defense (ca. 1 hour)									
	MT 30									

Compulsory Module

Compulsory Elective Module

Elective Module