

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

Course Details				
<b>Code</b>		<b>Academic Year</b>		<b>Semester</b>
MWT203		2		3
<b>Title</b>		<b>T</b>	<b>A</b>	<b>L</b>
Materials Chemistry		2	2	6
<b>Language</b>	German			
<b>Level</b>	<b>Undergraduate</b>	<b>X</b>	<b>Graduate</b>	<b>Postgraduate</b>
<b>Department / Program</b>	Department of Material Science and Technology (German)			
<b>Forms of Teaching and Learning</b>	Face to Face			
<b>Course Type</b>	<b>Compulsory</b>		<b>Elective</b>	<b>X</b>
<b>Objectives</b>	Being able to describe the principles for the atomic-level build-up of solid materials and the most common and important materials synthesis methods			
<b>Content</b>	Basic theoretical and experimental areas of Solid State Chemistry.			
<b>Prerequisites</b>	None			
<b>Coordinator</b>	None			
<b>Lecturer(s)</b>	Asist Prof. Dr. Duygu Ekinci			
<b>Assistant(s)</b>	None			
<b>Work Placement</b>	No			
Recommended or Required Reading				
<b>Books / Lecture Notes</b>	1. H. Briehl, Chemie der Werkstoffe, Springer Vieweg. 2. M. Baerns, A. Behr et al. Technische Chemie, Wiley-VCH 3. M. Binnewies, Allgemeine und Anorganische Chemie, Springer-Spektrum			
<b>Other Sources</b>				
Additional Course Material				
<b>Documents</b>				
<b>Assignments</b>				
<b>Exams</b>				
Course Composition				
<b>Mathematics und Basic Sciences</b>				%
<b>Engineering</b>				%
<b>Engineering Design</b>				%
<b>Social Sciences</b>				%
<b>Educational Sciences</b>				%

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

Natural Sciences			70%
Health Sciences			%
Expert Knowledge			30%
<b>Assessment</b>			
<b>Activity</b>	<b>Count</b>		<b>Percentage (%)</b>
Midterm Exam	1		30
Quiz			
Assignments			
Attendance			
Recitations	2		15
Projects	2		15
Final Exam	1		40
	<b>Total</b>		<b>100</b>
<b>ECTS Points and Work Load</b>			
<b>Activity</b>	<b>Count</b>	<b>Duration</b>	<b>Work Load (Hours)</b>
Lectures	14	2	28
Self-Study	16	4	64
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	2	2
Recitations	14	1	14
Laboratory	14	1	14
Projects	2	25	50
Final Exam	1	2	2
	<b>Total Work Load</b>		<b>174</b>
	<b>ECTS Points (Total Work Load / Hours)</b>		<b>6</b>
<b>Learning Outcomes</b>			
1	Being able to describe the principles for the atomic-level build-up of solid materials and the most common and important materials synthesis methods.		
<b>Weekly Content</b>			
1	Basic theoretical and experimental areas of Solid State Chemistry		
2	Several basic and general principles about the atomic level growth of solid material (crystalline and amorphous), as well as surfaces		
3	Basic structural chemistry, solid solution, microstructures and phase transformation		
4	Structure and bonding of molecular coordination compounds		
5	Important synthesis methods in solid state and of transition metal complexes, ligand substitutions		

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

6	Metal Surface Treatments for Corrosion Resistance
7	Properties of Semiconductors
8	"Sof Materials" Applications, Properties and Structure
9	Surface Characterization Techniques I
10	Surface Characterization Techniques II
11	Seminar I
12	Bulk Characterization Techniques I
13	Bulk Characterization Techniques II
14	Seminar II

**Contribution of Learning Outcomes to Program Objectives (1-5)**

	P1	P2	P3	P4	P5	P6	P7	P8
1	3	2	3	3	1	2	1	3
<b>Contribution Level</b>	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High							
<b>Program Learning Outcomes:</b>	<a href="http://mbt.tau.edu.tr/program-learning-outcomes">http://mbt.tau.edu.tr/program-learning-outcomes</a>							
<b>Compiled by:</b>	Res. Asst. Burak Evren							
<b>Date of Compilation:</b>	25.04.2022							