

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

Course Details				
Code		Academic Year		Semester
MWT305		3		5
Title		T	A	L
Characterization Methods in Material Science		3	1	6
Language	German			
Level	Undergraduate	X	Graduate	Postgraduate
Department / Program	Materials Science and Technology			
Forms of Teaching and Learning	Face to face			
Course Type	Compulsory	X	Elective	
Objectives	The students will get to know advanced methods of material science, which are used in all areas of application are of great relevance: both in further studies, in scientific institutions, as well as in the industry find these methods routine use. The students learn the possibilities and limits of different methods and are able to find the methods appropriate for a specific problem			
Content	Introduction to solids: atom, molecule Electronic properties of solids Thermal properties Bonds in solids Mechanical properties of solids			
Prerequisites				
Coordinator	None			
Lecturer(s)	Asist Prof.Dr. Çağla Söz Asist Prof.Dr. Meltem Karaismailoğlu			
Assistant(s)	None			
Work Placement	No			
Recommended or Required Reading				
Books / Lecture Notes	Lecture Notes			
Other Sources	Lecture Notes			
Additional Course Material				
Documents				
Assignments				
Exams				
Course Composition				
Mathematics und Basic Sciences				%

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Engineering			50%
Engineering Design			%
Social Sciences			%
Educational Sciences			%
Natural Sciences			50%
Health Sciences			%
Expert Knowledge			%
Assessment			
Activity		Count	Percentage (%)
Midterm Exam		1	40%
Quiz			
Assignments			
Attendance			
Recitations			
Projects			
Final Exam		1	60%
		Total	100
ECTS Points and Work Load			
Activity	Count	Duration	Work Load (Hours)
Lectures	14	2	28
Self-Study	10	10	100
Assignments	3	6	18
Presentation / Seminar Preparation			
Midterm Exam	1	2	2
Recitations	14	1	14
Laboratory	14	2	28
Projects			
Final Exam	1	2	2
		Total Work Load	192
		ECTS Points (Total Work Load / Hours)	6
Learning Outcomes			
1	The students develop a their knowledge and skills in material characterization		
2			
Weekly Content			
1	Introduction to solids: atom, molecule		
2	Electronic properties of solids I: metals		

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3	Electronic properties of solids II: Semiconductors
4	Electronic properties of solids III: Insulators
5	Thermal Properties
6	Bonding in Solids
7	Mechanical Properties of Solids
8	

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

	P1	P2	P3	P4	P5	P6	P7
1	4	5	5	5	4	5	4
2							
3							

Contribution Level 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High

Compiled by:

Date of Compilation: