

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

Course Details				
<b>Code</b>	<b>Academic Year</b>			<b>Semester</b>
MWT308	3			6
<b>Title</b>	<b>T</b>	<b>A</b>	<b>L</b>	<b>ECTS</b>
Powder Metallurgy	2	1	1	6
<b>Language</b>	German			
<b>Level</b>	<b>Undergraduate</b>	X	<b>Graduate</b>	<b>Postgraduate</b>
<b>Department / Program</b>	Materials Science and Technology			
<b>Forms of Teaching and Learning</b>	Face to face			
<b>Course Type</b>	<b>Compulsory</b>		<b>Elective</b>	X
<b>Objectives</b>	Powder metallurgy (PM) is a branch of metallurgy involved in the production of metal and ceramic powders and components thereof. Students are basically at least get to know three stages of production: Powder extraction, - shaping and compaction, - Solidification by sintering.			
<b>Content</b>	Powder Production, Mechanical Alloy, Coaxial Pressing; single-sided, double-sided, isostatic pressing, sintering; Vacuum sintering, hot isostatic pressing, liquid phase sintering			
<b>Prerequisites</b>				
<b>Coordinator</b>				
<b>Lecturer(s)</b>	Asist Prof.Dr. Çağatay Elibol			
<b>Assistant(s)</b>				
<b>Work Placement</b>	No			
Recommended or Required Reading				
<b>Books / Lecture Notes</b>	<ul style="list-style-type: none"> <li>• Klar, E.,Fesko, J.W., Powder Metallurgy, ASM Handbook, Vol. 7., Ohio, 1991.</li> <li>• Övecöğlü, L, ITU Metallurgie und Werkstofftechnik, Lecture Notes</li> </ul>			
<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>				100%
<b>Engineering Design</b>				%

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

Social Sciences			%
Educational Sciences			%
Natural Sciences			%
Health Sciences			%
Expert Knowledge			%
<b>Assessment</b>			
<b>Activity</b>	<b>Count</b>		<b>Percentage (%)</b>
Midterm Exam	1		40
Quiz			
Assignments			
Attendance			
Recitations			
Projects			
Final Exam	1		60
	<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	15	2	30
Self-Study	7	10	70
Assignments	4	8	32
Presentation / Seminar Preparation			
Midterm Exam	1	2	2
Recitations	15	1	15
Laboratory	15	2	30
Projects			
Final Exam	1	2	2
	<b>Total Work Load</b>		<b>181</b>
	<b>ECTS Points (Total Work Load / Hours)</b>		<b>6</b>
<b>Learning Outcomes</b>			
1	Powder metallurgy (PM) is a branch of metallurgy involved in the production of metal and ceramic powders and components thereof. Students are basically at least get to know three stages of production like Powder extraction, shaping and compaction, Solidification by sintering.		
2			
3			
4			
5			

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

6	
7	
8	
9	
10	
11	
12	

**Weekly Content**

1	Metal powder characterization
2	Metal powder production methods
3	Mechanical pressing
4	Sintering fundamentals
5	Secondary processing
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

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

	P1	P2	P3	P4	P5	P6	P7
All							
1	2	3					
2							
3							
4							
5							
6							
7							
8							
9							



DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY  
COURSE SYLLABUS

10							
11							
12							
Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High						
Compiled by:							
Date of Compilation:							