

Course Name/Kode: ILT541CRYSTALLOGRAPHY OF SHAPE MEMORY ALLOYS					ADVANCED TECHNOLOGIES				
Semester	Teaching and Learning Methods							Credit	
	Theory	App.	Lab.	Project	Homework	Other	Total	Credit	ECTS Credit
1-2	42	-	-		100	46	188	3	7.5
Language	Turkish								
Compulsory/ Elective	Elective								
Prerequisites	None								
Course Content	Crystal structure, Martensitic transformation, The mechanism of shape memory effect, Thermoelastic martensite transformation, Thermal and athermal transformation, Shape memory alloys, TiNi base shape memory alloys, Copper base shape memory alloys, Magnetic shape memory alloys, Thermal processes of shape memory alloys, Application of shape memory alloys, Use of shape memory alloys in industry, Use of shape memory alloys in medicine.								
Course Objectives	The objectives of course shall be to enable students to: <ul style="list-style-type: none"> • to understand theory • to learn experimental techniques, and • to learn of applications of shape memory alloys 								
Learning outcomes and competences	<ul style="list-style-type: none"> • Ability to use technical /modern materials to be required in her/his Works, • Ability to present oral and written forms in her/his field, • Ability to work on interdisciplinary studies, • Ability to rapidly distinguish the true an required knowledge, • Ability to do analyze of results. 								
Textbook and /or References	1- FUNAKUBO, H. , (1987). Shape Memory Alloys , J.B. Kennedy, Gordon and Breach Science Publishers, London. 2- NISHIYAMA, Z. , (1978). Martensitic Transformation , Academic Press, New York								
Assessment Criteria								<i>If any, mark as (X)</i>	Percentage (%)
	Midterm Exams							X	30
	Quizzes								
	Homeworks							X	
	Projects								
	Term paper							X	20
	Laboratory Work								
	Other								10
	Final Exam							X	40
Prepared by	Prof. Dr. Ayse AYDOĞDU								
Week	Subject								
1	Crystal Structure								
2	Martensitic Transformation								
3	The mechanism of shape memory effect								
4	Thermoelastic martensite transformation								
5	Thermal and athermal transformation								
6	Shape memory alloys								
7	Midterm Exam								
8	TiNi base shape memory alloys								
9	Copper base shape memory alloys								
10	Magnetic shape memory alloys								
11	Thermal processes of Shape memory alloys								
12	Application of shape memory alloys								
13	Use of shape memory alloys in Industry								
14	Use of shape memory alloys in Medicine								

