

Course Title-Course Code ILT 506 Phase Diagrams and Calculations				Name of the Programme: ADVANCED TECHNOLOGIES				
Semester	Teaching Methods						Credits	
	Lecture	Term Paper	Homework	Project	Other(Self Studying)	Total	Credit	ECTS Credit
1-2	42	-	40	-	106	188	3	7,5
Language	Turkish							
Compulsory / Elective	Elective							
Prerequisites	-							
Course Contents	Thermodynamics laws related with phase diagrams. Gibbs phase rule. Phase diagrams with one, two and three components. Congruent and incongruent melting. Obtaining of phase diagrams. Liquid solidification in equilibrium diagrams. Lever rule and applications. Normal melting systems. Abnormal melting systems. Balanced and unbalanced cooling. Phase ratio applications. Some important drawings and various calculations of phase diagrams with two and three components.							
Course Objectives	To provide technical knowledge on phase diagrams, to construct phase diagrams in binary and ternary systems, to calculate phase ratios.							
Learning Outcomes and Competences	At the end of this course, students will be able to construct phase diagrams and calculate phase ratios in phase diagrams.							
Textbook and /or References	<ol style="list-style-type: none"> 1. Phase Transformation in Metals and Alloys, D.A. Porter, K.E. Easterling 2. The Science and Engineering of Materials, D. R. Askeland 3. Phase Diagrams For Binary Alloys, H. Okamoto 4. ASM Handbook Volume: 03, Alloy Phase Diagrams. 							
Assessment Criteria						<i>If any, mark as (X)</i>	Percent (%)*	
	Midterm Exams					X		
	Quizzes					-		
	Homeworks					X		
	Projects					-		
	Term Paper					-		
	Other					-		
	Final Exam					X		
* The weights of the assessment criteria are determined by the instructor in the beginning of the semester and announced to the students.								
Instructors	Yrd.Doç.Dr. Ceren Oktar Doğanay / January 2009							
Week	Subject							

1-2	Thermodynamics laws related with phase diagrams, phase rule
3	Phase diagrams with one component
4	Phase diagrams with two component
5	Phase diagrams with three component
6	Congruent and incongruent melting.
7-8	Obtaining of phase diagrams.
9	Liquid solidification in equilibrium diagrams. Lever rule and applications.
10	Midterm Exam
11	Balanced and unbalanced cooling
12	Phase ratio applications
13-14	Some important drawings and various calculations of phase diagrams with two and three
15	Final