Course name: MEC 203	ience	Department: Mechanical engineering				
Year/Period	Training Method					Credits
	Course (hours/ week)	Short Exam (#/period)	Project	Midterm Exam	Final Exam	(ECTS)
2022-2023/ Fall Term	3	2	1	1	1	
Language	English					
Compulsory (C)/	C					
Elective (E)						
Prerequisite	No					
Course Content	 Atomic structure and bonds Crystal structures Irregularities in solids Mechanical properties of metals. Dislocation and reinforcement mechanisms Damage Phase diagrams 					
	 Properties of metals and application areas 					
The Aim of Course	 Froperities of metals and application areas Gives the fundementals of materials science and engineering equatel structures, structures 					
The Aim of Course	• Gives the fundamentals of materials science and engineering; crystal structures, structural irregularities in solids, mechanical properties of metals, damage mechanisms, phase diagrams and phase transformations.					
Learning outcomes and competencies	 It connects the properties of ferrous and non-ferrous materials with their microstructure and machinability. Gains the ability to prepare reports within the scope of the term project. 					
Textbook/bibliography	Textbook:					
	 Version, Wiley, 2016. Other: James F. Shackelford, Introduction to Materials Science for Engineers, Global Edition, 8/E, Pearson, 2015. Donald R. Askeland, The Science and Engineering of Materials, 7th Edition, Cengage 					
	Learning, 2015.					
Evaluation criteria	M: He may an		Tick (X)	if available	Percent (%)	0
	Mildlerm exam			(X) (X)	3	0
	Quiz (A) 10 Homework III IIII				0	
	Project			(X)	10	0
	Laboratory	Laboratory		(11)	1	0
	Final Exam			(X)	5	0
Responsible of the	Dr. Hande YAVUZ					
course						
Week	Subject					
I	Introduction to materials science and engineering					
2-3	Atomic structure and bonds Crystal structures Irregularities in solids					
4-6	Mechanical properties of metals.					
7	Dislocation and reinforcement mechanisms					
8	Midterm exam					
9-12	Damage: introduction to fracture mechanics, fatigue, creep					
13	Phase diagrams					
14	Phase transformations					
15	Properties of metals and application areas					
16	Final					