

1. Course Description

COURSE DESCRIPTION FORM				
Course Code and Title	KM346 BASIC MATERIAL SCIENCE			
Course Semester	6			
Catalog Description (Content) of the Course	Structure of materials, physicochemical, thermal and mechanical properties of materials, material test method. Classification of materials. Iron and steel based materials. Stainless steels. Non-ferrous metals. Plastic materials. Refractor materials. Cement, lime, plaster. Composite materials.			
Main Textbook	Yalçın, H., Gürü, M., Malzeme Bilgisi, Palme Yayınevi, ANKARA, 2002.			
Supporting Textbooks	<ul style="list-style-type: none"> Donald R. Askeland, Çeviri: M. Erdoğan, Malzeme Bilimi ve Mühendislik Malzemeleri, Cilt I-II, Nobel Yayın Dağıtım, ANKARA. D Jr, Callister William. "Materials Science and Engineering: An Introduction." <i>John Wiley & Sons. Inc. – New York</i> 			
Course Credit (ECTS)	4			
Prerequisites of the Course (Compulsory attendance should be indicated here.)	There is no prerequisite or co-requisite for this course			
Type of the Course	Compulsory			
Instruction Language of the Course	Turkish			
Object and Target of the Course	The course is taught to get students acquainted with basic concepts in materials.			
Learning Outcomes of the Course	Teaching of technological development of advances in the fields of materials and manufacturing			
Mode of Delivery	Lecture, Question & Answer, Demonstration, Drill - Practice			
Weekly Schedule of the Course	<ol style="list-style-type: none"> Week: Structure of materials Week: Physicochemical, thermal and mechanical properties of materials Week: Material test methods Week: Classification of materials. Week: Iron based materials Week: Steel materials Week: Stainless steels Week: Demonstration tests Week: Non-ferrous metals Week: Plastic materials. Week: Refractor materials. Week: Cement Week: Lime, plaster. Week: Composite materials. 			
Educative Activities (Credit will be determined based on the time given for these activities. Should be filled carefully.)	Theoretical Study Hours of Course Per Week Searching in Internet and Library Mid-Term and Studying for Mid-Term Final and Studying for Final Other			
Assessment Criteria		Quantity	Total Contribution (%)	

	Midterm	2	60						
	Homework								
	Assignment								
	Projects								
	Practice								
	Quiz								
	Contribution of In-term Studies to Overall Grade		60						
	Contribution of Final Examination to Overall Grade		40						
	Attendance								
Workload of the Course	Activity		Total Week Count	Weekly Duration (in hour)	Total Workload in Semester				
	Theoretical Study Hours of Course Per Week		14	3	42				
	Practicing Hours of Course Per Week		0	0	0				
	Reading		0	0	0				
	Searching in Internet and Library		5	2	10				
	Designing and Applying Materials		0	0	0				
	Preparing Reports		0	0	0				
	Preparing Presentation		0	0	0				
	Presentation		0	0	0				
	Mid-Term and Studying for Mid-Term		2	12	24				
	Final and Studying for Final		1	10	10				
	Other		14	1	14				
	Total work load				100				
	Total work load/25				4.0				
	ECTS of the course				4				
Course's Contribution To Program	No	Program Outcomes			1	2	3	4	5
	1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.						X	
	2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.				X			
	3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.				X			
	4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.					X		
	5	Ability to design and conduct					X		

		experiments, gather data, analyze and interpret results for investigating engineering problems.					
	6	Ability to work efficiently in intra-disciplinary teams.		X			
	7	Ability to work efficiently in multi-disciplinary teams;		X			
	8	Ability to work individually.			X		
	9	Ability to communicate effectively in Turkish/English, both orally and in writing; Ability to write effective reports and comprehend written reports, make effective presentations,		X			
	10	prepare design and production reports, give and receive clear and intelligible instructions.		X			
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.		X			
	12	Awareness of professional and ethical responsibility.		X			
	13	Information about business life practices such as project management, risk management, and change management.		X			
	14	Information about awareness of entrepreneurship, innovation, and sustainable development.		X			
	15	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.		X			
	16	Knowledge about awareness of the legal consequences of engineering solutions.		X			
	17	Knowledge on standards used in engineering practice.			X		
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