

1. Course Description

COURSE DESCRIPTION FORM	
Course Code and Title	KM480 BORON TECHNOLOGY
Course Semester	7
Catalog Description (Content) of the Course	Boron and its compounds, sprouts, reserves. Ore enrichment. Manufacture of refined boron products. Advanced boron end products. Boron usage areas.
Main Textbook	Borates, Handbook of Deposits, Processing, Properties and Use, D.E. Garrett, Academic Press, 1998. •
Supporting Textbooks	İnorganik Teknolojiler-1, H. Civelekoğlu, R. Tolun ve N. Bulutçu, İTÜ Yayınları, 1987. • The Economy of Boron, Roskill Information Services Ltd., 10. Baskı, 2002. • Metin Gürü, Çetin Çakanyıldırım “Boron Hydrides, High Potential Hydrogen Storage Materials”, Chap.4 : Hydrogen cycle with sodium borohydride, ISBN: 978-1-61668--362-7, 2010.
Course Credit (ECTS)	4
Prerequisites of the Course	No
Type of the Course	Elective
Instruction Language of the Course	Turkish
Object and Target of the Course	To teach production of boron minerals, boron concentrates, refined boron products and advanced boron products and usage areas of boron products.
Learning Outcomes of the Course	Recognition of boron products and understanding, development of boron technology.
Mode of Delivery	Face to face education
Weekly Schedule of the Course	1. week Physical and chemical properties of boron. 2. week Boron sprouts and boron reserves in the world and in Turkey. 3. week Boron compounds in the world and in Turkey. 4. week Production of refined boron products 5. week Sodium perborate, anhydrous borax, boron oxide. 6. week Sodium perborate, anhydrous borax, boron oxide. 7. week Boron carbide, boron nitride 8. week Metal boron hydrides 9. week Boron usage areas, cement, ceramic industry, glass industry, 10. week Boron usage areas, detergent industry, agriculture, metallurgy industry. 11. week Boron usage areas, paper sector, flame retardants, nuclear applications

	Boron usage areas, ceramic industry, glass industry, detergent industry, agriculture, metallurgy industry. paper sector, flame retardants, health Boron usage areas, energy and nuclear applications Boron usage areas, energy and nuclear applications .				
Educative Activities <i>(Credit will be determined based on the time given for these activities. Should be filled carefully.)</i>	Theoretical Study Hours of Course Per Week Reading Searching in Internet and Library Preparing Reports Preparing Presentation Presentation Mid-Term and Studying for Mid-Term Final and Studying for Final				
Assessment Criteria		Quantity	Total Contribution (%)		
	Midterm	2	40		
	Homework	-	-		
	Assignment	-	-		
	Projects	1	20		
	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			
		Reading	8	2	16
		Searching in Internet and Library	8	2	16
		Designing and Applying Materials			
		Preparing Reports	3	3	9
		Preparing Presentation	1	3	3
		Presentation	1	1	1
		Preparing Homework			
		Mid-Term and Studying for Mid-Term	2	4	8
		Final and Studying for Final	1	5	5
		Other			
		Total work load			100
		Total work load/25			4.0

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