

## 1. Course Description

<b>COURSE DESCRIPTION FORM</b>	
<b>Course Code and Title</b>	KM376 Coal
<b>Course Semester</b>	6
<b>Catalog Description (Content) of the Course</b>	Coal formation and classification. Physical and chemical properties of coal. Coal preparation methods. Washing and drying of coal. High temperature processes. Coal combustion processes and their design.
<b>Main Textbook</b>	Kural, O. "Kömür Özellikleri, Teknolojisi ve Çevre İlişkileri", 1. Baskı, İstanbul, 1998.
<b>Supporting Textbooks</b>	<ul style="list-style-type: none"> <li>• Kunii, D. and Levenspiel, O. "Fluidization Engineering", 2<sup>nd</sup> Ed., Butterworth-Heinemann, USA, 1991.</li> <li>• Snape, C. "Composition, Geochemistry and Conversion of Oil Shale", NATO ASI Series, Kluwer Academic Publishers, The Netherlands, 1995.</li> <li>• Heinsohn, R.J. and Kabel, R.L. "Sources and Control of Air Pollution" 1<sup>st</sup> Ed., Prentice-Hall, USA, 1999.</li> </ul>
<b>Course Credit (ECTS)</b>	3
<b>Prerequisites of the Course (Compulsory attendance should be indicated here.)</b>	There is no prerequisite or co-requisite for this course.
<b>Type of the Course</b>	Elective
<b>Instruction Language of the Course</b>	Turkish
<b>Object and Target of the Course</b>	To give information about coal which is an important energy source for our country including coal preparation, enrichment and production of higher calorific value products from coal starting from the formation of coal. It is aimed that the learners have knowledge about the subjects described.
<b>Learning Outcomes of the Course</b>	Developing new technologic processes which low quality coal is used and designing of coal combustion processes
<b>Mode of Delivery</b>	The mode of delivery of this course is face to face
<b>Weekly Schedule of the Course</b>	1. Week : Introduction to coal 2. Week : Coal formation and classification 3. Week: Physical and chemical properties of coal 4. Week: Physical and chemical properties of coal 5. Week : Coal preparation methods, washing of coal, drying of coal 6. Week : Coal preparation methods, washing of coal, drying of coal 7. Week : Midterm exam I. 8. Week : Coal preparation methods, washing of coal, drying of coal 9. Week : Coking and pyrolysing of coal 10. Week :Coking and pyrolysing of coal 11. Week :Gasification of coal 12. Week :Gasification of coal 13. Week Coal combustion processes 14. Week :Coal combustion processes
<b>Educative Activities</b> (Credit will be determined based on the time given for these activities. Should be filled carefully.)	Theoretical Study Hours of Course Per Week Reading Searching in Internet and Library Preparing Reports Mid-Term and Studying for Mid-Term Final and Studying for Final

<b>Assessment Criteria</b>		<b>Quantity</b>	<b>Total Contribution (%)</b>						
	Midterm	2	55						
	Homework	2	5						
	Assignment	0	0						
	Projects	0	0						
	Practice	0	0						
	Quiz	0	0						
	Contribution of In-term Studies to Overall Grade		60						
	Contribution of Final Examination to Overall Grade		40						
Attendance									
<b>Workload of the Course</b>	<b>Activity</b>	<b>Total Week Count</b>	<b>Weekly Duration (in hour)</b>	<b>Total Workload in Semester</b>					
	Theoretical Study Hours of Course Per Week	14	3	42					
	Practicing Hours of Course Per Week			0					
	Reading	13	1	13					
	Searching in Internet and Library	10	1	10					
	Designing and Applying Materials			0					
	Preparing Reports			0					
	Preparing Presentation			0					
	Presentation			0					
	Mid-Term and Studying for Mid-Term	2	7	14					
	Final and Studying for Final	1	6	6					
	Other			0					
	Total work load			85					
	Total work load/25			3.4					
ECTS of the course			3						
<b>Course's Contribution To Program</b>	Number	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.							
	2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.							
	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. (Realistic constraints and conditions may include factors such as					X		

	economic and environmental issues, sustainability, manufacturability, ethics, health, safety issues, and social and political issues, according to the nature of the design.)							
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 experiments, gather data, analyze and interpret results for investigating engineering problems.							
6	Ability to work efficiently in intra-disciplinary teams.							
7	Ability to work efficiently in multi-disciplinary teams							
8	Ability to work individually.					X		
9	Ability to communicate effectively in Turkish, 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.							
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.							
13	Information about business life practices such as project management, risk management, and change management.							
14	Information about awareness of entrepreneurship, innovation, and sustainable development.							
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.							
17	Knowledge on standards used in engineering practice.		X					
<b>Name of Lecturer(s) and Contact Information</b>		1. Prof.Dr. Nail Yaşyerli, yasyerli@gazi.edu.tr 2. Dr. H.Mehmet Taşdemir, mtasdemir@gazi.edu.tr						