

## 1. Course Description

<b>COURSE DESCRIPTION FORM</b>	
<b>Course Code and Title</b>	KM352 Geothermal Energy And Application
<b>Course Semester</b>	6
<b>Catalog Description (Content) of the Course</b>	Characteristics of geothermal resources, geothermal energy utilization ways to teach geothermal energy processes
<b>Main Textbook</b>	Dickson, M.F., Fanelli, M., Geothermal Energy, John Wiley&Sons, 1995
<b>Supporting Textbooks</b>	
<b>Course Credit (ECTS)</b>	3
<b>Prerequisites of the Course (Compulsory attendance should be indicated here.)</b>	-
<b>Type of the Course</b>	Elective
<b>Instruction Language of the Course</b>	Turkish
<b>Object and Target of the Course</b>	Characteristics of geothermal resources, geothermal energy utilization ways to teach geothermal energy processes
<b>Learning Outcomes of the Course</b>	1.Recognition of the need for lifelong learning 2.Ability to access information, to follow developments in science and technology, and to continue to educate him/herself
<b>Mode of Delivery</b>	Face to face education
<b>Weekly Schedule of the Course</b>	1. Week Introduction, history, reserves, Physical and chemical properties of geothermal resources. 2. Week Introduction, history, reserves, Physical and chemical properties of geothermal resources. 3. Week Research methods of geothermal sources, applications in Turkey and in the World 4. Week Research methods of geothermal sources, applications in Turkey and in the World 5. Week Research methods of geothermal sources, applications in Turkey and in the World 6. Week Research methods of geothermal sources, applications in Turkey and in the World 7. Week Usage and benefit methods of geothermal energy, farming, heating, tourism, cooling and drying etc. 8. Week Usage and benefit methods of geothermal energy, farming, heating, tourism, cooling and drying etc. 9. Week Usage and benefit methods of geothermal energy, farming, heating, tourism, cooling and drying etc. 10. Week Electricity production methods and applications 11. Week Electricity production methods and applications 12. Week Electricity production methods and applications 13. Week Electricity production methods and applications 14. Week Electricity production methods and applications
<b>Educative Activities</b> <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 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	60				
	Homework						
	Assignment						
	Projects						
	Practice						
	Quiz						
	Contribution of In-term Studies to Overall Grade		60				
	Contribution of Final Examination to Overall Grade	1	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						
	Reading	8	3	24			
	Searching in Internet and Library						
	Designing and Applying Materials						
	Preparing Reports						
	Preparing Presentation						
	Presentation						
	Mid-Term and Studying for Mid-Term	2	3	6			
	Final and Studying for Final	1	4	4			
	Other						
	Total work load			76			
	Total work load/25			3,04			
ECTS of the course			3				
	<b>Number</b>	<b>Program Outcomes</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
	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			X		

		problems.						
	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. (Realistic constraints and conditions may include factors such as 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.						
	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.						
	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.		X				
	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.						
	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>		Prof. Dr. Metin GÜRÜ- Email: mguru@gazi.edu.tr							