

1. Course Description

COURSE DESCRIPTION FORM			
Course Code and Title	KM339 WATER TECHNOLOGY		
Course Semester	6		
Catalog Description (Content) of the Course	Water properties. Physical and chemical processes. Preparation of industrial waters. Disinfection. Preparation of boiler feed and cooling water.		
Main Textbook	•Yalçın, H. ve Gürü, M., "Su teknolojisi", Palme Yayınları, 2010, Ankara.		
Supporting Textbooks	Morelli, C., "Basic Principles of Water Treatment", Colarado, USA, 1996.		
Course Credit (ECTS)	3		
Prerequisites of the Course (Compulsory attendance should be indicated here.)	-		
Type of the Course	Elective		
Instruction Language of the Course	English		
Object and Target of the Course	To gain skill about the chemistry of water, treatment methods, water preparation in industry and disenfection		
Learning Outcomes of the Course	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		
Mode of Delivery	Face to face education		
Weekly Schedule of the Course	1. Week Introduction, Natural water resources 2. Week Physical treatment of water: Mechanical pretreatment, sedimentation 3. Week Physical treatment of water: Coagulation , Flotation, filtration 4. Week Chemical properties of water: Purification by chemical deposition 5. Week Chemical properties of water: Purification by ion substitution method 6. Week Demineralisation 7. Week Demineralisation 8. Week Waters used in industry 9. Week Disenfection 10. Week Boiler feeding waters 11. Week Cooling waters 12. Week Drinking and using waters 13. Week Drinking and using waters 14. Week Agricultural waters , Swimming pool waters		
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 Mid-Term and Studying for Mid-Term Final and Studying for Final		
Assessment Criteria		Quantity	Total Contribution (%)
	Midterm	2	60
	Homework		
	Assignment		
	Projects		
	Practice		
	Quiz		
	Contribution of In-		60

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	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		2	4			8		
	Other								
	Total work load						80		
	Total work load/25						3,2		
	ECTS of the course						3		

		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.			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. (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	X					

			orally and in writing; ability to write effective reports and comprehend written reports, make effective presentations						
	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			
Name of Lecturer(s) and Contact Information	Prof. Dr. Metin GÜRÜ- Email: mguru@gazi.edu.tr						