



MARMARA UNIVERSITY - Faculty of Engineering

SYLLABUS

Environmental Engineering

2018-2019 Fall Semester

Course Code	Course Name	Course Type	Weekly Course Hours			Credits	ECTS	Weekly Time & Classroom Schedule
			T	A	L			
<b>ENVE 430/4030/41</b>	Hazardous and Special Waste Management	Compulsory	3	0	0	3	5	Wed 11:30-12:20 MB555 Thurs 15:30-17:20 MB554
<b>Prerequisite</b>		<b>Prerequisite to</b>						
<b>Course Lecturer</b>	Prof. Barış ÇALLI					<b>Office Hours Schedule</b>	Wednesday 10:30-11:20 / Thursday 14:30-15:20	
<b>E-mail</b>	<a href="mailto:baris.calli@marmara.edu.tr">baris.calli@marmara.edu.tr</a>					<b>Office / Room</b>	MB641	
<b>Phone</b>	216 348 02 92 / 1289					<b>Phone</b>		
<b>Teaching Assistant(s)</b>						<b>Office / Room No</b>		
<b>E-mail</b>								
<b>Course Objectives</b>	The purpose of this course is to provide an introduction to identification and classification of hazardous waste, engineering principles related to minimization, prevention and treatment of hazardous wastes using physicochemical processes, solidification & stabilization technology, biological and thermal methods. Land storage and disposal will be discussed. An overview will be given about the management of special wastes such as: household hazardous waste, batteries, waste electrical & electronic equipment, used oil, end-of-life vehicles, scrap tires, construction & demolition waste.							
<b>Learning outcomes</b>	1. Identify and classify hazardous waste (PO1, PO4) 2. Understand the concept of hazardous waste minimization, recycling and recovery (PO1, PO2, PO4, PO7) 3. Be able to select the most appropriate treatment and disposal method for hazardous waste (PO2, PO3, PO8) 4. Know how to manage special wastes (PO2, PO4, PO13)							
<b>Textbooks and/or References</b>	1.	LaGrega M, Buckingham P and Evans J. 'Hazardous Waste Management' 2nd Ed., McGraw-Hill, 2000.						
	2.	Tchobanoglous G and Kreith F 'Handbook of Solid Waste Management' 2nd Ed., McGraw-Hill, 2000						
	3.	Cheremisinoff N.P 'Handbook of Solid Waste Management and Waste Minimization Technologies' Butterworth-Heinemann, 2003						
	4.	Tchobanoglous G, Theisen H and Vigil SA 'Integrated Solid Waste Management, Engineering Principles and Management Issues' McGraw-Hill, 1993.						
<b>Teaching methods</b>	White board, Digital projector, Technical site visits							
<b>WEEK</b>	<b>Date</b>	<b>TOPICS</b>						<b>Reference No - Section</b>
Week 1	19.09.2018-20.09.2018	Hazardous Waste: Sources of Generation and Classification						Ref.1 - Chapter 1
Week 2	26.09.2018-27.09.2018	Waste Minimization and Pollution Prevention						Ref.1 - Chapter 7
Week 3	03.10.2018-04.10.2018	Physicochemical Treatment of Hazardous Wastes - <b>Quiz 1</b>						Ref.1 - Chapter 9
Week 4	10.10.2018-11.10.2018	Biological Treatment of Hazardous Wastes						Ref.1 - Chapter 10
Week 5	17.10.2018-18.10.2018	Stabilization and Solidification of Hazardous Wastes						Ref.1 - Chapter 11
Week 6	24.10.2018-25.10.2018	Thermal Treatment of Hazardous Waste - <b>Quiz 2</b>						Ref.1 - Chapter 12
Week 7	31.10.2018-01.11.2018	Landfilling of Hazardous Waste						Ref.1 - Chapter 13
Week 8	14.11.2018-15.11.2018	Household Hazardous Waste						Ref.2 - Chapter 10
Week 9	21.11.2018-22.11.2018	Batteries - <b>Quiz 3</b>						Ref.2 - Chapter 11A
Week 10	28.11.2018-29.11.2018	Waste Electrical & Electronic Equipment						Ref.2 - Chapter 11E
Week 11	05.12.2018-06.12.2018	Used Oil						Ref.2 - Chapter 11B
Week 12	12.12.2018-13.12.2018	Scrap Tires and End-of-life Vehicles						Ref.2 - Chapter 11C
Week 13	19.12.2018-20.12.2018	Construction and Demolition Waste - <b>Quiz 4</b>						Ref.2 - Chapter 11D
Week 14	26.12.2018-27.12.2018	Presentation of term projects						
<b>Evaluation Tools</b>	<b>Evaluation Tool</b>		<b>Quantity</b>	<b>Date</b>	<b>Weight in Total (%)</b>	<b>Weight in Semester Evaluation (%)</b>		
	Final Exam		1		40			
	Final Make-up Exam (if exists)							
	Semester Evaluation				60	100		
	Midterm(s)		1		30	50,0		
	Quiz(zes)		4		10	16,7		
	Project(s)		1		10	16,7		
	Homework(s)							
	Laboratory							
	Other (attendance)		42		10	16,7		
*** Lifelong Learning Programme (LLP) ***						Language of Instruction: English		