MARMARA UNIVERSITY - Faculty of Engineering
SYLLABUS
Environmental Engineering
2015-2016 Spring Semester

Course Code	Course Name	Course Type	Weekly Course Hours			Credits	ECTS	Weekly Time & Classroom Schedule
			T	A	L			
ENVE 7033	SPECIAL TOPICS IN ENVIRONMENTAL ENGINEERING	Compulsory	3	0	0	3	8	Göztepe
Prerequisite		Prerequisite to						

Course Lecturer	Dr. Emel TOPUZ	Office Hours Schedule	Wednesday 10:00-12:00
E-mail	topuze@itu.edu.tr		
Phone	0212 285 65 42	Office / Room	
Teaching Assistant(s)		Phone	
E-mail		Office / Room	

Course Objectives	"Emerging Pollutants" is selected as special topic in Environmental Engineering for 2015-2016 Spring Term. Main aim of the course is to teach the concept of Emerging Pollutants, which is one of the new topics for Environmental Engineering field. The course provides understandig on the analytical methods for the measurement of Emerging Pollutants, their occurrence and fate in treatment plants and in the environment, their ecotoxicological effects to aquatic and terrestrial organisms and approaches for their environmental risk assessment. A term project (with case studies) is included which aims to provide practice for students about the environmental management of Emerging Pollutants and student groups are required to present their term projects in the class. This course also provides practice in teamwork and in communication skills.
Learning outcomes	1 summarize the analytical methods for the measurement of micropollutants. 2 Have an introductory information on the treatment of emerging pollutants 3 Explain and draw the flow diagrams of the fate of emerging pollutants in treatment systems and in the environment. 4 Have an introductory information for the modelling of emerging pollutants in the environment. 5 Have an comprehensive information about the ecotoxicity and risk assessment of emerging pollutants.
Textbooks and/or References	1) Patnaik, P. (2010). Handbook of Environmental Analysis of Chemical Pollutants in Air, Water, Soil, and Solid Wastes, Second Edition, CRC Press, Print ISBN: 978-1-4200-6581-7, eBook ISBN: 978-1-4200-6582-4. 2) Lambropoulou, D.A. and Nollet, L.M.L. (2014). Transformation products of emerging contaminants in the environment : analysis, processes, occurrence, effects and risks, John Wiley and Sons Ltd, Chichester, West Sussex, United Kingdom. 3) Gruiz, K., Meggyes, T., Fenyvesi, E. (2015). Engineering Tools for Environmental Risk Management: 2. Environmental Toxicology, CRC Press, Print ISBN: 978-1-138-00155-8, eBook ISBN: 978-1-315-77877-8.
Teaching methods	White board, Digital projector

WEEK	Date	TOPICS	Reference No - Section
Week 1		Definition and Classification of Emerging Pollutants	-
Week 2		Measurement of Emerging Pollutants in the Environment	1
Week 3		Measurement of Emerging Pollutants in the Environment – transformation products	2
Week 4		Treatment Technologies for Emerging Pollutants	3
Week 5		Occurrence and Fate of Emerging Pollutants in Treatment Plants	3
Week 6		Occurrence and Fate of Emerging Pollutants in the Environment	3
Week 7		Midterm	-
Week 8		Environmental Modelling Approaches for Emerging Pollutants	3
Week 9		Ecotoxicological Effects of Emerging Pollutants – aquatic ecotoxicity	3
Week 10		Ecotoxicological Effects of Emerging Pollutants – terrestrial ecotoxicity	3
Week 11		Environmental Risk Assessment Approaches for Emerging Pollutants	3
Week 12		Case Study – Pharmacueticals	-
Week 13		Case Study – Endocrine Distruptors	-
Week 14		Case Study – Nanomaterials	-

Evaluation Tools

Evaluation Tool	Quantity	Date	Weight in Total (%)	Weight in Semester Evaluation (%)
Final Exam	1		40	
Final Make-up Exam (if exists)				
Semester Evaluation			60	100
Midterm(s)	1		25	41.7
Quiz(zes)	2		5	8.3
Project(s)	1		20	33.3
Homework(s)	5		10	16.7
Laboratory				
Other				