



MARMARA UNIVERSITY
Faculty of Engineering
Environmental Engineering Department

2012-2013 Fall Semester

A. COURSE DESCRIPTION

Course Code: ENVE 424 **Course Name:** Anaerobic Treatment

Course Description: Understanding the principles of anaerobic biochemistry and microbiology. Advantages and disadvantages of anaerobic treatment. Introduction of developments in anaerobic reactor technologies. Understanding the tools for process monitoring and control.

Instructor: Assist. Prof. A. Evren Tugtas – (email: evren.tugtas@marmara.edu.tr)

Office: MD 119

Office hours: Thursday 14:00 – 17:00

Reference Books:

- 1) Anaerobic Biotechnology for Industrial Wastewaters, by R. E. Speece, Archae Press, 1996.
- 2) Rittmann, B. E., McCarty P. Environmental Biotechnology: Principles and Applications. McGraw Hill. 2001.

B. COURSE CONTENT

1. Introduction to anaerobic treatment
2. The biochemistry of anaerobic treatment
3. The microbiology of anaerobic treatment
4. Stoichiometry
5. Influence of environmental factors
6. Toxic substances in anaerobic treatment
7. Process monitoring and control in anaerobic treatment
8. Low-rate anaerobic reactor technologies
9. High-rate anaerobic reactor technologies
10. Start-up and operation of anaerobic reactors
11. Anaerobic sludge digestion
12. Types of anaerobic sludge digesters
13. Mixing and heating anaerobic sludge digesters



C. GRADING POLICY

Midterm I: 30%

Midterm II: 30%

Final: 40 %

Regular attendance and class participation will be considered in assigning final grades.