



**MARMARA UNIVERSITY  
FACULTY OF ENGINEERING  
ENVIRONMENTAL ENGINEERING DEPARTMENT**

**ENVE 497/498 ENGINEERING PROJECT  
PROPOSAL FORM  
FALL 2016**

**Instructor:** Neslihan Semerci

**Project Title:** Bioleaching of Phosphorus from Incinerated Sewage Sludge Ash

**Proposal No. :** NeslihanS-1

**Number of Students:** 2-3

**Requirements (from students):**

Students should spend a minimum of 8 hours in the lab each week. Students will be required to conduct experiments and discuss the results regularly.

**Scope of the Project :**

Phosphorus inside the incinerated sewage sludge ash will be solubilized with the help of bioleaching bacteria. Bioleaching affecting parameters will be optimized to obtain maximum bioleaching efficiency.

**Hardware/Software/Lab/Equipment Requirements :**

pH meter, Shaking Incubator, Inductively Coupled Plasma–Optical Emission Spectrometer (ICP–OES), Bioleaching Reactor, Air Pump, Air Diffuser, Stirrer

**Development Plan :**

- Literature Review
- Incineration of Sewage Sludge (to obtain ash)
- Characterization of Ash
- Bioleaching