



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

**ENVE 4197/4198 ENGINEERING PROJECT
PROPOSAL FORM
2020-2021**

Instructor : A. Evren Tuğtaş

Project Title : Fate of potentially toxic heavy metals in anaerobic digesters

Proposal No. : AEvrenTugtas-1

Number of Students : Max 3 students

Requirements (from students) : Students should be able to understand basic modeling concepts and should be interested in data analysis.

Scope of the Project :

Anaerobic digesters are generally used to produce valuable methane gas. In this project fate of potentially toxic heavy metals in anaerobic digesters at different operational parameters will be investigated. Previously obtained experimental data will be used to validate the model.

Hardware/Software/Lab/Equipment Requirements :

Computer

Development Plan :

Operational parameters such as pH, volatile fatty acid concentration, and presence of organics may affect metal speciation in anaerobic digesters. Students are required to use a modeling tool to determine the fate of potentially hazardous heavy metals under different operational parameters of anaerobic digesters

- Modelling tool will be studied by the students.
- Previously obtained experimental data will be assessed and modeling parameters will be selected.
- The system will be modeled under different operational parameters to determine the fate of metals.
- Parameters and heavy metal speciation will be correlated.