**MARMARA UNIVERSITY**

**FACULTY OF ENGINEERING**

**ENVIRONMENTAL ENGINEERING DEPARTMENT**

**ENVE 4197/4198 ENGINEERING PROJECT**

**PROPOSAL FORM**

**FALL 2021-2022**

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| **Instructor : Esra Erken**  **Project Title:** Integrationof nZVI technology to the wastewater treatment plants for removal and recovery of phosphate  **Proposal No: Esra Erdim\_1**  **Number of Students : 2-3**  **Requirements (from students) :**  Students with strong interests in learning and conducting experiments in the lab, self-motivated and willing to work long hours as needed by the experiments.  Students will be expected to meet with the advisor on regular basis to discuss the progress of the experiments and results. |
| **Scope of the Project :**  (1) Synthesize and characteriza zero-valent iron nanoparticles (both the conventional and green methods)  (2) Investigate the influence of different operational parameters on the kinetics of phosphate recovery by nZVI particles |
| **Hardware/Software/Lab/Equipment Requirements :**  Spectrophotometer, Nanoparticle size and zeta potential analyzer, magnetic stirrer, orbital shaker, pH meter, glove box, chemical hood |
| **Development Plan :**   * Literature review * Synthesis of nZVI particles * Removal experiments with lab synthesized zero valent iron nano particles   A written report is required. The report should be prepared according to <http://dosya.marmara.edu.tr/fbe/tez_formlari/FBE_Tez_Yaz_m_K_lavuzu.pdf>.  Also, a poster will be presented at the end of the semester and the **Environmental Engineering Department staff** will grade your work by evaluating your poster. |