**MARMARA UNIVERSITY**

**FACULTY OF ENGINEERING**

**ENVIRONMENTAL ENGINEERING DEPARTMENT**

**ENVE 4197/4198 ENGINEERING PROJECT**

**PROPOSAL FORM**

**FALL 2022-2023**

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| **Instructor : Esra Erken**  **Project Title:** Organic matter degradation using engineered iron nanoparticles  **Proposal No: Esra Erken\_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 characterize zero-valent iron nanoparticles (both the conventional and green methods)  (2) Investigate the influence of different operational parameters on degradation of organic matter by iron nanopartices |
| **Hardware/Software/Lab/Equipment Requirements :**  UV/Vis spectrophotometer, Nanoparticle size and zeta potential analyzer, magnetic stirrer, orbital shaker, pH meter, glove box, chemical hood, thermoreactor |
| **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. |