**MARMARA UNIVERSITY**

**FACULTY OF ENGINEERING**

**ENVIRONMENTAL ENGINEERING DEPARTMENT**

**ENVE 4197/4198 ENGINEERING PROJECT**

**PROPOSAL FORM**

**FALL 2021-2022**

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| **Instructor :** Rosa M. Flores  **Project Title :** Chemical composition of fine particles in Istanbul  **Proposal No. :** *RMFlores-1*  **Number of Students :**4  **Requirements (from students) :** Students should have basic lab knowledge and should be available to work in the lab at least 4 hours per week. Students should also have availability of 4 hours per week to work on their thesis investigation and writing. |
| **Scope of the Project :**  Atmospheric particles have important effects on human health, climate, and the environment. Fine particles can penetrate into the circulatory system and cause respiratory problems. Particles can interact with solar radiation and affect the energy balance by reflecting or absorbing radiation. They can also interact with water vapor in the atmosphere and affect the water cycle. All these effects depend on their chemical composition and changes in concentration during the day. In this project students will extract particle samples and study their chemical composition with ion chromatography. Data analysis will include making graphs and comparing results with meteorological variables and with other results found in other cities around the world. |
| **Hardware/Software/Lab/Equipment Requirements :**  Particulate matter sampler  Mechanical shaker and sonication for extraction of samples  Filtering device and centrifuge  Ion chromatography  Software to create graphs and write your thesis |
| **Development Plan :**   1. Literature review, reading, and writing throughout the term 2. Preparation of filters, calibration of sampler, and collection of samples. 3. Analysis of standards in blanks with ion chromatography 4. Extraction, filtering, and analysis of samples 5. Analysis of the results and writing thesis |