**MARMARA UNIVERSITY**

**FACULTY OF ENGINEERING**

**ENVIRONMENTAL ENGINEERING DEPARTMENT**

**ENVE 4197/4198 ENGINEERING PROJECT**

**PROPOSAL FORM**

**FALL 2021-2022**

|  |
| --- |
| **Instructor :** Rosa M. Flores  **Project Title :** Measurements of elemental carbon (EC) and organic carbon (OC) in PM2.5  **Proposal No. :** *RMFlores-2*  **Number of Students:** 3  **Requirements (from students) :** Students will be required to do research on their own and give weekly reports with their progress. Students are expected to spend at least 5 hours per week working in the lab and their thesis. |
| **Scope of the Project :**  Organic carbon (OC) and elemental carbon (EC) are among the major components of fine particular matter (PM2.5). EC is a product of carbon fuel-based combustion processes and is exclusively associated with primary emissions. OC is either directly emitted into the atmosphere or formed by the condensation of compounds produced by the atmospheric photo-oxidation and polymerization of organic species. There are some methods to measure and analyze OC/EC such as thermal optical analysis. Organic carbon concentrations have been poorly studied in Istanbul, therefore, this work will be helpful to determine OC and EC concentrations and evaluate their variations in Istanbul. In this work, students are expected to determine the OC/EC concentrations and compare them with other urban regions in the world. |
| **Hardware/Software/Lab/Equipment Requirements :**  Sunset Laboratory Semi-Continuous Carbon Aerosol Analyzer  Computer with software to create graphs and write thesis |
| **Development Plan :**   1. Literature review with results in other urban areas 2. Analysis of samples 3. Downloading necessary data to complement OC/EC concentrations 4. Transferring data to proper software. Elaboration of graphs 5. Interpretation of results and data analysis 6. Writing dissertation |