**Graduation Project Proposal**

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| Project Title | Design, Analysis, and Installation of Solar Photovoltaic Systems |
| Classification | Application project |
| Supervisor | Mehmet Kanoğlu |
| Abstract | Installation of solar photovoltaic (PV) systems has been increasing steadily because solar electricity is environmentally friendly, and the cost has been decreasing. In this project, a group of students will work on a solar PV project from design stage to the installation of the system. An actual solar PV project at a residential or larger site will be considered. First, the electricity requirements of the user site will be evaluated. This is to be followed by the analysis and selection of the size of the PV system considering solar data of the location and the electricity needs of the user site. The analysis will be performed by a solar PV software accompanied by hand calculations. Thermal and economic characteristics of the system will be studied. The work also includes selection and analysis of supporting equipment (battery, inverter, etc.) to the PV panels. The group members are expected to get involved in actual installation of the system and its associated components. All work will be documented on a regular basis and a final report will be prepared. |

The graduation project is the subject of the MEC 401 Mechanical Engineering Design and MEC 402 Graduation Project courses offered in the 7th and 8th semesters, respectively.

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| Course Name | MEC 401 Mechanical Engineering Design |
| Prerequisites | MEC 311 Renewable Energy |
| Corequisites | - |
| Requirements | - |
| Workflow | * Literature survey * Selection of installation site (house, building, etc.) * Electricity requirements of the site * Analysis and selection of size of the PV system * Analysis and selection of supporting equipment such as battery, inverter, etc. * Project report * Final presentation |

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| Course Name | MEC 402 Graduation Project |
| Prerequisites | MEC 401 Mechanical Engineering Design |
| Corequisites | - |
| Requirements | - |
| Workflow | * Thermal characteristics of the system * Economic characteristics of the system * Installation of the system * Project report * Final presentation |

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| Term | Fall 2023 | | |
| Date |  | | |
| Project Title | Design, Analysis, and Installation of Solar Photovoltaic Systems | | |
| Supervisor Name and Signature | Mehmet Kanoğlu | | |
| Students | | | |
| First Name | Last Name | Student Number | Signature |
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