

OSTİM TECHNICAL UNIVERSITY

**ELECTRICAL-ELECTRONIC ENGINEERING DEPARTMENT**

**GRADUATION PROJECT PROPOSAL FORM**

**2023-2024 SEMESTER**

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| **Lecture Code: EEE400/411** | **Lecture Name: Graduation Project** |
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| **Project Title / Number of Students:** | Model Air Defence System using PLC Control (Potential for TEKNOFEST)/ 4 students |
| **WORKS AND PROCEDURES TO BE DONE IN THE PROJECT****(Put the item number on the left and write it in order)** |
| **Item**1. Literature survey on Air Defense Systems, servo motors, PLC coding, and image processing.
2. Develop an image processing algorithm to detect and track a moving target from a camera video in real time.
3. Develop a pan-tilt servo system to which a camera module will be attached.
4. Implement a PLC program to control the pan-tilt servo system to point to a desired angle.
5. Implement communications between the host computer and PLC to control the platform.
6. Test the implemented system with a real target and evaluate tracking and precision of servo system successes.
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| PROJECT AIMS |
| **Item**1. The project's primary objective is to develop a Model Air Defense system using PLC to enhance our understanding of air defense systems and their potential applications.
2. Students will work on developing an image processing/computer vision algorithm and control a pan-tilt servo platform using a PLC.
3. The system will be able to track and detect target/targets in real-time and make the servo systems direct accordingly.
4. The students will develop all the required software (both functional and embedded).
5. The students will implement and test the overall system.
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| **THE STUDENT TO WORK ON THE PROJECT** |
| Number | Name Surname | Signature |
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| **SUPERVISOR** |
| TitleAssoc. Prof. Dr.Res.Asst. | Name SurnameAhmet Güngör PAKFİLİZ(Co-supervisor) Miraç Lütfullah GÜLGÖNÜL | Signature |