

OSTİM TECHNICAL UNIVERSITY

**ELECTRICAL-ELECTRONIC ENGINEERING DEPARTMENT**

**GRADUATION PROJECT PROPOSAL FORM**

**2024-2025 SEMESTER**

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| **Lecture Code: EEE400/411** | **Lecture Name: Graduation Project** |
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| **Project Title / Number of Students:** | Battery management system design and application for electric vehicles /2 students |
| **WORKS AND PROCEDURES TO BE DONE IN THE PROJECT****(Put the item number on the left and write it in order)** |
| **Item**1. Research existing BMS technologies and design approaches.
2. Identify the battery specifications and project goals.
3. Design the BMS structure, selecting sensors and communication protocols.
4. Choose hardware components like microcontrollers and power management ICs.
5. Simulate the BMS using software tools like MATLAB/Simulink.
6. Create algorithms for SoC estimation, cell balancing, and safety management.
7. Design and prototype the BMS circuit board.
8. Test the BMS under various conditions to ensure it meets performance and safety standards.
9. Integrate the BMS with the vehicle's battery and control systems.
10. Document the design process and results for final evaluation.
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| PROJECT AIMS |
| **Item**1. Ensure the safe operation of the battery by preventing overcharging, overheating, and short circuits.
2. Extend the battery lifespan through effective charge and discharge management, and cell balancing.
3. Design a robust BMS that performs reliably under various operational and environmental conditions.
4. The students will develop all the required software (both functional and embedded) and hardware.
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 |
| 1.2.3. |  |  |

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| **SUPERVISOR** |
| Title | Name SurnameArda KILIÇ | Signature |