# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

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|---|---|---|---|---|---|---|---|---|---|
| Course Title | Power Electronic I | | | | | | | | |
| Course Code | ELE213 | | Couse Level | Short Cycle (Associate's Degree) | | | | | |
| ECTS Credit | 2 | Workload | 50 *(Hours)* | Theory | 2 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | In this course, it is aimed to have the students gain the abilities and knowledge about semiconductor switch elements, redresor and chopper circuit applications. | | | | | | | | |
| Course Content | Usage of monophase and triphase redresor circuits, thyristor, triac and invertors | | | | | | | | |
| Work Placement | N/A | | | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Experiment, Demonstration, Problem Solving | | | | | | | | |
| Name of Lecturer(s) | Ins. İsmail MERSİNKAYA | | | | | | | | |

| **Assessment Methods and Criteria** | | |
|---|---|---|
| Method | Quantity | Percentage (%) |
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 70 |

| **Recommended or Required Reading** | |
|---|---|
| 1 | Power electronics(Prof.Dr.Hacı Bodur) |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | Thyristors |
| 2 | Theoretical | Thyristor Triggering Circuits |
| 3 | Theoretical | Triac and Diac and Mosfets |
| 4 | Theoretical | Monophase Redresor Circuits Without Control |
| 5 | Theoretical | Monophase Redresor Circuits Without Control |
| 6 | Theoretical | Triphase Redresor Circuits Without Control |
| 7 | Theoretical | Triphase Redresor Circuits With Control |
| 8 | Theoretical | Invertors |
| 9 | Theoretical | Invertors |
| 10 | Theoretical | Invertors |
| 11 | Theoretical | Invertors |
| 12 | Theoretical | Invertors |
| 13 | Theoretical | Invertors |
| 14 | Theoretical | Invertors |

| **Workload Calculation** | | | | |
|---|---|---|---|---|
| Activity | Quantity | Preparation | Duration | Total Workload |
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Lecture - Practice | 3 | 1 | 1 | 6 |
| Midterm Examination | 1 | 7 | 1 | 8 |
| Final Examination | 1 | 7 | 1 | 8 |
| | | | Total Workload (Hours) | 50 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 2 |
| **25 hour workload is accepted as 1 ECTS* | | | | |

| **Learning Outcomes** | |
|---|---|
| 1 | Determining semiconductor switch elements |
| 2 | Installing redresor circuits |
| 3 | Connecting the invertors to the circuit |
| 4 | Establishes transistor circuit |

| | |
|---|---|
| 5 | Calculates the semiconductor circuit elements. |

| **Programme Outcomes** *(Mechatronics)* | |
|---|---|
| 1 | TECHNICAL FOREIGN LANGUAGE |
| 2 | BASICS OF MECHATRONICS |
| 3 | TECHNICAL DRAWING |
| 4 | DOING BASIC MECHANIC PROSESES |
| 5 | CHOOSE THE MATERIALS |
| 6 | DOING MECHANICAL SYSTEM DESIGN |
| 7 | SET UP A HYDRAULİC OR PNEUMATICSYSTEMS |
| 8 | DOING COMPUTER AIDED MECHANICAL DESİGN |
| 9 | USINGFLEXIBLE PRODUCING SYSTEMS |
| 10 | USINGCOMPUTER AIDEDMACHINE TOOLS |
| 11 | DOING ELECTRICAL AND ELECTRONICAL |
| 12 | SET UP ELECTRICAL AND ELECTRONICAL CIRCUITS |
| 13 | SET UP LOGICAL CIRCIUTS |
| 14 | DOING COMPUTER AIDED ELECTRONICAL CIRCUITSDESİGN |
| 15 | SET UP ELECTRICAL MOTORS |
| 16 | SET UP MICROCONTROLLER CIRCIUTS |
| 17 | SET UP CONTROL SYSTEMS |
| 18 | COMMUNICATE CONTROL SYSTEMS |
| 19 | DOING INDUSTRIAL ROBOTIC PROGRAMMINGAND MAINTENANCE |
| 20 | WRITING COMPUTER PROGRAMME |
| 21 | Ability to use the methods and techniques of career planning and discussing the effects of character traits on career preferences. |
| 22 | Ability to plan a career in their own profession. |

**Contribution of Learning Outcomes to Programme Outcomes** *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

| | L1 | L2 | L3 | L4 | L5 |
|---|---|---|---|---|---|
| P12 | 5 | 5 | 5 | 5 | 5 |