



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|--|-------------|----------------------------|---|--------------------------------|---|------------|---|
| Course Title | | Heating Tecnichs | | | | | | | |
| Course Code | | ZTM523 | | Couse Level | | Second Cycle (Master's Degree) | | | |
| ECTS Credit | 8 | Workload | 200 (Hours) | Theory | 3 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | The aim of the course, power supplies and heat transfer in the case of agricultural mechanization technology applications provide information about basic heat. | | | | | | | |
| Course Content | | Definition of heat, heat and temperature, the mechanical equivalent of heat, work-temperature relationship, specific heat, sensible heat, heat sources, heat transfer, heat transfer, conduction theory and equations, heat convection, natural and forced convection, thermal radiation, and radiation laws, heat exchangers, examples of applications for mechanization. | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation) | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

Recommended or Required Reading

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| 1 | Isı Tekniği Yüksek Lisans Ders Notları |
| 2 | Isı Geçişli Transferi, Prof. Dr. Alpin Kemal Dağsöz, İTÜ Makine Fakültesi |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---|
| 1 | Theoretical | Definition of Heat, The relationships heat and temperature |
| 2 | Theoretical | The mechanical equivalent of heat, |
| 3 | Theoretical | Work-temperature relationship, specific heat, sensible heat |
| 4 | Theoretical | Heat sources, |
| 5 | Theoretical | Heat transfer, |
| 6 | Theoretical | Heat transfer, transmission theory and equations, |
| 7 | Theoretical | Heat transfer, transmission theory and equations, |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | Heat convection |
| 10 | Theoretical | Natural convection |
| 11 | Theoretical | Forced convection |
| 12 | Theoretical | Thermal radiation and radiation laws |
| 13 | Theoretical | Thermal radiation and radiation laws |
| 14 | Theoretical | Heat exchangers |
| 15 | Theoretical | Heat exchangers |
| 16 | Theoretical | Final exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---------------------------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 2 | 2 | 56 |
| Lecture - Practice | 14 | 2 | 2 | 56 |
| Assignment | 2 | 20 | 20 | 80 |
| Midterm Examination | 1 | 2 | 2 | 4 |
| Final Examination | 1 | 2 | 2 | 4 |
| Total Workload (Hours) | | | | 200 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 8 |

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

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|---|--|
| 1 | Ability of the overall heat information |
| 2 | To be informed about Heat sources |
| 3 | Understanding the issue of heat transfer |
| 4 | To be informed about heat exchangers |
| 5 | 5. Using the technique of heat in agriculture. |

Programme Outcomes (Agricultural Machinery Master)

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|----|--|
| 1 | Identification, formulation and solving the problems in the field of Agricultural Machinery |
| 2 | The ability to use modern engineering tools and techniques |
| 3 | The ability to use the information, which is obtained by following the scientific and technological developments, in the academic life and practice. |
| 4 | The ability to evaluate multi-faced relationship between them by understanding interaction among agricultural technology, soil, plants and animals |
| 5 | Professionalism and ethical responsibility |
| 6 | The ability to work in disciplinary and multi-disciplinary teams |
| 7 | The ability to communicate effectively |
| 8 | The ability to do research for accessing information and to use data base and other resources |
| 9 | The ability to do analyze and interpret the experimental results and the design of experiment |
| 10 | The ability to identify and interpret knowledge of current professional issues and events |
| 11 | The ability to get aware the universal and social effects of engineering solutions and applications |
| 12 | Accordance with the requirements of science and technology, ability to use scientific knowledge creative |

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

| | L1 | L2 | L3 | L4 | L5 |
|-----|----|----|----|----|----|
| P1 | 5 | 5 | 5 | 5 | 5 |
| P2 | 5 | | | | |
| P3 | 5 | | | | |
| P4 | 5 | | | | |
| P5 | 4 | | | | |
| P6 | 4 | | | | |
| P7 | 2 | | | | |
| P8 | 5 | | | | |
| P9 | 5 | | | | |
| P10 | 4 | | | | |
| P11 | 5 | | | | |
| P12 | 5 | | | | |

