



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|--|----------------------|--|---|----------------------------------|---|------------|---|
| Course Title | | Internal Combustion Engines | | | | | | | |
| Course Code | | TAM110 | | Couse Level | | Short Cycle (Associate's Degree) | | | |
| ECTS Credit | 4 | Workload | 100 (<i>Hours</i>) | Theory | 2 | Practice | 2 | Laboratory | 0 |
| Objectives of the Course | | The course on engines of different engine types,Transferres operating principles and terminology. | | | | | | | |
| Course Content | | Definition of thermal engines, engine types and characteristics, internal combustion engines, internal combustion engines, rotary piston engines, motors, engines, parts and features of the thermodynamic principles. | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation), Experiment, Demonstration, Case Study, Individual Study, Problem Solving | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 70 |

Recommended or Required Reading

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| 1 | Saral, A. ve A. Onurbaş Avcıoğlu, 2006. Termik Motorlar. Ankara Üniversitesi Ziraat Fakültesi Publications Number: 1550, Course Book: 503, Ankara |
| 2 | Yavuzcan, G. ve A. Saral, 1993. Termik Motorlar Uygulama Örnekleri. Ankara Üniversitesi Ziraat Fakültesi Publications Number:1303, Auxiliary Course Book:378, Ankara |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---|
| 1 | Theoretical | Introduction to the class, definitions and general information about lesson |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Examining course contents |
| 2 | Theoretical | The historical development of thermal engines |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 3 | Theoretical | Classification and comparison of thermal engines |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 4 | Theoretical | Motor fuels and combustion, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 5 | Theoretical | Thermal engines, working principles and thermodynamic cycles, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 6 | Theoretical | Thermal engines, working principles and thermodynamic cycles, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 7 | Theoretical | Thermal engines, power and efficiency, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 8 | Intermediate Exam | Midterm Exam |
| 9 | Theoretical | The main structural components of motors, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 10 | Theoretical | Fuel equipment, electrical equipment and ignition hardware |
| | Practice | Introduction of thermal engines |



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| 10 | Preparation Work | Literature review about the subject |
| 11 | Theoretical | Lubrication equipment and cooling equipment, |
| | Practice | Introduction of thermal engines |
| | Preparation Work | Literature review about the subject |
| 12 | Theoretical | Maintenance and repair of internal combustion engines |
| | Practice | Maintenance and repair of tractors |
| | Preparation Work | Literature review about the subject |
| 13 | Theoretical | Maintenance and repair of internal combustion engines |
| | Practice | Maintenance and repair of tractors |
| | Preparation Work | Literature review about the subject |
| 14 | Theoretical | Maintenance and repair of internal combustion engines |
| | Practice | Maintenance and repair of tractors |
| | Preparation Work | Literature review about the subject |
| 15 | Theoretical | Practical Exam |
| | Practice | Explanation of the parts on the tractor in the form of questions and answers |
| | Preparation Work | Practice Exam preparation |
| 16 | Theoretical | Final Exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|--|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Lecture - Practice | 14 | 0 | 2 | 28 |
| Laboratory | 9 | 0 | 1 | 9 |
| Studio Work | 5 | 0 | 1 | 5 |
| Midterm Examination | 1 | 14 | 1 | 15 |
| Final Examination | 1 | 14 | 1 | 15 |
| Total Workload (Hours) | | | | 100 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 4 |

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

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| 1 | To be able to acquire the knowledge of the development and classification of thermal engines, |
| 2 | To be able to acquire the knowledge of the motor fuels and combustion |
| 3 | To be able to acquire the knowledge of thermal engines, working principles and thermodynamic cycles, |
| 4 | To be able to acquire the knowledge of the main structural components of motors, |
| 5 | To be able to detect the faults occurring in the engines of various systems |
| 6 | To be able to mend engine breakdowns |

Programme Outcomes (Agricultural Machinery)

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| 1 | To be able to comprehend social, cultural and societal responsibility and keep up with national and international up contemporary issues and developments. |
| 2 | To be able to be bounded to the Atatürk nationalism, adopted to the national, ethic, spiritual and cultural value of the Turkish Nation, opened to the universal and modern development, adopted the richness, deep seated and productive properties of the Turkish language, having language sympathy and awareness, having reading pleasure and habit and having sufficient foreign language for their vocational necessities, In the directions of the Atatürk Principles and Revolutions, |
| 3 | To be able to recognize the basic computer hardware and operating systems , knowledge of internet usage being able to prepare documents, electronic tables and presentation by using office programs. |
| 4 | To be able to be aware of ethic responsibility and vocational profession and to have consciousness of a lifelong learning concept |
| 5 | To be able to know current vocational issues and to have skill to define and interpret them. |
| 6 | To be able to be aware of the universal and social dimensional effects in engineering solutions, and to be able to have knowledge about entrepreneurship and newfangledness. |
| 7 | To recognize the materials which used for preparation of agricultural machinery and have skill for the choosing the appropriate material. |
| 8 | To be able to acquire the skill of using the necessary tools and equipments which are used in the production and maintenance of agricultural machinery. |



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| 9 | To be able to prepare the agricultural tools and machineries, to determine the breakdowns and to do periodic maintenance and repairs. |
| 10 | To be able to comprehend the picture of the agricultural tools and machinery and their fabrication, and have the skill to draw them via computer. |
| 11 | To be able to assemble and to combine machinery pieces by using demountable and nondetachable junction methods. |
| 12 | To be able to have the skill of resistance calculations of the agricultural tool and machinery on computer. |
| 13 | To be able to test and control the suitability of new machines and mechanic equipment to the definite standards and technical properties. |
| 14 | To be able to have general knowledge of agricultural production. |
| 15 | To be able to have knowledge of basic sciences. |

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

| | L1 | L2 | L3 | L4 | L5 | L6 |
|-----|----|----|----|----|----|----|
| P4 | 3 | 3 | 5 | 5 | | |
| P5 | 3 | | 4 | 5 | | |
| P6 | 3 | 3 | 5 | 5 | | |
| P7 | | 4 | 5 | 5 | 5 | 5 |
| P8 | | 5 | 5 | 5 | 5 | 5 |
| P9 | | 5 | 5 | 5 | 5 | 5 |
| P10 | | | 3 | 3 | 4 | 4 |
| P13 | | | 5 | 5 | 5 | 5 |

