

AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

| Course Title | Soil Tillage Mechanics | | | | | | |
|---|--|-------------|------------|------------------|--------------------------------|-------------------|-----|
| Course Code | de ZTM611 Couse Level Third Cycle (Doctorate Degree) | | | | | | |
| ECTS Credit 7 | Workload 179 (Hours) | Theory | 3 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course The aim of the course physicomechanical properties of the soil, cut resistance, strength, stress and boundary conditions, the effect of the mechanical properties of the soil moisture content, soil tillage mechanics, critical working depth, soil mechanical components of the machine relationship, force are energy balances between the tractor and tools, mechanical and hydraulic soil stuck to inform studer about the characteristics. | | | | | and age ce and udents | | |
| Course Content Physical properties of soil, soil deformation, and the mechanical properties of the soil mechanical processing equipment | | | | s of | | | |
| Work Placement | N/A | | | | | | |
| Planned Learning Activities and Teaching Methods | | Explanation | (Presentat | tion), Discussio | on, Case Stu | dy, Problem Solvi | ing |
| Name of Lecturer(s) | | | | | | | |

Assessment Methods and Criteria

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

Recommended or Required Reading

| 1 | Engineering Principles of Agricultural Machines, Ajit K. Srivastava, vd., 1996. |
|---|---|
| 2 | Toprak İşleme Aletlerinin Teori, Hesap ve Konstrüksiyonu,Doç.Dr.Mehmet Dilmaç,Türkiye Zirai Donatım Kurumu Mes.Yayınları, Yayın No:36,Zonguldak, 1984 |

| Week | Weekly Detailed Cours | se Contents |
|------|-----------------------|------------------------------------|
| 1 | Theoretical | Soil Physical Properties |
| 2 | Theoretical | Soil Physical Properties |
| 3 | Theoretical | Soil Deformation |
| 4 | Theoretical | Soil Deformation |
| 5 | Theoretical | Mechanical Properties of soil |
| 6 | Theoretical | Mechanical Properties of soil |
| 7 | Intermediate Exam | Midterm |
| 8 | Theoretical | Mechanics Soil Tillage Instruments |
| 9 | Theoretical | Mechanics Soil Tillage Instruments |
| 10 | Theoretical | Mechanics Soil Tillage Instruments |
| 11 | Theoretical | Mechanics Soil Tillage Instruments |
| 12 | Theoretical | Mechanics Soil Tillage Instruments |
| 13 | Theoretical | Mechanics Soil Tillage Instruments |
| 14 | Theoretical | Mechanics Soil Tillage Instruments |
| 15 | Theoretical | Mechanics Soil Tillage Instruments |
| 16 | Final Exam | Final exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 2 | 3 | 70 |
| Assignment | 14 | 0 | 3 | 42 |
| Term Project | 1 | 0 | 25 | 25 |
| Midterm Examination | 1 | 20 | 1 | 21 |



| Course | Infor | mation | Form |
|--------|-------|--------|-------|
| | mion | | i onn |

| Final Examination | 1 | | 20 | 1 | 21 | |
|---|--|----------------------------|----|---|-----|--|
| | | Total Workload (Hours) 179 | | | 179 | |
| | [Total Workload (Hours) / 25*] = ECTS 7 | | | | | |
| *25 hour workload is accepted as 1 ECTS | | | | | | |

| Learn | ing Outcomes | | | |
|-------|--|-----|--|--|
| 1 | To understand the properties of the soil physico_mechan | nic | | |
| 2 | To define the relationship between the machine - soil | | | |
| 3 | Recognition of the soil mechanical and hydraulic propertie | es | | |
| 4 | To design tillage tools and machines | | | |
| 5 | To design tillage tools and machines | | | |

Programme Outcomes (Agricultural Machinery Doctorate)

| 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 |
|-----|----|----|----|----|
| P1 | 5 | 5 | 5 | 5 |
| P2 | 5 | 5 | 5 | 5 |
| P3 | 5 | 5 | 4 | 5 |
| P4 | 5 | 5 | 5 | 5 |
| P5 | 3 | 4 | 3 | 3 |
| P6 | 3 | 4 | 3 | 4 |
| P7 | 2 | 2 | 2 | 2 |
| P8 | 2 | 2 | 3 | 4 |
| P10 | 3 | | 2 | 2 |
| P11 | 5 | 4 | 4 | 4 |
| P12 | 2 | | 2 | 5 |

