



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Power Transmission in Tractors and Traction Mechanics							
Course Code		ZTM541		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	175 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The most important power source in the agricultural sector is the tractor. There are many important equipments that distinguish the tractor from other motor vehicles. This second main objective is to highlight the special features of the tractor and to learn it in terms of operation, repair and maintenance. In order to be able to fully demonstrate the suitability of the tractor-to-work machine for operating the tractor, the tractor is learned in depth in terms of structural, vehicle mechanics and power distribution.							
Course Content		After studying the meaning and development of the tractor and classification of the tractors, the main structural elements of the tractors, the equipment of the tractors, the tractor mechanics, the tractor power and the tractor experiments are learned in depth. In practice, sample problems related to general issues of tractors, issues to be taken into consideration when buying tractors, use of tractors, powering systems of tractors, maintenance of tractors, significant failures in tractors and their theories are solved.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

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

Recommended or Required Reading

1	The instructor of the course grade
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Week	Weekly Detailed Course Contents	
1	Theoretical	The Meaning and Development of the Tractor
2	Theoretical	Main Elements of Tractors: Motors and Mechanical Concepts
3	Theoretical	Mechanical and Hydraulic Coupling Calculations
4	Theoretical	Transmission Gearboxes
5	Theoretical	Differential, Last Reduction, Walking Organs
6	Theoretical	Steering System, Braking System and Calculations
7	Intermediate Exam	Midterm Exam
8	Theoretical	Tractor equipment, suspension systems
9	Theoretical	Elements of the Hydraulic System
10	Theoretical	Tail Shaft and Pulley System
11	Theoretical	Tractor Mechanics
12	Theoretical	Tractor Power Distributions
13	Theoretical	Tractor Experiments
14	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	6	6	6	72
Midterm Examination	1	7	2	9
Final Examination	1	8	2	10
Total Workload (Hours)				175
[Total Workload (Hours) / 25*] = ECTS				7

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Knowing the meaning of the tractor, its development and its purpose
2	To know the parts forming the tractor and its meaning
3	To be able to perform force analysis in static and dynamic condition of tractor
4	Tractor Experiments
5	Tractor Power Distributions

Programme Outcomes (Agricultural Machinery Master)

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

	L2	L3
P2	4	
P3		4
P4	5	5
P5	4	5
P6	4	4
P7	4	4
P8	4	4
P9	4	4
P11	5	

