



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Design Principal of Agricultural Tractor and Trailer							
Course Code		ZTM535		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	172 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Transfer of agricultural tractors and cars, the basic design parameters							
Course Content		Agricultural tractors and construction features of the geometry of the tractor, the tractor and tractor work forming the basis of the design of the effective parameters. The parameters that make up the basis of the design of tractors and tractor work effectively. Tractor mechanics, mechanics of four-wheel tractors, tractors stability-stability.The main building features tractors. Tractor power analysis, tractor production, with the power of the tractor trailer specifications developed by the motion-related features. Car morphology evaluation, ergonomic features of agricultural tractors. Performance and reliability of the tractor, the tractor in terms of their design and evaluation test results. Classification of agricultural cars, agricultural truck mechanics. Static and dynamic forces acting on Agriculture cars, agricultural vehicles and proper construction elements forms of accounts.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, 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	Tarım Traktörlerinin Tasarım Esasları, Prof. Dr. S. Kadayıfçılar, 1991, Ankara.
2	Tarım Traktörleri, Prof. Dr. Galip Keçecioğlu, Yrd. Doç. Dr. Ercan Gülsoylu, Ege Üniversitesi Basımevi, 2003, İzmir. ISBN: 975-288-193-9.
3	Tarım Traktörleri, Prof. Dr. A. Sabancı, Ç.Ü. Ziraat Fak. Genel Yayın No: 46, Ders Kitapları Yayın No: 9, 1993, Adana.
4	Tarım Traktörleri, Prof. Dr. A. Saral A.Ü. Ziraat Fak. Yayınları: 948,

Week	Weekly Detailed Course Contents	
1	Theoretical	Agricultural tractors and construction features of the geometry of the tractor, the tractor and tractor work forming the basis of the design of the effective parameters of the engine power.
2	Theoretical	The parameters that make up the basis of the design of tractors and tractor work effectively; tractor weight and weight distribution, the distribution of weight-draft force-skating, weight-tractor price relationship.
3	Theoretical	The parameters that make up the basis of the design of tractors and tractor work effectively; tractor speed, gear box, making the property, tractors significant linear lengths.
4	Theoretical	Tractor mechanics, mechanics of four-wheel tractors, tractors stability-stability. The mechanics of the wheel (wheel of transport properties, characteristics of the pinion wheel, rolling resistance, drawbar pull-tractor values, relationships).
5	Theoretical	Tractors, the main structural features: steering system. Brakes and braking action. Tractor driveline torque (voucher scheme, PTO, belt pulley).
6	Theoretical	The main building features Tractors: Tractor implemented communication systems, equipment, vine-link layout, tractors, hydraulic lifting system.
7	Theoretical	Caterpillar tractors, caterpillar traction force measure-relationship, the caterpillar resistance and transport rollers.
8	Intermediate Exam	Midterm exam
9	Theoretical	Power analysis tractors, tractor production, with the power of the tractor trailer specifications developed by the motion-related features.
10	Theoretical	Car morphology evaluation, ergonomic features of agricultural tractors.
11	Theoretical	Performance and reliability of the tractor, the tractor in terms of their design and evaluation test results.
12	Theoretical	Classification of agricultural cars, agricultural truck mechanics (center of gravity, stability, tensile strength requirement, dümenlemesi).
13	Theoretical	Static and dynamic forces acting on Agriculture cars, agricultural vehicles and appropriate staff accounts, forms of construction (frame, drawbar, axles, wheels and tires).



14	Theoretical	Agriculture accounts and appropriate structural elements of cars shapes (conical wheel bearings, scissors, rotary steering axle constructions).
15	Theoretical	Agricultural vehicles construction elements and appropriate forms of accounts (brake layouts, body).
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	14	0	2	28
Term Project	1	0	20	20
Laboratory	2	0	15	30
Midterm Examination	1	10	2	12
Final Examination	1	10	2	12
Total Workload (Hours)				172
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To understand the structure and properties of agricultural tractors
2	To understand the design parameters of the tractor effectively
3	Power transmission systems and understand the properties of the elements
4	To understand the characteristics of agricultural production cars
5	To understand the mechanics of Agriculture's car
6	Designing understanding of the principles of Agriculture car components

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

	L1	L2	L3	L4	L5	L6
P1	4	5	5	4	5	5
P2	3	5	5	5	4	4
P3	5	3	4	4	4	4
P4	5	4	4	3	2	4
P5	3	3	3	3	3	3
P6	5	4	4	3	3	3
P8	4	4	4	4	4	5
P9	3	4	4	3	3	5
P10	4	4	4	3	4	
P11	3	4	4		4	
P12	3	5	4	4	2	4

