



AYDIN ADNAN MENDERES UNIVERSITY
KOÇARLI VOCATIONAL SCHOOL
MECHANICAL AND METAL TECHNOLOGY
AGRICULTURAL MACHINERY
COURSE INFORMATION FORM

Course Title	Machines in Plant Protection								
Course Code	TAM228			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	To give essential information on the technical property, design, operating, choice, adjustment, and maintenance of pesticide application machinery used to protect plants against diseases, pests and weeds								
Course Content	Pesticide application techniques, learning some definition about plant protection, affecting factors on amount of sprayed pesticide, importance of sprayer nozzles, to reduce the negative effect of pesticide drift, importance of sprayer calibration and application techniques, safety at pesticide application.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, 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	Yağcıoğlu, A., 2008. Bitki Koruma Makineleri. E.Ü.Z.F. Press Number. 508, İzmir.
2	Çilingir, İ. ve E. Dursun, 2002. Bitki Koruma Makineleri. A.Ü.Z.F. Press Number.1531, No.484, Ankara.
3	Kasap, E., B. Engürülü, Ö. Çiftçi, S. Kılınç, M. Göbbaşı, ve M. Akkurt, 1999. Bitki Koruma Makineleri. Republic of Turkey Ministry of Food, Agriculture and Livestock, Ankara.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction the course and general information about the teaching aids
	Practice	Introduction of plant production machines
	Preparation Work	Examining course contents
2	Theoretical	Importance of plant protection, introducing the pesticide transport and store
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
3	Theoretical	Basic topics in pest management, compares economical, and applied samples. Classification and formulation of pesticides, physical properties of spray liquid, production of droplet and coverage ratio
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
4	Theoretical	Affecting factors on drift. Drift protection techniques. Importance of droplet size in pest management, spray droplet size, calculation of number and volume median diameter
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
5	Theoretical	Classification of plant protection machinery. Field sprayer and all components (pump, regulator, hose, vane, boom, nozzle)
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
6	Theoretical	Orchard and vineyard sprayer and all components (pump, regulator, hose, vane, boom, nozzle)



6	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
7	Theoretical	Knapsack sprayers, Different types of nozzle and hydraulic nozzle
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
8	Intermediate Exam	Midterm exam
9	Theoretical	Calculations and problems solve related with calibration, test, and adjustment of sprayers in field works
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
10	Theoretical	Granule application, air assisted sprayers and duster, Thermal fogging machines, injection and fumigation techniques, aerial pesticide application and safety precautions in plant protection
	Practice	Introduction of plant production machines
	Preparation Work	Literature review about the subject
11	Theoretical	Maintenance and repair of plant production machines
	Practice	To maintenance and repair of plant production machines
	Preparation Work	Literature review about the subject
12	Theoretical	Maintenance and repair of plant production machines
	Practice	To maintenance and repair of plant production machines
	Preparation Work	Literature review about the subject
13	Theoretical	Maintenance and repair of plant production machines
	Practice	To maintenance and repair of plant production machines
	Preparation Work	Literature review about the subject
14	Theoretical	Maintenance and repair of plant production machines
	Practice	To maintenance and repair of plant production machines
	Preparation Work	Literature review about the subject
15	Theoretical	Practice exam
	Practice	Explanation of plant production machines in the form of questions and answers
	Preparation Work	Practice Exam preparation
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Midterm Examination	1	7	1	8
Final Examination	1	10	1	11
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to attain knowledge about necessity, timing and application techniques for plant protection
2	To be able to determine technical-constructional properties of plant protection machinery
3	To be able to gain knowledge and evaluate environmental sensitive application techniques and calibration of sprayers.



4	To be able to gain knowledge about integrated pest management (IPM)
5	To be able to do maintenance, test, and adjustment of machinery used in plant protection

Programme Outcomes (Agricultural Machinery)

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.
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 standarts 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
P1			3		
P4	4	5	4	4	4
P5			4	4	
P7		5			5
P8					5
P9					5

