

Discipline	<i>AGRICULTURAL MACHINERY</i> code: 25 summer semester		
Specialty	AGRONOMY		
ECTS credits: 5	Form of assessment: Continuous assesment		
Lecturer	Assoc. prof. Albena Ivanova, PhD Room: NUK 317a Phone: +359 52385725 E-mail: a.ivanova@tu-varna.bg		
Department	PLANT PRODUCTION		
Faculty	<i>FACULTY OF MECHANICAL ENGINEERING AND TECHNOLOGIES</i>		
Annotation: The course is designed to give students the necessary knowledge and skills in the field of theory and construction of agricultural machinery. The basic machines for soil cultivation, sowing, fertilizing, plant protection, harvesting from different crops, mechanization of the processes in livestock breeding and processing of the obtained products are studied.			
CONTENTS:			
Training Area		Hours lectures	Hours seminar exercises

Technological properties of the soil - humidity, hardness, plasticity, stickiness, friction with other materials, etc. Classification of agricultural machinery.	1	
Ploughs. Classification. Working parts - plow body, front plow, blade. Interaction of the plow body with the soil. Auxiliary working organs of the plow plow.	4	
Cultivators. Classification and basic technological requirements. Working organs - basic parameters and interaction with soil and weeds. Arrangement of the working bodies on the frame of the cultivator for the respective tillage.	2	
Toothed harrows. Classification and design features. Interaction with soil.	1	
Disc tillage implements. Classification and principle of operation.	1	
Tillage machines with active working bodies. Classification and technological principles of active rotary machines.	2	
Sowing machines. Technological properties of seed material. Types of sowing. Classification and agrotechnical requirements. Seeders, seed lines, boots and devices for burying the seeds and markers.	4	
Planting and transplanting machines. Classification, potato planters, etc. Technological schemes and work process.	1	
Fertilizer machines. Classification and technological schemes. Dosing devices and spreading devices.	2	
Machinery for plant protection. Methods and means of plant protection. Classification, technological schemes of the machines. Working bodies of sprinklers and dusters - principles of operation.	2	
Technologies for harvesting cereals. Grain harvesters. Working organs - cutting apparatus, tedder, threshing apparatus, straw shakers, grain cleaning devices.	4	
Rough forage harvesters. Classification of presses - sorters. Device and technological process.	1	
Ways and means of distributing grain mixtures. Device and technological process of grain cleaning and seed cleaning machines.	2	
Machines and attachments for harvesting corn, legumes, beets and potatoes. Classification and principles of operation.	1	
Machines for harvesting silage and grass crops - silage harvesters, hay mowers, hay harvesters.	2	
Plows - set up for work.		3
Cultivators. Arrangement of working bodies for merged and interline processing.		2
Cereal planters. Determining the sowing rate and adjusting the seeding device.		1

Seeders for precision seeding. Adjustment for operation of a pneumatic seeder.		2
Fertilizer sowing machines - plate and centrifugal.		2
Seedling machines. Setting up for work.		2
Machinery for plant protection. Adjusting sprinklers and dusters for operation.		2
Reaper. Working parts - cutting device, reel, picker.		3
Threshing machines. Adjusting the gap between the drum and the counter drum.		2
Straw shakers and grain cleaners in combines.		2
Straw balers - pickers - return devices, adjustment for work.		2
Grain cleaning and seed cleaning machines. Working bodies - basic adjustments and setting for work.		2
Corn, sunflower and soybean harvesters. Device and adjustments.		2
Combine harvester. Device and principle of operation.		2
Hay mowers and hay harvesters - device and technological process.		1
<b>TOTAL:60 h</b>	<b>30</b>	<b>30</b>