Course Unit Descriptor

Study Programme: Agricultural engineering and information systems

Course Unit Title: TRACTORS

Course Unit Code: 19.PTI014

Name of Lecturer(s): Prof. Lazar Savin, PhD

Type and Level of Studies: UNDERGRADUATE ACADEMIC STUDIES

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Winter

Language of instruction: Serbian

Mode of course unit delivery (face-to-face/distance learning): Face to face

Number of ECTS Allocated: 6

Prerequisites: Power machines

Course Aims:
The aim of the course is to acquaint students with the basic constructions of tractors, adjustment and economical use and the method of choice according to the purpose and conditions of application. To master the methods and equipment for laboratory and field testing of tractors. Then to be able to form tractor systems and machine pool according to the production structure and conditions and for development, design, as well as selection and use of ecological tractors for the production of safety food.

Learning Outcomes:
After taking the course, the student acquires knowledge and skills that enable him to: essential understanding of the technical basis of agricultural tractors, design and testing of agricultural tractors, correct choice according to purpose, sowing structure and conditions of use, form a tractor system and complete the machine pool according to production conditions, proper handling , maintenance and storage and economical and ecological use of agricultural tractors.

Syllabus:
Theory
Tractors and mobile systems in agriculture, water management and forestry, task, definitions, history, classification and categorization, condition, production, needs and development tendencies. Tractor characteristics, energy, weight, morphological, operational, ergonomic and safety at work. Motion mechanics and determination of dynamic characteristics, traction balance, power balance, traction characteristics. Tractor use, environmental impact and machine pool optimization. Testing of tractors and mobile systems.
Practice
Introduction to the construction of the tractor system, principles of operation, settings, driving techniques, basics of calculation. Tractor design - static, dynamic, stability, passability, maneuverability, traction balance and power balance. Formation of mobile systems and optimization of machine pool and impact on the environment. Laboratory and field tests, methods, equipment, procedure, report generation.

Required Reading:

Weekly Contact Hours: 7	**Lectures:** 4	**Practical work:** 3

Teaching Methods:

Lectures and Practical classes, Consultations if needed.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	10	written exam	
Test	15	oral exam	50
Seminar papers	10	…….	
Colloquium	15		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.