

Course Unit Descriptor

Study Programme: Agriculture engineering and information technology			
Course Unit Title: Mechanisms of agricultural equipment			
Course Unit Code: 19.PTI010			
Name of Lecturer(s): Marko Kostić			
Type and Level of Studies: Undergraduate academic studies			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): summer			
Language of instruction: serbian/english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: no			
Course Aims: The aim of the course is for students to learn the basic parts and working principles of the mechanisms of agricultural machines, their role and function in the machines, the calculation of structural, kinematic and dynamic parameters and performance indicators and the balancing of mechanisms, the application of design programs for construction and analysis.			
Learning Outcomes: Students will have the necessary knowledge of the mechanisms of agricultural machines, and will be able to choose, use, adjust and maintain agricultural machines more correctly, reliably and rationally. After passing the course, students will be able to model mechanical systems and analyze operating parameters and functionality in a virtual environment.			
Syllabus: <i>Theory</i> Analyzed mechanisms: reciprocating, four-link, sliding, oscillatory sliding, lever, cam, toothed, tractor lifting mechanism, cardan shaft, planetary mechanisms, ... The following aspects will be analyzed for all mentioned mechanisms: structural analysis; degree of freedom of movement; classification; paths; operating conditions, kinematic analysis; dynamic analysis - forces that load the mechanism; determination of the driving force; dynamic equations of movement of mechanisms, indicators of working conditions within the machine. Balancing of the mechanism: conditions of balance; balancing methods; balancing devices. Synthesis of mechanisms: basic terms; synthesis methods; optimization synthesis <i>Practice</i> Creation of calculation tasks in the areas covered in the lectures. Independent production of graphic works. Construction of simpler mechanisms in the program for 3D modeling and analysis of kinematic and dynamic parameters.			
Required Reading: 1. Gligorić R. 2005. Mechanisms of agricultural equipment. University of Novi Sad. Book. 2. Kostić M, Gligorić R. Workbook			
Weekly Contact Hours:	Lectures: 2	Practical work: 2	
Teaching Methods: Method of oral presentation and conversation. Method of presentations, demonstrations, simulations and illustrations on the board and using computers. Method of simulations using computers. Method of practical works (calculation and computer methods)."			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points

Active class participation	5	written exam	30
Practical work	5	oral exam	30
Preliminary exam(s)	15	
Seminar(s)	15		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			