Course Unit Descriptor

Study Programme: Agricultural engineering and information systems

Course Unit Title: Mechanization for harvesting

Course Unit Code: 19.PTI018

Name of Lecturer(s): Jan J Turan, PhD, Full Professor

Type and Level of Studies: Bachelor degree

Course Status (compulsory/elective): compulsory

Semester (winter/summer): summer

Language of instruction: English

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

Number of ECTS Allocated: 6

Prerequisites: Farming and vegetable growing, Machines in Field Production

Course Aims: Training students for theoretical and practical mastery of subjects for the selection, regulation and management of modern machinery and equipment for agricultural production.

Learning Outcomes: Ability to choose, plan, manage and exploit modern machinery in agricultural production.

Syllabus:

Theory

Universal grain harvesters: 1. Headers of universal grain harvesters, 2. Exercising devices, 3. Separation devices, 4. Conveyors, elevators and bunker, 5. Drive and transmission systems of the combine, 6. Hydraulic and electrical installation, 7. Cabin with command and control devices. II. Machines for harvesting sugar beet roots: 1. Devices for removing sugar beet leaves and heads, 2. Devices for extracting sugar beet roots, 3. Devices for cleaning sugar beet roots. III. Machines for harvesting corn on the cob (harvesters and harvesters). IV. Mechanization for the primary production of seeds of arable crops. V. Biotechnical systems in agriculture - systems of automatic control and adjustment of harvesters, measurement and regulation systems.

Practice

The exercises include a practical presentation and description of harvesting machines and devices, as well as measuring and regulating components of the system. The purpose of the machines, the working organs of the said machines, their operation, adjustment and maintenance. The theoretical part of exercises with applied tasks from the mentioned areas.

Required Reading:

Vojvodić, N., Žetveni kombajni: Poljoprivredne mašine, Izdavač Nevkoš, Novi Sad, 2002

Meši, M., Poljoprivredne mašine, Izdavač:Poljoprivreni fakultet Univerziteta u Novom Sadu, 2012.

Petre Miu: Combine Harvesters: Theory, Modeling, and Design, CRC Press, 2015. ISBN: 9781482282375

Weekly Contact Hours: 6	**Lectures:** 3	**Practical work:** 3

Teaching Methods:

Oral lectures with the use of modern equipment for visual display and simulation. Practical exercises on machines with demonstrations in laboratory and field conditions.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	Points 70	**Final exam**	Points 30
Active class participation	5	written exam	
Practical work	5	oral exam	30
Preliminary exam(s)	30	…….	
Seminar(s)	30		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			