



No. \_\_\_\_\_ of \_\_\_\_\_

USAMV form 0102020110 (discipline code)

## SUBJECT OUTLINE

### 1. Information on the programme

1.1 Higher education institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Technical and Soil Science
1.4. Field of study	Agronomy
1.5. Cycle studies <sup>1)</sup>	Bachelor
1.6. Specialization/ Study program	Montanology
1.7. Form of education	Full time

### 2. Information on the discipline

2.1. Discipline name	AGRICULTURAL MACHINERY II							
2.2. Course coordinator	Assoc. prof. eng. PhD. Ovidiu RANTA							
2.3. Seminar/laboratory/project leader	Lect. eng. PhD. Ovidiu MARIAN							
2.4. Year of study	II	2.5. Semester	I	2.6. Form of evaluation	Continuous	2.7. Discipline status	Content <sup>2</sup>	DD
							Compulsoriness <sup>3</sup>	DI

### 3. Total estimated time (hours per semester)

3.1. Hours per week – full time programme	4	out of which: 3.2. course	2	3.3. seminar/ laboratory/ project	2
3.4. Total number of hours in the curriculum	56	out of which: 3.5. course	28	3.6. seminar/laboratory	28
Distribution of the time allotted					Hours
3.4.1. Study after manual, course support, bibliography and notes					40
3.4.2. Additional documentation in the library, on specialized electronic platforms and on the ground					20
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					20
3.4.4. Tutorials					4
3.4.5. Examinations					10
3.4.6. Other activities					
3.7. Total hours of individual study	94				
3.8. Total hours per semester	150				
3.9. Number of credits <sup>4</sup>	5				

### 4. Prerequisites (if applicable)

4.1. Curriculum related	Mathematics, Energy basis, Agricultural machinery 1, driving tractors
4.2. Skills related	The student must have knowledge of mechanics and physics, cars and tractors

### 5. Conditions (if applicable)

5.1. for the course	The course is interactive, students can ask questions about the content of the exhibition. The university discipline requires the observance of the start and end time of the course. No other activities are tolerated during the lecture, mobile phones should be closed
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5.2. . for the seminar/laboratory/project	Practical work is mandatory, each student will carry out an individual activity, based on reports, with the machine to be studied. Academic discipline is required throughout the duration of the work.
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### 6. Comulated specific competences

Professional competences	Defining the basic technical and technological concepts necessary for applying scientific theories and methodology Choosing the principles and establishing the basic methods suitable for designing and adopting technical solutions of mechanization when harvesting agricultural crops Writing a specialized study for determining the interactions between the influencing factors, quality indices and energy consumption atharvesting of agricultural products
Transversal competences	Identifying and observing the rules of professional ethics and deontology, taking responsibility for the decisions taken and the risks involved Carrying out a work / project, carrying out responsibilities specific to the role in a multidisciplinary team

### 7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	Formation of the technical horizon of the future specialists when acquiring them with the engineering models of approaching and solving the problems related to technologies of mechanization, exploitation of agricultural machines and optimization of energy consumption
7.2. Specific objectives	Creation of skills for the correct choice of technological stages, the proper setting of the dimensions and type of installations for reducing specific consumption and for higher reliability, at high technical parameters.

### 8. Content

8.1. COURSE Number of hours – 28	Teaching methods	Observations
1. Machines for harvesting fodder plants: classification, requirements imposed on them	Lecture	1 Lecture
2. Mowers, rakes, baling presses, self-loading trailers	Lecture	1 Lecture
3. Combines for harvesting fodder plants	Lecture	1 Lecture
4. Combines for harvesting cereals and adapting them to harvesting of other crops	Lecture	1 Lecture
5. Machines and combines of harvesting corn	Lecture	1 Lecture
6. Machines and combines of harvesting potato	Lecture	1 Lecture
7. Machines and combines of harvesting sugar beet	Lecture	1 Lecture
8. Machines and combines of harvesting flax and hemp	Lecture	1 Lecture
9. Machines for harvesting peas, beans and onions	Lecture	1 Lecture
10. Machines for cleaning and sorting seeds	Lecture	1 Lecture
11. Drying systems, preservation and storage of agricultural products	Lecture	1 Lecture
12. Machines and installations for preparing and administering animal feed	Lecture	1 Lecture
13. Machines and installations for the maintenance and cleaning of animal shelters and installations for water supply of agrozootechnical farms	Lecture	1 Lecture
14. Machines and installations for milking cows and for the primary processing of milk	Lecture	1 Lecture
8.2. PRACTICAL WORKS Number of hours – 28		
1. Labor protection rules for harvesting works	Practical works	1 lab work
2. Mowers, rakes, machines for collecting and loading forage	Practical works	1 lab work
3. Bale presses, combine harvesters forage	Practical works	1 lab work
4. Combines for harvesting cereals. CP-12 combination: construction, functioning	Practical works	1 lab work

5. Adjustments and deficiencies in operation at the cereal harvesting combines. Adaptation of CP-12 for harvesting other crops	Practical works	1 lab work
6. Machines and combines of harvesting corn	Practical works	1 lab work
7. Machines and combines of harvesting potato	Practical works	1 lab work
8. Machines and combines of harvesting sugar beet	Practical works	1 lab work
9. Machines for harvesting peas and onions	Practical works	1 lab work
10. Machines and combines of harvesting flax and hemp	Practical works	1 lab work
11. Machines for cleaning and sorting seeds	Practical works	1 lab work
12. Machines and installations for preparing and administering animal feed	Practical works	1 lab work
13. Machines and installations for the maintenance and cleaning of animal shelters and installations for water supply of agrozootechnical farms	Practical works	1 lab work
14. Machines and installations for milking cows and for the primary processing of milk	Practical works	

*Compulsory bibliography:*

1. Curs predat
2. Drocaș I., Mihaiu I., Ranta O., Molnar A., 1999, Reglarea mașinilor agricole de lucrat solul, semănat, plantat și fertilizat și protecția plantelor, Editura Risoprint, Cluj-Napoca.
3. Mihaiu I., Drocaș I., Ranta O., Molnar A., 2004, Reglarea mașinilor agricole, Editura Risoprint.
4. Toma D. și colab., 1982, Tractoare și mașini agricole, EDP, București.
5. Sandru A. și colab., 1983, Exploatarea utilajelor agricole, EDP, București.

*Elective bibliography:*

1. Toma D., Sin Gh., 1987, Calitatea lucrărilor agricole executate mecanizat, Editura Ceres, București.
2. Toma D., Bian I., 1977, Sistemul de mașini și eficiența exploatarea lor în producția vegetală, Editura Ceres, București.

**9. Corroborating the discipline contents with the expectations of the epistemic community representatives, of the professional association and of the relevant employers in the corresponding field**

In order to identify ways of modernizing and continuously improving the teaching and the content of the courses, with the most current topics and practical problems, the teachers participate in the meetings and symposiums where they meet with teachers from other universities and with representatives from the economic activity. Also the teachers participate in exhibitions and forums organized at these events.

**10. Evaluare**

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	1. Knowledge of the main technical notions used in mechanization of harvesting works. 2. Knowing the main machines and who they are use, mode of operation, adjustment, operation 3. Forming a general conception on the machines with which it is equipped farm, according to its specificity, to ensure maximum profitability	EXAM	80%
10.5. Seminar/Laboratory	Recognition and identification of the main types of agricultural machinery Carrying out dimensioning, verification and execution calculations for the mechanization technologies of the product harvesting	Continuous assessment	20%
<b>10.6. Minimum performance standard</b>			
Mastery of scientific information transmitted through lectures and practical papers at an acceptable level.			

- 1 Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.
- 2 according to the educational plan
- 3 Discipline status (compulsoriness) - choose one of the options – DI (compulsory discipline) DO (optional discipline) DFae (facultative discipline).
- 4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Date  
04.09.2019

Course leader  
Assoc. prof. eng. PhD. Ovidiu RANTA

Laboratory works/ seminars leader  
Lect. eng. PhD. Ovidiu Marian

Date of approval in the  
department  
05.09.2019

Department director  
Assoc. prof. eng. PhD. Ovidiu RANTA