



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

USAMV form 0124010102

## SUBJECT OUTLINE

## 1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Environmental and Plant Protection
1.4. Field of study	Environmental Engineering
1.5. Cycle of study <sup>1</sup>	Master
1.6. Specialization/ Study programme	Protection of natural and anthropic systems
1.7. Form of education	Full time

## 2. Information on the discipline

2.1. Discipline name	Management of soil resources							
2.2. Course coordinator	Prof.Ph.D. Laura Paulette							
2.3. Seminar/ laboratory/ project coordinator	Lecturer PnD IOan Brasovean							
2.4. Year of study	I	2.5. Semester	1	2.6. Evaluation type	Summative	2.7. Discipline status	Content <sup>2</sup>	DS
							Compulsoriness <sup>3</sup>	DI

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

3.1. Hours per week - full time programme	3	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	1
3.4. Total number of hours in the curriculum	42	out of which: 3.5. lecture	28	3.6. seminar/laboratory	14
Distribution of the time allotted					hours
3.4.1. Study based on books, textbooks, bibliography and notes					20
3.4.2. Additional documentation in the library, electronic platforms and field experiences					20
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					20
3.4.4. Tutorials					3
3.4.5. Examinations					20
3.4.6. Other activities					
3.7. Total hours of individual study	83				
3.8. Total hours per semester	125				
3.9. Number of credits <sup>4</sup>	5				

## 4. Prerequisites (if applicable)

4.1. curriculum-related	Pedology, Ecological reconstruction, Environmental monitoring
4.2. skills-related	Knowledge regarding the functions of the edaphic system and agroecosystems

## 5. Conditions (if applicable)

5.1. for the course	Teaching is interactive. Illustrated with photos and drawings in Power Point. It aims a direct response of the information presented (question and answer) by both, teacher and students. Academic discipline enforces the start time and end of the course. It is not allowing any other activities during the lecture, mobile phones are closed.
5.2. for the seminar/ laboratory/ project	In practical work case studies are analyzed and alternatives are proposed. Academic discipline is required throughout the duration of the works.

## 6. Cumulated specific competences

Professional competences	<p>Knowledge of rational management and exploitation of edaphic resources.          Providing services regarding the use of the edaphic resource.          Conducting specialized studies and expertise and providing consultancy in agricultural land management          Taking soil samples, carrying out analyses in laboratories and specialized equipment and interpreting soil / soil quality indicators.          Acquiring best practices in the use and management of soil resources.          Teaching and research activities in the management of soil resources</p>
Transversal competences	<p>Can assess the productive capacity of edaphic resources by use.          Demonstrate knowledge of intervention measures for natural and human limitations soil less productive.          Demonstrate theoretical and applied knowledge regarding the grouping of soil resources by productivity groups.          To know and apply measures to improve the productive capacity of agricultural lands.</p>

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

7.1. General objective	Acquiring knowledge regarding the rational management and use of soil resources
7.2. Specific objectives	<p>To know the principles, criteria and systems of technical and genetic classification of soil resources          To evaluate the productive capacity of soil resources          To apply the intervention measures in case of natural and anthropic limitations.          Be able to differentiate soil resources by productivity groups (quality) and be able to apply measures to increase the fertility of agricultural land.</p>

### 8. Content

8.1. COURSE Number of hours -28	Teaching methods	Observation
<b>General notions about soil.</b> Unity classification systems of soil resources (components and structure)	Lecture	1 lecture = 2 hours
<b>Classification of soil resources.</b> Classification by purpose of their use Agricultural lands. Forest lands.	Lecture	1 lecture
<b>Characterization of soil resources on Earth</b>	Lecture	1 lecture
<b>Quality status of soil resources</b>	Lecture	1 lecture
<b>Assessment of the productive capacity</b> of agricultural and forestry lands.	Lecture	1 lecture
<b>Restrictions on the quality of soil resources.</b> Sources and processes of degradation of the productive capacity of the soils.	Lecture	1 lecture
<b>Group of eroded soils.</b>	Lecture	1 lecture
<b>Group of poorly developed soils</b> (young soils)	Lecture	1 lecture
<b>Group of soils with excess moisture.</b> Spreading, characterization, measures to increase productive capacity	Lecture	1 lecture
<b>Group of salinized and alkalinized soils.</b> Spreading, characterization, measures to increase productive capacity	Lecture	1 lecture
<b>Group of acid soils.</b> Spreading, characterization, measures to increase productive capacity	Lecture	1 lecture
<b>Group of soils with fine and sandy texture.</b> Spreading, characterization, measures to increase productive capacity.	Lecture	1 lecture
<b>Group of mountain soils.</b> Spreading, characterization, measures to increase productive capacity.	Lecture	1 lecture
<b>Group of soils with high productivity potential.</b>	Lecture	1 lecture

8.2. PRACTICAL WORKS Number of hours - 14	Teaching methods	Observation
<b>Analysis of the technical classification systems of soils</b>	Study case	1 lab work (2 hours/work)
<b>Assessment of the productive capacity of agricultural and forestry lands.</b> Restrictions on the quality of soil resources. Sources and processes of degradation of the productive capacity of the soils.	Study case	1 lab work
<b>Assessment of the productive capacity of the eroded soils.</b> Determination of soil losses, physico-chemical characterization of soils and establishment of preventive and corrective measures.	Study case	1 lab work

measures. Assessment of the productive capacity of saline and alkaline soils. Use of keys to identify salinized and alkalinized soil types and subtypes. Improvement measures	Study case	1 lab work
Amendment of acidic natural soils. Calculation of the quantity of amendment. Alternatives to using amendments	Study case	1 lab work
Measures to improve the physical and physical-mechanical properties of soils with fine texture and coarse texture.	Study case Test	1 lab work 1 lab work
Knowledge testing.		
Compulsory bibliography: 1. *** <i>Notițe de curs</i> .		
2. Miclăuș V., 1991. <i>Pedologie ameliorativă</i> . Editura Dacia, Cluj Napoca.		
Optional bibliography: 1. ICPA, 1986 - <i>Metodologia de elaborare a studiilor pedologice</i> . București. 2. ICPA, 2012. <i>Monitorințul stării de calitate a solurilor</i>		

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

The content of the discipline is similar to that of the disciplines within the faculties with environmental profile of the universities of the country. The content is supplemented annually, based on the new information published in the field and the debates with farmers, practitioners and specialists.

**10. Evaluation**

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
<b>10.4. Course</b>	Answer to the quizzes	summative (E)	70%
<b>10.5. Seminar /Laboratory</b>	Answer to the quizzes	test	30%
<b>10.6. Minimum performance standards</b>			
Mastery of scientific information transmitted through lectures and practical papers at an acceptable level. Obtaining the passing grade for on-the-spot checks is a condition for participation in the exam.			

- 1 Cycle of studies - choose one of the three options: Bachelor/Master/PhD
- 2 according to the educational plan
- 3 Discipline status (compulsoriness) - choose one of the options - D1 (compulsory discipline) DO (optional discipline) DFac (facultative discipline).
- 4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on  
04.09.2019

Course coordinator  
Prof. Dr. L. Paulette  
*Paulette*

Laboratory work/seminar coordinator  
Prof. dr. Laura Paulette  
*Paulette*

Approved by the  
department on  
05.09.2019

Head of the Department  
Prof. Dr. Ioan Grojan  
*Grojan*