



No. \_\_\_\_\_ / \_\_\_\_\_

USAMV Form 0102020101

## 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	I – Technical and Soil Sciences
1.4. Field of study	Agronomy
1.5. Cycle of study <sup>1)</sup>	Bachelor of Science
1.6. Specialization/Study programme	Montanology
1.7. Form of education	Full time

### 2. Information on the discipline

2.1. Discipline name	Pedology 2							
2.2. Course coordinator	Prof.dr. Laura Paulette							
2.3. Seminar/laboratory/project coordinator	Lecturer dr. Buta Mihai							
2.4. Year of study	I	2.5. Semester	2	2.6. Evaluation type	Summative	2.7. Discipline status	Content <sup>2</sup>	DD
							Compulsoriness <sup>3</sup>	DI

### 3. Total estimated time (teaching 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 numbers of hours in the curriculum	56	out of which: 3.5. course	28	3.6. seminar/laboratory	28
Distribution of time allotted					hrs.
3.4.1. Study based on books, textbooks, bibliography and notes					12
3.4.2. Additional documentation in the library, electronic platforms and field experiences					10
3.4.3. Preparing seminars / laboratories / projects, reports, portfolios and essays					10
3.4.4. Tutorial					2
3.4.5. Examinations					10
3.4.6. Other activities					
3.7. Total hours of individual study	44				
3.8. Total hours per semester	100				
3.9. Number of credits <sup>4</sup>	4				

### 4. Prerequisites (if applicable)

4.1. curriculum related	Ecology, Botantics, Agrometeorology
4.2. skills related	Knodleges regarding the components and functions of edaphic system

### 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 enforce 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	Practical works in the laboratory are physical and chemical analysis of soil and on the field soil profile morphology is analyzed. Under the direct supervision of practical framework, each student will conduct an individual work with laboratory materials provided and described in the guide for practical work. Academic discipline is necessary for the duration of works.

Professional competences	<p>To know the principles, criteria and international soil classification systems</p> <p>To know the natural soil formation in Romania</p> <p>To know soil classification by the Romanian system SRTS 2012</p> <p>To know classification and characterization of soils on upper taxonomic units</p> <p>Getting to know the survey and evaluation of soils in Romania</p> <p>To evaluate the productive capacity of agricultural land</p>
Transversal competences	<p>To demonstrate practical skills in identifying the productive capacity of soils / land</p> <p>To be able to asses morphological properties and pedogenetic horizons on soil profile.</p> <p>To be able to manage field activities and observations.</p> <p>To develop resource management strategies of edaphic system (best management practices).</p> <p>To be able to provide advice on identification, evaluation and usage of the soil resources.</p> <p>To participate in research activities.</p>

**7. Disciplines objectives (based on the cumulated specific competences) bjectives of the course (as a result of the specific competences acquired)**

7.1. General objectives	Acquiring knowledge of soil genesis and soil properties.
7.2. Specific objectives	<p>Morphological description and denomination of genetic soil types in Cluj County.</p> <p>Evaluation of the natural productive capacity of soils</p> <p>Classification by use and fertility of agricultural lands</p> <p>Perform analysis of soils in laboratory.</p>

**8. Content**

8.1. COURSE	Teaching methods	Observations
<p><b>Number of hours – 28</b></p> <p><b>Soil Classification.</b> Developments in world classifications (international principles and classification systems, genetic classifications and utilities). Soil classification in Romania.</p> <p><b>The natural formation of soils in Romania</b> (delimitation, characterization and correlation with pedogenetic cover).</p> <p><b>Protisolurilor class.</b> Lithosol. Regosol. Psamosol. Aluviosol. Keys determination of Protisoluri class, soil types and subtypes.</p> <p><b>Cernisoluri class.</b> Kastanozem. Chernozem. Phaeoziom. Rendzina. Keys determination of Cernisoluri class, soil types and subtypes.</p> <p><b>Umbrisols and Cambisols class.</b> Nigrosol. Humosiosol. Eutricambosol. Districambosol. Keys determination of Umbrisols and Cambisols class, soil types and subtypes.</p> <p><b>Luviosols class.</b> Preluviosol. Luviosol. Planosol. Alosol. Keys determination of Luviosols class, soil types and subtypes.</p> <p><b>Spodosols class.</b> Prepodzol. Podzol. Keys determination of Spodosols class, soil types and subtypes</p> <p><b>Vertisols and Andisols class.</b> Pelosol. Vertisol. Andosol. Keys determination of Vertisols and Andisols class, soil types and subtypes.</p> <p><b>Hidrisols class.</b> Stagnosol. Gleiosol. Limnosol. Keys determination of Hidrisols class, soil types and subtypes</p> <p><b>Salsodisols class.</b> Solonchak. Solonetz. Keys determination of Salsodisols class, soil types and subtypes.</p> <p><b>Histosols class.</b> Histosol. Keys determination of Histisols class, soil types and subtypes.</p> <p><b>Anthrisols class.</b> Anthrosol. Technosol. Keys determination of Anthrisols class, soil types and subtypes.</p> <p><b>Agricultural lands survey and evaluation.</b></p>	<p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p>	<p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>1 lecture</p> <p>2 lectures</p>
<p><b>8.2. PRACTICAL WORK</b></p> <p><b>Number of hours – 28</b></p> <p>Determination of soil carbonates (Sheibler method)</p>	<p>analyses</p>	<p>1 work</p>

Determination of cationic activity (Kappen method)	analyses	1 work
The sum of base cation exchange (SB) (Kappen method)	analyses	1 work
Determination of soil humus (Tiurin method)	analyses	1 work
Determination of soluble salts (determination of anions in aqueous extract)	analyses	1 work
Testing of theoretical knowledge/interpretation of analytical data	Test	1 work
Pedon description: Preluvosol (Orchard Veterinary Medicine). Fulfill the data sheet.	Data sheets	1 work
Pedon description: rendzina (Faget). Fulfill the data sheet.	Data sheets	1 work
Pedon description: Luvosol (Faget). Fulfill the data sheet.	Data sheets	1 work
Pedon description: Chernozem (Polocsay Research Center). Fulfill the data sheet.	Data sheets	1 work
Pedon description: Eutricambosol (Zorilor). Fulfill the data sheet.	Data sheets	1 work
Evaluation of agricultural land - Preluvosoil	Data sheets	1 work
Testing of theoretical knowledge and practical description of micromonolith	test	1 work

**Compulsory Bibliography:**

1. LAURA PAULETTE, 2008 – *Pedologie*, Editura Todesco, Cluj Napoca.
2. LAURA PAULETTE, M. BUTA, 2014 – *Pedologie. Analiza solului*. Ed. Risoprint, Cluj Napoca.
3. LAURA PAULETTE, 2007 – *Pedologie - Studiul solului in teren și laborator*, Ed. Todesco, Cluj-Napoca.
4. BLAGA GH., FILIPOV F., LAURA PAULETTE, RUSU I., UDRESCU S., VASILE D., 2008 – *Pedologie*. Editura Mega Cluj Napoca.
5. FLOREA N., I. MUNTEANU, 2012 - *Sistemul Român de Taxonomie a Solurilor (SRTS)*. Editura Sitech, Craiova
6. ICPA, 1986 - *Metodologia de elaborare a studiilor pedologice*. București.

**Optional bibliography:**

1. Lupașcu Gh., M. Parichi, N. Florea, 1998 – *Dicționar de Știința și Ecologia solului*. Editura Universității Al. Ioan Cuza, Iași.
2. SECU CRISTIAN, C.V. PATRICHE, 2007 – *Solurile lumii. Clasificare, răspândire, caracteristici* Editura Terra Nostra, Iași.
3. \*\*\* European Commission, 2005 – *Soil Atlas of Europe*. European Soil Bureau Network, Office for official Publications of the European Communities, Luxemburg.

**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**

Course content is similar to that of subjects in the economic engineering faculties of universities in the country and is supplemented annually based on new information published in the field and discussions with farmers, practitioners and specialists in soil science.

**10. Evaluation**

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percent of the final grade
<b>10.4. Course</b>	Answer to topic extracted oral exam Activity in discipline	Oral exam	80%
<b>10.5. Seminar/Laboratory</b>	Results at testing sessions Activity in discipline at practical work	periodic evaluation / colloquy	20%

**10.6. Minimum performance standard**

Knowledge of scientific information transmitted through lectures and practical work at an acceptable level. Getting the minimum mark (at 5) in laboratory assessments is a graduation requirement for exam.

- <sup>1</sup> Level of study – to be chosen one of the following – Bachelor/Master
- <sup>2</sup> Course regime (content) - for Bachelor level it will be chosen one of the following - FdS (fundamental subject), BS (basic subject), SS (specific subject), CS (complementary subject).
- <sup>3</sup> Course regime (compulsory level) - to be chosen one of the following – CsS (compulsory subject); OS (optional subject) FS (facultative subject).
- <sup>4</sup> One credit is equivalent with 25-30 hours of study (didactic and individual study).

Filled in on  
04.09.2019

Course coordinator  
Prof. PhD Laura Paulette

Laboratory work/seminars Coordinator  
Lecturer PhD Mihai Buta

Approved by the  
department on  
05.09.2019

Head of Department  
Assoc prof. PhD. Ovidiu Ranta