



Nr. _____ din _____

Form code USAMV 0102030108

COURSE DESCRIPTION

1. General data

1.1. Higher Education Institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Technical Sciences and Soil Sciences
1.4. Domain of study	Agronomic
1.5. level of study ¹⁾	Bachelor
1.6. Specialization/ Program of study	Montanology
1.7. Form of teaching	Full-time learning

2. Characteristics of the course

2.1. Name of the course	Erosion control and territory organisation							
2.2. Course leader	Lecturer PhD. Adrian Ioan Pop							
2.3. Coordinator of the laboratory/seminars activity	Lecturer PhD. Paula Ioana Moraru							
2.4. Year of study	III	2.5. Semester	II	2.6. Type of Evaluation	Continuously	2.7. Course regime	Content ²⁾	DD
							Level of compulsory ³⁾	DI
3.1. Number of hours/week– frequency form	4	of which: 3.2. course	2	3.3. seminar/ laboratory/ project	2			
3.4. Total hours in the teaching curricula	56	Of which: 3.5. course	28	3.6. seminar/laboratory	28			
Distribution of time								hrs
3.4.1. Study based on hand book, notes, bibliography								22
3.4.2. Extra documentation in the library, on specific electronic platforms and on field								13
3.4.3. Prepare the seminars / laboratories / projects, theme, essays, reports, portofolio								15
3.4.4. Tutorial								4
3.4.5. Examination								10
3.4.6. Other activities								
3.7. Total hours of individual study	64							
3.8. Total hours on semester	120							
3.9. Number of ECTS ⁴⁾	4							

3. Total estimated time (hours/semester for the teaching activities)

4. Pre-conditions (where is the case)

4.1. of curriculum	Pedology, Topography, Agrotechnics
4.2. of competences	The student must have knowledge about the soil regarding the distribution and landscaping in the national geographic frame of natural resources, as well as controlling some natural phenomena which could negatively influence the agricultural production.

5. Conditions (where is the case)

5.1. of course development	Power Point course presentation, using summarised material as sketches, schemes, pictures, video material. Attending and graduating compulsory courses, paying school tuition (if it is the case).
5.2. of seminar/laboratory/project development	For practical work various soil tests and determinations are carried out in the laboratory. On the field, the negative effects which can appear due to nonobservance of technology elements are analysed. Some work will be carried out differentially by the particularities of the subject and subject presentations will be carried out – followed by discussions and conclusions.

6. Specific competences gained

Professional competences	<p>Knowing the evolution in time of degraded lands and the consequences on soil fertility;</p> <p>Knowing the large land areas in the country which are in danger of erosion;</p> <p>Having elementary notions of land organisation;</p> <p>Knowing the actions for increasing the productive potential of the poorly productive and unproductive soil;</p> <p>Having the capacity of introducing new fields in the agricultural circuit.</p>
Transversal competences	<p>Being able to deal with the main technical, economic and environmental aspects which participate in achieving effective and durable agriculture;</p> <p>Being able to determine on the field the effects produced by all types of erosion;</p> <p>Participating in scientific circles organised on this topic;</p> <p>Being able to offer consultancy regarding appropriate capitalisation of these fields.</p>

7. Subject Objectives (as a result of the specific competences gained)

7.1. Subject general objective	Gaining knowledge concerning the agricultural fields degradation factors and prevention methods in order to obtain large high quality productions while preserving resources used in the production process, as well as notions regarding land organisation as basis for durable use of agricultural fields.
7.2. Specific objective	The concepts that will be taught aim at familiarising the student with aspects related to the organisation and the landscaping of the land fund. They should be able to analyse the environment components and restoration of degraded or degrading territories.

8. Content

8.1.COURSE Number of hours – 28	Methods of teaching	Observations
The objective and role of the discipline. The purpose and role of the soil erosion control action. Land organisation as basis for durable use of the agricultural fields.	Lecture	1 lecture
Aspects regarding soil erosion worldwide. The problem of soil erosion in Romania. Manifestation forms of soil erosion.	Lecture	1 lecture
Factors which influence soil erosion. Climatic factors. Geographical features factors. Lithological factors. Edaphic factors. Anthropogenic factors.	Lecture	2 lectures
Damage and assessment of the effects caused by soil erosion. Removing the fertile layers of the soil. Changing the physico-chemical characteristics of the soil. Increasing the draught phenomenon on the slopes. Decrease of the agricultural production.	Lecture	1 lecture
Assessment of the damage produced by deep erosion and landslides. Assessment of the effects on the environment. Assessment of the economic effects.	Lecture	1 lecture
Necessary studies for planning erosion control work. Geographical features study. Soil study. Climate study. Hydrological study. Vegetation study. Economic study.	Lecture	1 lecture
Preventing and controlling soil erosion on arable land. Anti-erosion organisation of arable land downhill. Anti-erosion work.	Lecture	1 lecture
Deep erosion. Work for controlling deep erosion. Landslides.	Lecture	1 lecture
Prevention and control of soil erosion for pastures, vines and orchards. Actions for water retention or evacuation etc.	Lecture	1 lecture
Land organisation. Classification of the land organisation activities. Scientific basis of land organisation. Technical, economical and legal field records.	Lecture	1 lecture
The land fund as object of land organisation.	Lecture	1 lecture

Establishing use categories. Actions for land arranging and improving cultivated soil.	Lecture	1 lecture
Anti-erosion organisation of arable land situated downhill. The structure of downhill field cultures. Fertilisation of downhill land. Soil tilling on downhill land.	Lecture	1 lecture

8.2.PRACTICAL WORK Number of hours – 28		
The hydric erosion process. Erosion produced by water drops. Erosion produced by leaks.	Lecture	1 laboratory activity
Assessment of the damage caused by surface erosion.	Lecture	1 laboratory activity
Assessment of the erosion effects on the environment.	Lecture	1 field activity
Restoring the eroded lands. Contamination by erosion of surface water.	Lecture	1 laboratory activity
The consequences of wind erosion. The factors which determine wind erosion. Prevention and controlling means for wind erosion.	Lecture	1 laboratory activity
Controlling erosion on downhill land.	Lecture	1 field activity
Controlling deep soil erosion.	Lecture	1 field activity
Controlling soil erosion for pastures, vines and orchards.	Lecture	1 field activity
Action and work for preventing and controlling landslides.	Lecture	1 laboratory activity
Farm integrated actions for preventing soil erosion.	Lecture	1 laboratory activity
Anti-erosion systems for placing cultures on slopes. The culture system on the level curves direction. The stripes culture system. The grass stripes culture system. The terraces culture system. Planting protection screens.	Lecture	2 laboratory activities
The anti-erosion organisation of the land for pastures, vines and orchards.	Lecture	2 laboratory activities

Compulsory bibliography

1. Pop Adrian, *Lecture notes*. USAMV Cluj-Napoca.
2. Marcel Dirja, 2000, *Controlling Soil Erosion*. Risoprint Publishing House. Cluj-Napoca.
3. Petru Guş, Teodor Rusu, Ileana Bogdan. 2004, Rotation. *Crop Rotation and Territory Organisation*. Risoprint Publishing House. Cluj-Napoca.
4. Teodor Rusu, Ileana Bogdan, Adrian Ioan Pop, *Practical Work Guide for Agrotechnics*, 2013, Grinta Publishing House. Cluj Napoca.

Facultative bibliography:

1. Dirja Marcel, *Establishing the Work Complex for Soil Erosion Prevention and Control on Newly Created Pastures in Hilly Areas*. PhD thesis, 1998. USAMV Library, Cluj-Napoca.
2. Guş, P., T. Rusu, *Sustainable Agricultural Development*, 2005, Editura Risoprint Cluj-Napoca.
3. *Soil Degradation and Improvement – Prevention, Decreasing, Restoration, Reconstruction, Recultivation, Taking for Cultivation*, 2003. ICPA Bucharest.

9. Corroboration of the subject content with the expectations of the epistemic communities' representatives of the professional associations and representatives employers in the domain

The discipline content is similar to that of the disciplines from agricultural profile faculties of universities in the country and it is annually completed based on new information in the field.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation methods	10.3. Percent of the final grade
10.4. Course	Knowledge of the different types of soil degradation in Romania. Factors which influence soil erosion. Damage and effects caused by soil erosion. Assessment of the long-term effects	verification	70,00%

	capacity of the soil.		
10.5. Seminar/Laboratory	Actions for preventing and controlling soil erosion. Agrotechnical work and actions for preventing soil erosion. Anti-erosion systems for downhill land.	2 continuous assessments are planned	30.00%
10.6. Minimal standard of performance Knowledge of the scientific information delivered through lectures and practical work on the field and in the laboratory, as well as obtaining the passing mark for the continuous assessment.			

- ¹ level of study – to be chosen one of the following – Bachelor /Post graduate/Doctoral
- ² Course regime (content)- for bachelor level it will be chosen one of the following - DF (fundamental subject), DD (subject in the domain), DS (specific subject), DC (complementary subject).
- ³ Course regime (compulsory level)- to be chosen one of the following – DI (compulsory subject) DO (Optional subject) DFae (Facultative subject).
- ⁴ One ECTS is equivalent with 25-30 de hours of study (didactical and individual study).

Date of completion
04.09.2019

Course coordinator
Lecturer PhD. Adrian Ioan Pop

Leader of the laboratory/seminars
Lecturer PhD. Paula Ioana Moraru

Date of Department's
approval 05.09.2019

Department manager
Associate Professor PhD Ovidiu Ranta