



No. _____ / _____

USAMV form 0101040112

SUBJECT OUTLINE

1. Information on the programme

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|-------------------------------------|---|
| 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 ¹⁾ | Bachelor of Science |
| 1.6. Specialization/Study programme | Agriculture |
| 1.7. Form of education | Full time |

2. Information on the discipline

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|---|-------------------------------|---------------|---|----------------------|------------|------------------------|---|----------|
| 2.1. Discipline name | Agricultural lands evaluation | | | | | | | |
| 2.2. Course coordinator | Prof.dr. Laura Paulette | | | | | | | |
| 2.3. Seminar/laboratory/project coordinator | Lecturer dr. Buta Mihai | | | | | | | |
| 2.4. Year of study | IV | 2.5. Semester | 1 | 2.6. Evaluation type | continuous | 2.7. Discipline status | Content ² Compulsoriness ³ | DS DI |

3. Total estimated time (teaching hours per semester)

| | | | | | |
|--|-----|---------------------------|----|-----------------------------------|------|
| 3.1. Hours per week – full time programme | 3 | 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 | | | | | 10 |
| 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 | | | | | 14 |
| 3.4.4. Tutorial | | | | | 2 |
| 3.4.5. Examinations | | | | | 8 |
| 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 ⁴ | 4 | | | | |

4. Prerequisites (if applicable)

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| 4.1. curriculum related | Pedology |
| 4.2. skills related | Knowledge regarding the components and functions of the edaphic system |

5. Conditions (if applicable)

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| 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 | The project is working on the study memoir pedological characterization of evaluation indicators, the forms for calculating the evaluation notes and drawing cartograms by use and suitability. Under the direct guidance of the practical framework, each student will carry out an individual activity with the laboratory materials made available and described in the practical works guide. Academic discipline is required throughout the duration of the work. |

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| Professional competences | <p>Knowledge of the criteria and indicators used in the evaluation of agricultural land.</p> <p>To understand the ways of identifying and interpreting the restrictive factors of the productive capacity of the soils</p> <p>To analyze and apply practically the importance of physical and chemical properties in obtaining agricultural production</p> <p>To know the properties of the soils in order to use them in accordance with the differentiated application of the cultivation technologies</p> <p>Providing professional advice in evaluating the productive capacity of agricultural lands and ways of improvement</p> |
| Transversal competences | <p>Demonstrate practical skills in identifying the productive capacity of agricultural soils / lands</p> <p>Demonstrate organizational capabilities specific to the field phase (data collection).</p> <p>To be able to organize the specific activities for the elaboration and preparation of the evaluation report through natural and enhanced reclamation of agricultural lands.</p> <p>To demonstrate the logic and organization in evaluating the indicators used in soil evaluation.</p> <p>To be able to offer farmers advice on how to manage the edaphic resource.</p> <p>To participate in research activities in the field.</p> |

7. Disciplines objectives (based on the cumulated specific competences)

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| 7.1. General objective | Acquiring knowledge of soil genesis and soil properties. |
| 7.2. Specific objectives | <p>Acquiring knowledge regarding the indicators used for the characterization of agricultural lands both under natural conditions and under the influence of improvement works</p> <p>To be able to draw up the spreadsheets for soil evaluation</p> <p>To be able to categorize the lands according to their suitability and favorability</p> <p>Be able to make recommendations based on cartographic interpretation.</p> <p>To know the soil and environmental factors that influence the quality and productivity of agricultural land</p> |

8. Content

| 8.1. COURSE Number of hours – 28 | Teaching methods | Observations |
|--|------------------|--------------|
| Definitions and concepts in mapping and soil remediation | Lecture | 1 lecture |
| Technical classifications. History and description | Lecture | 1 lecture |
| Romanian school of bonitare and the current International Classifications | Lecture | 1 lecture |
| Elements of soil mapping and elaboration of pedological studies The object of complex pedological studies The purpose and importance of the activity of mapping, reclamation and evaluation of agricultural lands | Lecture | 1 lecture |
| Purpose and objectives of mapping and reclamation studies of agricultural lands | Lecture | 1 lecture |
| Checking knowledge | Examination | Test |
| Horizons and diagnostic properties used in soil classification Mineral and organic horizons, Main horizons, Association horizons, Transition horizons, Diagnostic horizons, Diagnostic properties, Diagnostic parenting materials | Lecture | 2 lectures |
| Soil taxonomy system in Romania, SRTS 2012 Taxon formation and definition The classification of soils into taxonomic units | Lecture | 1 lecture |
| Methodology for the development of pedological studies The stages of the mapping study: the preparation phase, | Lecture | 2 lectures |

| | | |
|--|-------------|------------|
| phase. | | |
| Improvement of agricultural land Purpose, objectives and importance of bonitation Preparation of studies of bonitare | Lecture | 2 lectures |
| Checking knowledge | Examination | Test |

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| 8.2. PROJECT Number of hours – 28 Land evaluation in natural conditions Indicators used in land evaluation | Lecture | 2 works |
| Coefficients used in land evaluation | lecture | 1 work |
| Calculation of the land value (credit notes) | lecture | 2 works |
| Potency evaluation marks. Categorize of the lands into classes of pre-requisite | lecture | 1 work |
| Theoretical testing of knowledge by using grid and practical tests through determinations / interpretations of results | Test | 1 test |
| Case study: Cojocna Farm, USAMV Cluj-Napoca. Soil Sheet 1 - Argic Faeoziom (FZ ar). Soil Sheet 2 - Mollic colluvial Aluviosol (As co) Soil sheet 3 - Typical Preluvosol (EL ti) Soil sheet 4 - Eutric Gleiosol (GS eu) Soil Sheet 5 - Typical Solonet (SN ti). Soil sheet 6 - Limestone erodosol (ER ka) | Project work | 6 work |
| Testing of individual projects | test | 1 test |

Compulsory Bibliography:

1. Laura Paulette, Mihai Buta 2010- *Noțiuni teoretice și practice de cartare și bonitare a terenurilor agricole* Ed Risoprint Cluj Napoca, p 229.
2. Laura Paulette, 2008 – *Pedologie*, Editura Todesco, Cluj Napoca, 320 p.
3. Ioan Pacurar, Mihai Buta 2010- *Pedologie și bonitarea terenurilor agricole - lucrări practice* Ed. Risoprint Cluj Napoca, p 239.
4. Laura Paulette, 2007 – *Pedologie - Studiul solului în teren și laborator*, Ed. Todesco, Cluj-Napoca, 206 p.
5. BLAGA GH., FILIPOV F., LAURA PAULETTE, RUSU I., UDRESCU S., VASILE D. , 2008 – *Pedologie*. Editura Mega Cluj Napoca, 450 p.
6. Lupașcu Gh., M. Parichi, N. Florea, 1998 – *Dicționar de Știința și Ecologia solului*. Editura Universității Al. Ioan Cuza, Iași

Optional Bibliography:

1. Teaci D.1970 – *Bonitarea terenurilor agricole*. Ed. Ceres, București.
2. ICPA, 1986 - *Metodologia de elaborare a studiilor pedologice*. București.
3. Vlad V., 2001b- *Model general de evaluare a amplasamentului terenurilor agricole*. Știința Solului, București, vol.XXXV, nr.1-2, p. 141-150.

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 agricultural profile of the universities of the country and is supplemented annually based on new information published in the field and the debates with farmers, practitioners and specialists of the National Soil Science Society.

10. Evaluation

| Type of activity | 10.1. Evaluation criteria | 10.2. Evaluation type | 10.3. Percent of the final grade |
|---------------------------------|---|--------------------------------|----------------------------------|
| 10.4. Course | Answer to topic extracted Activity in discipline | exam | 60% |
| 10.5. Seminar/Laboratory | Results at testing sessions | periodic evaluation / colloquy | 40% |

10.6. Minimum performance standards

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.

- 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) **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. PhD Laura Paulette

Laboratory work/seminars coordinator
Lecturer PhD Mihai Buta



Approved by the
Department on
05.09.2019

Head of the Department
Assoc. prof. PhD Ovidiu Ranta

