Annex 6

DISCIPLINE DESCRIPTION

1. Information on the study programme

1.1 Academic institution	**UNIVERSITY OF ORADEA**
1.2 Faculty	**FACULTY OF ENVIRONMENTAL PROTECTION**
1.3 Department	**ENVIRONMENTAL ENGINEERING**
1.4 Field of study	**ENVIRONMENTAL ENGINEERING**
1.5 Cycle of study	**BACHELOR**
1.6 Study programme/Qualification	**ENGINEERING OF BIOTECHNICAL AND ECOLOGICAL SYSTEMS / ENGINEER**

2. Information on the discipline

2.1 Name of discipline		Soil Science II					
2.2 Course holder		Prof. PHD. SABĂU NICU CORNEL					
2.3 Seminar/Laboratory/Project holder		Prof.PHD SABĂU NICU CORNEL					
2.4 Year of study	III	2.5 Semester	V	2.6 Type of evaluation	Ex	2.7 Regime of discipline	C

(C) Compulsory; (O) Optional; (E) Elective

3. Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	4	out of which: 3.2 course	2	out of which 3.3 seminar/laboratory/project	2
3.4 Total hours in the curriculum	56	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	28

Time allotment	hours
Study assisted by manual, course support, bibliography and notes	23
Additional documentation in the library/ on specialised electronic platforms and in the field	9
Preparation of seminars/laboratories/ topics/reports, portfolios and essays	8
Tutorship	-
Examinations	4
Other activities.....	-

3.7 Total hours of individual study	**44**
3.9 Total hours per semester	**100**
3.10 Number of credits	4

4. Prerequisites (where appropriate)

4.1 curriculum	Exam promotion in the Soil Science I discipline
4.2 competences	General knowledge about soil science

5. Conditions (where appropriate)

5.1. related to course	PC, video projector
5.2. related to seminar/laboratory/ project	The specific equipment needed to carry out the practical work

6. Specific competences acquired	
Professional competences	▪ C1.1. Defining the fundamental concepts necessary for the application of environmental scientific theories and methodology. ▪ C1.5. Identification of scientific solutions for the implementation of professional and technological projects. ▪ C2.4. Qualitative and quantitative evaluation of natural phenomena and human activities on the quality of environmental factors
Transversal competences	▪ CT1. Identifying and respecting the norms of professional ethics and deontology, assuming responsibility for the decisions made and related risks ▪ CT2. Identifying roles and responsibilities in a multidisciplinary team and applying communication techniques and effective work within the team

7.Objectives of discipline (coming from the specific competencesacquired)

7.1 General objective	▪ The discipline is part of the category of field disciplines, with the objective of familiarizing students with the specific notions of soil science, the way soils are formed under the conditions of our country, the main classes and types of soils in our country
7.2 Specific objectives	Competencies regarding pedogenesis, soil properties and their taxonomy. ▪ Theoretical knowledge – Knowledge, understanding and easy use of basic concepts and methods specific to the field of soil science. ▪ Acquired skills – Effective use of the basic knowledge acquired in the course, for the correct explanation and interpretation of concepts and processes related to pedogenesis. ▪ Acquired skills – The ability to apply and use the knowledge acquired throughout the year, to solve problems related to soil properties and their taxonomy. ▪ Attitudinal - The ability to work in a team, responsible execution of work tasks.

8. Content*/

8.1 Course	Methods of teaching	No. of

		hours/Remarks
SOILS CLASSIFICATION - Russian naturalist classification; American classification; Romanian soilclassification; FAO - UNESCO classification; Romanian System of SoilTaxonomy, SRTS – 2003; Romanian System of SoilTaxonomy, SRTS – 2012	Interactive Lecture	2
ENTISOLS CLASS –Leptosols, Regosols, Arenosols (Psamosols)Fluvisoils (Aluviosols)	Interactive Lecture	2
MOLLISOLS CLASS – Kastanozems; Chernozems; Phaeozems; RendzicLeptosoils	Interactive Lecture	3
CAMBOSOILS CLASS - EutricCambisols; DystricCambisols	Interactive Lecture	2
LUVOSOILS CLASS - HaplicLuvisols; AlbicLuvisols; Planosols; Alisols	Interactive Lecture	3
PODZOLS CLASS - EnticPodzols; Podzols	Interactive Lecture	2
UMBRISOLS CLASS andANDOSOLS CLASS - Humic Umbrisols; Lepto-UmbricUmbrisols, Humic Leptosols; Andosols	Interactive Lecture	2
HIDRISOLS CLASS – Gleysols, Stagnicsols; Limnosols	Interactive Lecture	2
SALSODISOLS CLASS – Solonchaks, Solonetzs	Interactive Lecture	2
VERTISOLS CLASS -Pelosols; Vertisosols,	Interactive Lecture	2
HISTISOLS CLASS – Histosols.	Interactive Lecture	2
ANTHROSOLS CLASS - Anthtosols, Technosols		
SOIL MAPPING AND AGRICULTURAL LAND EVALUATION - Soil mapping, Agricultural land evaluation	Interactive Lecture	2

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2. Sabău N.C.,*Geneza Degradarea și Poluarea Solului, Partea I., Știința Solului – Geneza și Proprietățile solului, Ediția a II-a,*Editura Universităţii din Oradea, ISBN general 978-606-10-1767-6, ISBN volum 978-606-10-1768-3, pg.254, 2016;
3. Blaga Gh., Rusui., Urdescu S., Vasiled: - 1996- Pedologie - Ed. Didactică şi Pedagogică Bucureşti;
4. Oanea N., Rogobete Gh.,- 1977 - Pedologie generală şi ameliorativă. Ed. Didactică şi Pedagogică Bucureşti;
5. Rogobete Gh. – Ştiinţa Solului, Bazele ştiinţei solului. Ed. Mirton, Timişoara;
6. Sabău N.C. – 1997- Impactul Lucrărilor Hidroameliorative asupra Solurilor din Perimetrul Valea Ier. – Ed. Universităţi din Oradea;
7. Sabău N.C. Domuţa C. Berchez O. – 1999 – Geneza degradarea şi poluarea solului. – Ed. Universităţi din Oradea.
8. Sabău N.C. – 2008 – Poluarea Mediului Pedosferic, Ed. Univ. din Oradea,
9. Teaci D. – 1980- Bonitarea terenurilor agricole. Ed. Ceres Bucureşti;

8.2 Seminar	Methods of teaching	No. of hours/ Remarks

Bibliography

8.3 Laboratory		
Laborprotectionandthepresentation of thePedologyandSoilPollutionLaboratory.	Explanations, exemplification, dialogue, case study, video	2
Soil mapping	Explanations, exemplification, dialogue, case study	2

Collection and preparation of soil samples	Explanations, exemplification, dialogue, case study	2
Determination of soil texture	Explanations, exemplification, dialogue, translations	4
Determination of soil structure	Explanations, exemplification, dialogue, case study	4
Determination of soil moisture	Explanations, exemplification, dialogue, case study	2
Determination of soil density	Explanations, exemplification, dialogue, case study	2
Determination of soilporosityandcompaction	Explanations, exemplification, dialogue, case study	2
Determination of soilhydrophysicalindices	Explanations, exemplification, dialogue, case study, video	2
Determination of hydraulicconductivityandcapillaryascent	Explanations, exemplification, dialogue, case study, video	4
Determination of penetrationresistance	Explanations, exemplification, dialogue, case study, video	2
8.4 Project		

Bibliography

1. Sabău N.C. **–** *Metode pentru analiza solului- Pentru uzul studenílor- 2012, Editura Universităţii din Oradea, pp. 338, ISBN 978-606-10-0946-6,;*
2. Blaga Gh., Bunescu V. – 1999 – Lucrări practice la pedologie, Tipo Agronomia, Cluj-Napoca;
3. Brejea R., Domuţa C. – 2011 – Practicum de Pedologie, Editura Universităţii din Oradea;
4. Canarache A., Şerbănescu I., Teaci D., Savapol L. – 1967 – Îndrumător pentru studiul solului pe teren şi în laborator, Ed. Agrosilvică, Bucureşti;
5. Ciobanu Gh. – 2002 - Metode agrochimice de analiză interpretare şi îmbunătăţire a fertilităţii solului, Ed. Universităţii din Oradea;
6. Domuţa, C. şi colab., 2011, *Practicum de monitoring al mediului*, Edit. Univ. din Oradea;

* The content, respectively the number of hours allocated to each course / seminar / laboratory / project will be detailed during the 14 weeks of each semester of the academic year.

9. Corroboration of discipline content with the expectationsof the epistemic community, professional associations and representative employers from the field corresponding to the study programme

- By learning the theoretical concepts and dealing with the practical aspects included in the discipline, students acquire a consistent body of knowledge, in accordance with the

skills required for the occupations provided in the RNCIS Grid

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	Exam	Oral	67 %
10.5 Seminar			
10.6 Laboratory	Periodic check	Grid test	33 %
10.7 Project			
10.8 Minimum standard of performance			
- The minimum standard of performance assumes the partial acquisition, in proportion of 50%, of the basic knowledge of the discipline studied.			

Date of completion | Signature of course holder** | Signature of seminar laboratory/project holder **

25.05.2023 | **Prof. PHD SABĂU NICU CORNEL** nicusabau@yahoo.com | **Prof. PHD SABĂU NICU CORNEL** nsabau@uoradea.ro

Date of approval in the department | Signature of the Head of Department

25.05. 2023 | **Prof. PHD. SABĂU NICU CORNEL** nsabau@uoradea.ro

Dean signature

Asoc Prof. PHD MAERESCU CRISTINA MARIA
cristina_maerescu@yahoo.com

** - Name, first name, academic degree and contact details (e-mail, web page, etc)will be specified.

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Signature of the Head of Department***

.....

Dean Signature***

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*** - Name, first name, academic degree and contact details (e-mail, web page, etc) of the academic entity beneficiary of the Discipline Outlinewill be specified.

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