

ERASMUS MUNDUS MASTER PROGRAMME IN SOIL SCIENCE – emiSS
2020-2021 ACADEMIC YEAR - MODULE SYLLABUS

Name of course:	
<i>ECOPEDOLOGY,</i>	
ECTS	6
Type of Course	<i>Facultative</i>
Form of Examination	<i>Written Examination</i>
Prerequisites	<i>Soil Science basic course</i>

Field of Study:

Agriculture / Soil Science / Environmental Science

Education profile	<i>Academic</i>
Code of study form and level of education	<i>Master of Science</i>
Academic year/Semester	<i>First year/ Spring Semester</i>
Specialization	<i>Agriculture</i>
Language of education	<i>English</i>

The lecturer module:

The name of faculty	<i>University of Agriculture in Krakow, Faculty of Agriculture and Economics</i>
The name of department	<i>Department of Soil Science and Agrophysic</i>

Educational outcomes:

Description of the learning effect

KNOWLEDGE - student knows and understands:

1	<i>Student has in-depth and structured knowledge about the role of soil in forming biodiversity.</i>
2	<i>Student knows the relationship between organisms and their communities and soil properties.</i>
3	<i>Student knows the terminology used in habitat studies.</i>

SKILLS - the graduate can

1	<i>Student can recognize plant indicator species for different reaction and water condition soils</i>
2	<i>Student has the ability to formulate reasonable judgments based on data from different sources</i>
3	<i>Student fluently uses scientific literature in the field of environmental protection, reads and understands complicated scientific texts in English</i>
4	<i>Student can describe the habitat catena</i>

SOCIAL COMPETENCES - graduate:

1	<i>Student is aware of the importance of soil cover and responsibility for its maintenance in a condition ensuring the stability of ecosystems.</i>
2	<i>Student is aware of the social role of the master of soil science and responsibility related to decisions taken as part of professional activity based on professionalism, respect for the law, rules of professional ethics and social norms, including responsibility for the quality of the environment and its proper development</i>
3	<i>Student understands the need to learn throughout life, can inspire and organise the learning process of other people</i>

Course objectives and content:

The aim of the course is to know the role of soil biodiversity and impact on relationships between organisms and their communities and soil properties.

Course contents: soil as a multifunctional component of the natural environment, characteristics of the most important groups of soil mesofauna, with particular emphasis on the activity and intensity with which they affect the soil, mutual relations between soil and plant and animal organisms, soils and vegetation of various types of habitat forests and meadows in the lowlands and in mountains, katena habitat and their description in the field.

SOIL IN THE ENVIRONMENT – ECOPEDELOGY, PROTECTION AND RECLAMATION OF SOILS AND GEOLOGICAL HERITAGE

36 hours

Subject of lecture	1	<i>Soil as a multifunctional component of the natural environment. Soil properties that determine their role in ecosystems</i>
	2	<i>Impact of soil cover on the creation of habitat conditions for plants</i>
	3	<i>Soils of meadow ecosystems</i>
	4	<i>Characteristics of soil and meadow vegetation of oak-hornbeam habitats</i>
	5	<i>Characteristics of soil and meadow vegetation of riparian habitats</i>
	6	<i>Characteristics of soil and meadow vegetation in swamp habitats. Habitats Kateny.</i>
	7	<i>Characteristics of soil and forest plant communities.</i>
	8	<i>Characteristics of soil and forest plant communities in mountain regions</i>
	9	<i>Midterm exam</i>
	10	<i>Biodiversity of soil animals and its function (soil microorganisms)</i>
	11	<i>Biodiversity of soil animals and its function (soil fauna)</i>
	12	<i>Biodiversity of soil animals and its function (function of soil biota)</i>
	13	<i>The role of biotic interactions in shaping soil properties (e.g. nitrogen and carbon cycle, soil porosity)</i>
	14	<i>Human impact on soil properties. Soils under intensive cultivation (intensive tillage, long-term fertilization, pesticide contamination) – field soils and soils of greenhouses.</i>
	15	<i>Soils in the natural environment and European landscapes</i>
	16	<i>Final exam</i>

The methods of verification and assessment criteria and principles

Written test exam, for passing an examination at least 60% of questions should be answered correctly. The contribution of the evaluation of the lectures in the final grade is 50%.

The methods of verification and assessment criteria and principles	<i>A written field study report</i>
Literature:	
Recommended Textbooks	<ol style="list-style-type: none"> Hillel, Daniel. <i>Soil in the environment: crucible of terrestrial life</i>. Elsevier, 2007. Ciarkowska K., Gąsiorek M., Mazurek R., Zaleski T. <i>Management in protected areas and protection of biodiversity in rural areas, w: Agroecology : monograph / Ropek Dariusz (red.), 2014, Publishing House of the University of Agriculture, ISBN 978-83-64758-06-5, ss. 29-54</i> Zarzycki K., Trzcińska-Tacik H., Różański W., Szelaq Z., Wołek J., Korzeniak U. 2002. <i>Ekologiczne liczby wskaźnikowe roślin naczyniowych Polski. W. Szafer Institute of Botany, PAN, Kraków. Important chapter translated in English</i> Sikorska E. 1999. <i>Siedliska leśne. Skrypt, Akademia Rolnicza im. Hugona Kollataja, Kraków. Important chapter translated in English</i>
Complementary	<i>Publication recommended during classes by teacher</i>

Structure of learning outcomes:

The area of study: soil science, environmental science, agriculture, natural resources **6 ECTS***

The structure of student activity:

<i>Learning Activities</i>	<i>Amount</i>	<i>Time (h)</i>	<i>Total work-load (h)</i>
Participate in lecture	12	3	36
Participate in midterm exam	1	2	2
Individual study for midterm exam	5	3	15
Individual study for lectures	12	1	12
Laboratory study	10	3	30
Quiz			
Field classes	2	12	24
Assignment	11	2	22
Participate in final exam	1	2	2
Individual study for final exam	5	3	15
Literature critical review			
Oral exam			
Individual study for problem solution	11	2	22
Consultations			



Participate in researches			
Mandatory practices and internships			
	Total workload (h)		180

*ECTS Credits = Total Workload (Hours) / 30 (Hours/1 ECTS) = 180 / 30 = 6 ECTS

Name Surname
of Lecturer:

Sign:.....

Date: