ERASMUS MUNDUS MASTER PROGRAMME IN SOIL SCIENCE – emiSS

2020-2021 ACADEMIC YEAR - MODULE SYLLABUS

Name of course:	
ANTHROPOGENIC SOILS	
ECTS	*6*
Type of Course	*Obtional*
Form of Examination	*Written Examination*
Prerequisites	*Basic knowledge of geography.*

Field of Study:	
Agriculture / Soil Science / Environmental Science	
Education profile	*Academic*
Code of study form and level of education	*Master of Science*
Academic year/Semester	*First year/ Spring Semester*
Specialization	*Agriculture*
Language of education	*English*

The lecturer module:	
The name of faculty	*University of Agriculture in Krakow, Faculty of Agriculture and Economics*
The name of department	*Department of Soil Science and Agrophysic*

Educational outcomes:	
Description of the learning effect	
KNOWLEDGE - student knows and understands:	
1	*Student knows the properties and limitations of soil function changed as a result of human activity*
2	*Student has knows the classification of anthropogenic soils.*
3	*Student understands the threats to soils in urban and intensively used agricultural areas.*
SKILLS - the graduate can	
1	*Student can predict the effects of making decisions harmful to the soil environment.*
2	*Student knows how to distinguish anthropogenic transformed soils from natural ones.*
3	*Student can to describe chemical and physical properties in anthropogenic soils. ses*
SOCIAL COMPETENCES - graduate:	
1	*Student can interact and work in a group, and takes part in the discussion*

2	*Student is aware of the function and protection of the Earth's surface for the sustainable development of the world*
	Student is aware of the impact of decision making under soil resource management so as to minimize the negative impact of human activities.

Course objectives and content:

The aim of the course is to present students with morphological, physico-chemical, micromorphological and biological properties of soils strongly influenced by human activity and with the role of soil in urban ecosystems other than in agricultural areas.
The scope of subject studies includes the classification of anthropogenic soils, soil transformations in areas of intensive agricultural use, industrial and urban areas. Determination of factors leading to the formation of anthropogenic soils. The problem of soil pollution in cities.

		ANTHROPOGENIC SOILS *36 hours*
Subject of lecture	*1*	*Human as a soil forming factor.Classification of anthropogenic soils.*
	2	*Soil transformation in urban areas.*
	3	*Change in land use, anthropogenic substrates, mechanical, chemical and biological transformations within the soil profile.*
	4	*Records of development and urban areas in the soil profile. Artefacts in soils profiles.*
	5	*Soil pollution in urban areas.*
	6	*Midterm exam*
	7	*Soils contaminated by industry (heavy metals, petroleum products, dioxins*
	8	*Characteristics of anthrosols on the example of morphological and physico-chemical properties of intensively used agricultural soils: rice soils, polders, irrigated soils and soils with vegetables growing in foil tunnels and soil*
	9	*Characteristics of technosols (industrial earth soils) on the example: soils contaminated with toxic materials, heaps of heaps after zinc and lead extraction, hard coal, sealed soils and soils changed by sulfur mining*
	10	*Impact of anthropopressure on intensively used agricultural lands*
	11	*The impact of anthropopressure on the micromorphological properties of humus levels of anthropogenic soils and their biological activity*
	12	*Salinization, alkalization in urban soil*
	13	*Water management in urban soil*
	14	*Final exam*
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%.*

Literature:

Recommended Textbooks	1- Bullock P., Gregory P. J. 1991. Soils in the Urban Environment. Blackwell, Oxford, ss. 174 2- Hiller D. A., Meuser H. 1998. Urbane Böden. Springer Verlag, Berlin Heildelberg, ss. 161 3- Class book edited by lecturer.

Complementary	*Current publications in scientific journals related to course issues and some course materials supported by lecturer.*

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

The structure of student activity:			
Learning Activities	***Amount***	***Time (h)***	***Total work-load (h)***
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: .....