

Course name: Soil quality factors and assessment

COURSE NAME (capital letters) SOIL QUALITY FACTORS AND ASSESSMENT

ECTS	4
Course status	complementary - obligatory
Course final assesement/evaluation of outcomes	exam, evaluation of student presentations, written report from field classes
Prerequisites	basic information on soil science

Main field of study: Agriculture, Environmental protection

field of study name (capital letters) AGRICULTURE, ENVIRONMENTAL PROTECTION

Profile of study	General-academic
The code of studies (education level)	SI/SM (bachelor/master)
Semester of studies	summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Agriculture and Economics
Name of department offering the course	Department of Soil Science and Agrophysics,
Course coordinator	Krystyna Ciarkowska

Learning outcomes of the course:

Symbol of outcome	Description of learning outcome	Reference to	
		main field of study outcomes	discipline#
KNOWLEDGE – student knows and/or understands:			
SQFA_W1	the importance of the soil quality	OŚ2_W11	RR
SQFA_W2	relationship between soil properties and anthropogenic stress	OŚ2_W15	RR
SQFA_W3	the need of enlarging the knowledge on soils and methods used in their examination	RO2_W01	RR
SKILLS – student is able to:			
SQFA_U1	use the basic laboratory technique useful in environmental protection	OŚ1_U08	RR
SQFA_U2	evaluate the quality of soil and the possibility of use	OŚ1_U14	RR
SQFA_U3	performs simple scientific experiments on his own or under the supervision of a tutor, analyzes their results and draws conclusions	RO1_U06	RR
SOCIAL COMPETENCE- student is ready to:			
SQFA_K1	is sensitive to the conservation of environmental resources and understands the need to	OŚ1_K01	RR
SQFA_K2	training and self-improvement in the field of the profession and understands the need for lifelong learning	OŚ1_K04	RR
SQFA_K3	thinking and acting in the entrepreneurial way	OŚ1_K06	RR

Teaching contents:

Lectures	25	hours
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Topics of the lectures	<ol style="list-style-type: none"> 1. Introduction, objectives, scope, basic terms, and relation to other subjects. Course schedule. 2. Main factors shaping soils quality 3. Soil quality indicators – types and importance 4. Reasons for assessing soil quality 5. Main biological soil quality indicators and ways of their determination 6. Main physical soil quality indicators and ways of their determination 7. Main chemical soil quality indicators and ways of their determination 8. . Soil quality index 9. Human impact on the soil quality 10. Characteristics of soils under intensive cultivation (intensive tillage, long-term fertilization, pesticide contamination) – field 11. Soils industrially polluted 12. Characteristics of urban soils. 13. Classification of soils (according to WRB) transformed by human activity.
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Accomplished learning outcomes	OŚ2_W11, OŚ2_W15, RO2_W01
Verification methods, rules and criteria of outcome assessment	<i>Written exam, to pass the exam one must answer at least 60% of questions correctly. In the overall assessment 60% is the assessment of the lectures</i>

Classes **15** **hours**

<p>Soil texture, structure and pH assessment in view of their effect on soil quality</p> <p>Soil buffer capacity – measurement and calculation</p> <p>Establishment of visual soil quality indicators in the field – examination of 3 soil profiles</p> <p>Calculating soil quality index and comparison of soils of different qualities</p>	
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Accomplished learning outcomes	OŚ1_U06, OŚ1_U08, OŚ1_U14, RO1_U06, O1_K01, OŚ1_K04, OŚ1_K06
Verification methods, rules and criteria of outcome assessment	<i>to have a positive mark, it is necessary to make a presentation and a report from the field part. A share of classes in the overall assessment is 40%</i>

Seminars **hours**

Topics of seminars	
Accomplished learning outcomes	<i>symbol of learning outcomes of the seminars</i>

Verification methods, rules and criteria of outcome assessment	
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References:

Basic	1.LBrady N.C., Weil R.C. 2007. <i>The Nature and Properties of Soil. Edition 14, Prentice Hall, pp. 876.</i> 2. Bullock P., Gregory P.J. <i>Soils in the urban environment. Blackwell, Oxford, 1991</i>
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Supplementary

1. Hillel D. 2007. *Soil in the environment, Crucible of terrestrial life*. Academic Press (Elsevier), San Diego, pp. 307. 2. Goudie, Andrew S. *The Human Impact on the Natural Environment: Past, Present,*

Structure of learning outcome

Discipline: # RR

4

ECTS**

Structure of student activities:

Contact hours	46	hours	1,8	ECTS**
including:				
lectures	25*	hours		
classes and seminars	15*	hours		
consultations	4	hours		
participation in research	0	hours		
mandatory traineeships	0	hours		
participation in examinations	2	hours		
e-learning	...	hours	...	ECTS**
student own work	55	hours	2,2	ECTS**

Syllabus valid from the academic year 2021/2022

*** where 10 hours of classes = 1 ECTC (in case of 15 h → 2 ECTS)**

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes

academic discipline code: RR - agriculture and horticulture