

56S1-ZGS

SOIL RESOURCES OF THE WORLD AND THEIR
PROTECTION

ECTS: 3.0

HOURS PER SEMESTER/WEEK: LECTURES: 15/1; CLASSES: 30/2

FIELD OF THE STUDY: Environmental protection

Level of study: First-cycle (Engineer's degree) program

Course status: optional *

Year of the study: III

COURSE CONTENTS

LECTURES: Soil-forming factors and soil landscapes on a global scale. World soil classification according to the World Soil Resources Classification - WRB (FAO-UNESCO systematics) and national classification. Databases on soil resources of the world and Europe. Soil processes and soil properties of different regions. Agricultural use of soil resources in different regions of the world. Soil degradation processes and soil protection problems. Analysis of soil resources in selected countries and regions of the world.

CLASSES: Analysis of soil resources in selected countries and regions of the world (project). Analysis of soil-forming factors prevailing in the selected country: – geological structure (parent rocks, relief, hydrography) – climatic conditions (precipitation, temperature, potential evaporation, seasons) – vegetation cover – human activity – time (age of soils). Based on the available cartographic materials and information on the zonality of soil-forming factors, a schematic soil map of the selected area should be presented, taking into account the WRB classification and/or one of the national taxonomies (according to the area under study). Present the units of soil taxonomy, give the occurring diagnostic horizons, and describe the soil-forming processes. Present the soil resources of the area, including agricultural suitability and plant cultivation opportunities. Pay attention to features different from Polish agriculture. Discuss the main risk factors and soil degradation processes in the discussed country.

EDUCATIONAL PURPOSE: Knowledge and assessment of soil resources on a global scale. Learning about the causes of soil degradation and the problems of their protection.

LEARNING OUTCOMES

Knowledge. The student knows the factors and processes that shape soils in different regions of the world. He learned the principles of soil classification according to the WRB system.

Skills. Can explain the relationship between environmental features and soils on a global scale.

Social competences. Appreciates the diversity of soil habitats around the world

TEACHING FORMS AND METHODS

Lectures. Informative lecture with a multimedia presentation

Classes. Exercises with the use of cartographic materials (thematic and soil maps)

FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES

Lectures. Written test - The student gives written answers to the questions asked.

Classes. Project classes - A project on the analysis of soil resources in selected countries and regions of the world.

BASIC LITERATURE

1) Falkowski J., Kostrowicki J., Geografia rolnictwa świata., Wyd. Wydawnictwo Naukowe PWN, Warszawa, 2001. 2) Bednarek R., Prusinkiewicz Z., Geografia gleb., Wyd. Wydawnictwo Naukowe PWN, Warszawa, 1997. 3) Mocek A. (red.), Gleboznawstwo, Wyd. Wydawnictwo Naukowe PWN, Warszawa, 2015. 4) Brożek S. (Red.), Gleby w środowisku przyrodniczym i krajobrazach Europy, Wyd. Wydawnictwo Uniwersytetu Rolniczego w Krakowie, 2013. 5) IUSS Working Group WRB. World Reference Base for Soil Resources. International soil classification system for naming soils and creating legends for soil maps. 4th edition. International Union of Soil Sciences (IUSS), Vienna, Austria, 2022. 6) Jones A., Montanarella L., Jones B (eds.) Soil Atlas of Europe. European Commission, Publication Office of the European Union, Luxembourg, 2005.

ADDITIONAL LITERATURE

1) Olaczek R. (red.), Zasoby glebowe i roślinne. Użytkowanie, zagrożenia, ochrona., Wyd. PWRiL, Warszawa, 1988. 2) Uziak S., Klimowicz Z., Elementy geografii gleb i gleboznawstwa., Wyd. Wydawnictwo UMCS, Lublin, 2000. 3) Makowski J., Geografia fizyczna świata. Wyd. Wydawnictwo Naukowe PWN, Warszawa, 2004. 4) Zech W., Schad P., Hintermaier-Erhard G., Soils of the World. Springer-Verlag, Berlin, Germany, 2022. 5) Soil Survey Staff. Keys to Soil Taxonomy. (12th ed.) US Department of Agriculture.

THE TEACHER/TEACHERS CONDUCTING THE CLASSES:

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