

01S1-GLEBI

SOIL SCIENCE I

ECTS: 3.0

HOURS PER SEMESTER/WEEK: LECTURES: 20/1; CLASSES: 30/2

COURSE CONTENTS

LECTURES: Definition of soil science, role and functions of soil. Geological aspects of soil formation. Definitions of geosphere, lithosphere, soil forming factors and processes. Influence of soil-forming factors on the development of soils. Soil morphology, soil profile, soil structure, soil colour, physical properties of soils and their relation to soil quality. Soil water retention properties. Soil organic matter – sources, content, role. Soil chemical properties: soil reaction, soil sorptive properties, content of macro- and microelements in soils. Main threats to soil, soil degradation and protection. Soil classifications used in Poland.

CLASSES: Laboratory activities: soil texture, soil structure, soil colour, bulk density and porosity, soil water retention properties, soil reaction, nutrient availability, ion exchange, soil organic matter content, soil hydrophobicity. Recommendations for soil conservation and management in relation to soil physical and chemical properties.

EDUCATIONAL PURPOSE: Develop knowledge and understanding of the basic soil chemical, physical, and biological properties, soil classification and environmental impact of soil use.

LEARNING OUTCOMES

Knowledge. The student has elementary knowledge of the basic soil properties, role of soils as well as positive and negative aspects of soil use.

Skills. The student is able to examine basic soil physical and chemical properties, and is able to assess the quality of soil.

Social competences. The student is aware of his knowledge and understands the need for continuous training. He/she prepares responsibly for his/her tasks and can work in a team.

TEACHING FORMS AND METHODS

Lectures. Information lecture with multimedia presentation.

Classes. Laboratory activities.

FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES

Lectures. Written test - credit with a grade.

Classes. Presentation - credit with grade.

BASIC LITERATURE

1) Soil Atlas of Europe (online), 2) Soil analysis manual (online)

ADDITIONAL LITERATURE

THE TEACHER/S CONDUCTING THE CLASSES:

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