

01S1-GLEBI

SOIL SCIENCE I

ECTS: 3.0

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

FIELD OF THE STUDY: Agriculture

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

Course status: obligatory *

Year of the study: I

COURSE CONTENTS

LECTURES: Definition of soil science, role and functions of soil. Geological aspects of soil formation. Definitions of the geosphere, lithosphere, soil forming factors, and processes. Influence of soil-forming factors on the development of soils. Soil morphology, soil profile, soil structure, soil color, 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, the content of macro- and micronutrients in soils. Soil agricultural classes. Main threats to soil, soil degradation. Soil classifications.

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 agricultural use, 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. Informative 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/TEACHERS CONDUCTING THE CLASSES:

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