

Study Programme: Agricultural engineering and information systems
Course Unit Title: Soil science
Course Unit Code: 19.URV007
Name of Lecturer(s): Vladimir I. Ciric, Associate professor
Type and Level of Studies: Bachelor Academic Degree
Course Status (compulsory/elective): Compulsory
Semester (winter/summer): Summer
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): Face-to-face
Number of ECTS Allocated: 6
Prerequisites: None
<p>Course Aims:</p> <p>This course is designed to introduce students with properties of soil, processes of genesis, evolution, causes of variability and laws of geographical distribution of land cover, as well as classification of soil.</p>
<p>Learning Outcomes:</p> <p>After passing this course, students will expand knowledge of soil science that will allow them to understand problems related to soil in intensive agriculture.</p>
<p>Syllabus:</p> <p><i>Theory:</i> Introduction lecture, Minerals and rocks as a material for soil forming, Morphological properties of soil, Physical properties of soil, Chemical properties of soil, Soil as a dispersion system, Mechanical composition of soil, Clay, Organic matter, Soil colloids, Organo-mineral complex, Porosity, Water and water properties of soil, Heat and thermal properties of soil, Air and air conditions of soil, Elements that are part of pedosphere, Sorption capacity, Soil solution, Reaction (pH), Acidity and alkalinity of soil, Buffer capacity and oxidation-reduction potential, Biological properties of soil, Genesis of soil, Systematisation and classification of soil</p> <p><i>Practice:</i> Primary– petrogenic and secondary minerals, Igneous rocks, Sedimentary rocks, Metamorphic rocks, Field research of soil, Soil density, Mechanical composition of soil, Water permeability and capillary rise, Soil plasticity, Determination of humus in soil, Determination of CaCO₃, Determination of active soil acidity, Determination of potential soil acidity and required amount of lime agent for improvement of acidic soils, Determination of characteristic of adsorption complex, Determination of easily soluble salts in soil and required amount of gypsum for improvement of alkaline soils. Field work: Introduction of different parent materials and profiles of the most common soil types in Vojvodina.</p>
<p>Required Reading:</p> <ol style="list-style-type: none"> 1. Aleksandar Kukin, Vladimir Hadžić, Ljiljana Nešić, Milivoj Belić: Agrogeologija, Poljoprivredni fakultet, Novi Sad, 2007. 2. Nikola Miljković: Osnovi Pedologije, Prirodno-matematički fakultet, Novi Sad 1996. 3. Aleksandar R.Đorđević, Svjetlana B. Radmanović: Poljoprivredni fakultet, Beograd 2016. 4. Goran J. Dugalić, Boško A. Gajić: Pedologija, Univerzitet u Kragujevcu, Agronomski fakultet, Čačak, 2012. 5. Milivoj Belić, Ljiljana Nešić, Vladimir Čirić: Praktikum iz pedologije, Poljoprivredni fakultet Novi Sad, 2014. 6. R. E. White: Principles and practice of soil science. Blackwell publishing, 2006. 7. M.R. Ashman and G. Puri: Essential soil science, Blackwell publishing, 2006.

8. Hillel, D. Introduction to Environmental Soil Physics, Elsevier, Amsterdam, Netherlands, 2004.

Weekly Contact Hours:

Lectures: 4

Practical work: 2

Teaching Methods:

Lectures, Practice/ Practical classes, Consultations, study

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	30
Practical work	10	oral exam	30
Preliminary exam(s)	20	
Seminar(s)			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.