



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Izbrana poglavja iz ekologije tal
Subject Title:	Selected Topics in Soil Ecology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Doktorski študij Ekološke znanosti / Doctoral Study Ecological Sciences		Izbirni 1 ali 2 ali 3	2 ali 3 ali 4 ali 5

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
5				5	140	5

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Poznavanje organizmov in ekologije na ravni univerzitetnega programa

Prerequisites:

Knowledge of organisms and ecology at graduate level

Vsebina:

Obravnavana so izbrana poglavja iz naslednjih sklopov.

Tla so plast kopenskih ekosistemov z najintenzivnejšimi procesi razkrajanja odmrlih organskih snovi v teh ekosistemih. Predstavljeni so osnovni klimatoconalni tipi tal. Specializirana živa bitja tal zasedajo številne ekološke niše, v procesih pretvorbe snovi veskozi sodelujejo zlasti bakterije in glive. Talne živali intenzivno sodelujejo pri razkosovanju večjih kosov, skeletiranju listov ter mešanju in rahljanju tal. Razložen je proces humifikacije in vloga posameznih sestavin tal za njihove lastnosti. Tla so obravnavana ekološko, izpostavljena je živa komponenta tal. Podan je pregled osnovnih tipov tal in glavnih skupin organizmov v njih. Predstavljene so značilnosti edafobiontov, vključno z njihovimi posebnimi prilagoditvami na življenje v tleh ter njihovimi ekološkimi nišami.

Contents (Syllabus outline):

Selected topics in the following chapters are discussed.

Soils are a stratum of terrestrial ecosystems characterized for their most intensive decomposition processes within these ecosystems. The essential climatoconal soils are presented. Specialized soil organisms possess several ecological niches, while the bacteria and fungi are throughout intensively engaged in the soil processes. Edaphic animals are engaged in cutting up bigger particles, skeletonizing leaves, mixing soil particles and making them loose. The humification process is discussed, as well as the role of each soil compartment contributing to the unique properties of soils. Soils are discussed in the ecological point of view, stressing their biota. A review of the basic soil types and the representative organisms within them are given. The characteristics of the edaphobionts, their special adaptations to the life within soils, and their ecological niches are presented.

Temeljni študijski viri / Textbooks:

- Coleman, D. C., Crossley, D. A. Jr., P. F. Hendrix, 2004: Fundamentals of soil ecology. Alesvier Acad. Press.
- Mršič, N., 1997: Živali naših tal. Tehniška založba Slovenije.
- Stritar, A., 1990. Krajina, krajinski sistemi. Raba in varstvo tal v Sloveniji. Partizanska knjiga, Ljubljana: 1990.
- Vovk Korže, A., F. Lovrenčak, 2004: Priročnik za spoznavanje prsti na terenu. Ljubljana; Maribor: Filozofska fakulteta Univerze v Ljubljani, Oddelek za geografijo.
- Vrščaj, B., T. Prus, F. Lobnik, 2005. Soil information and soil data use in Slovenia. V: Jones, R. J. A., B. Houšková, P. Bullock, L. Montanarella (ur.). Soil resources of Europe, (European Soil Bureau Research

Report, No. 9, EUR 20559 EN). 2nd ed. Luxembourg: Office for Official Publications of the European Communities.

- Wall, D. H., 2004: Sustaining biodiversity and ecosystem services in soils and sediments. Island Press, Washington.
- Izbrani članki iz revij/Selected papers from the journals Pedobiologia, European Journal of Soil Biology itd./etc.

Cilji:

- Študenti se podrobno seznanijo s tlemi kot kompleksnim sistemom
- Podrobno spoznajo biotske pedogenetske procese
- Podrobno spoznajo vlogo talnih organizmov v teh procesih

Objectives:

- Students learn in detail about soils as complex systems
- Students get advanced insights of biotic pedogenetic processes
- Students get advanced knowledge about the role of edaphic organisms in those processes

Predvideni študijski rezultati:

Znanje in razumevanje:

- Podrobno razumejo biotske pedogenetske procese
- Prepoznajo edafomorfoze

Prenesljive/ključne spretnosti in drugi atributi:

- Znajo oceniti ekološko stanje v določenem talnem habitatu
- Znajo načrtovati zahtevne raziskave in poskuse na edafobiontih in predvideti rešitve aktualnih problemov

Intended learning outcomes:

Knowledge and Understanding:

- They understand in detail biotic pedogenetic processes
- They recognize edaphomorphoses

Transferable/Key Skills and other attributes:

- They can estimate the ecological conditions within a selected soil habitat
- They can conduct the top-level investigations within selected soil habitats, and to provide solutions of actual problems

Metode poučevanja in učenja:

- Predavanja
- Seminar
- Laboratorijske vaje
- Terenske vaje
- Samostojno delo

Learning and teaching methods:

- Lectures
- Seminar
- Laboratory exercise
- Field work
- Individual work

Načini ocenjevanja:

- Praktični kolokvij iz reševanja izbranega ekološkega problema tal
- Pisni izpit

Delež (v %) /
Weight (in %)

50 %

50 %

Assessment:

- Practical partial exam of searching a solution of a selected ecological soil problem
- Written exam

Materialni pogoji za izvedbo predmeta :

- **Multimedijska predavalnica**
- **Mikroskopirnica**

Material conditions for subject realization

- *Lecture hall for multimedia presentations*
- *Microscope Practicum*

Obveznosti študentov:

(pisni, ustni izpit, naloge, projekti)

- Praktični kolokvij iz reševanja izbranega ekološkega problema tal
- Pisni izpit

Students' commitments:

(written, oral examination, coursework, projects):

- Practical partial exam of searching a solution of a selected ecological soil problem
- Written exam