



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Ekologija tal
Course title:	Soil Ecology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Univerzitetni študijski program, Biologija in ekologija z naravovarstvom, 2.stopnja		1. ali 2.	1. ali 2.
Postgraduate study program, Biology and Ecology with Nature Conservation, 2 nd cycle		1st or 2nd	1st or 2nd

Vrsta predmeta / Course type

Izbirni / Elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15	5		15	10	135	6

Nosilec predmeta / Lecturer:

Nina Šajna

Jeziki /

Languages:

Predavanja /

Lectures:

Slovenščina/ Slovenian

Vaje / Tutorial: Slovenščina/ Slovenian

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

Jih ni.

Prerequisites:

None.

Vsebina:

- Pomen ekologije tal za človeka
- Značilnosti tal
- Tla kot habitat
- Pomen rastlin za tla
- Rizosfera

Content (Syllabus outline):

- Importance of soil ecology to society
- Soil properties
- Soil as a habitat
- The importance of plants for soil
- Rhizosphere

- Ekološka vloga talnih organizmov
- Pestrost talnih organizmov
- Razgradnja
- Vplivi upravljanja s tlemi na dinamiko nutrientov v tleh
- Klimatske spremembe in ekologija tal

- Ecological role of soil organisms
- Diversity of soil organisms
- Decomposition
- Interactions among soil management and nutrient dynamics
- Climate change and soil ecology

Temeljni literatura in viri / Readings:

Temeljna literatura / Basic readings:

Coleman D.C., Callaam M.A.Jr., Crossley D.A.Jr., , 2018, Fundamentals in Soil Ecology, 3rd edition, Elsevier (in druge izdaje / and other editions)

Priporočena literatura/ Recommended literature:

- Lavelle P., Spain A.V., 2001, Soil Ecology, Springer
- Mršič N., 1997, Živali naših tal, Tehniška založba Slovenije

Cilji in kompetence:

- Študenti ovrednotijo tla kot pomemben in kompleksen sistem.
- Pojasnijo osnovne pedogenetske procese.
- Kritično ovrednotijo vlogo rizosfere.
- Spoznajo vlogo talnih organizmov v teh procesih.
- Samostojno zasnujejo in izvedejo poskus dekompozicije.

Objectives and competences:

- Students evaluate why the soil represents an important and complex system.
- Students explain the basic processes.
- Students critically evaluate the importance of rhizosphere.
- Students get the knowledge about the role of edaphic organisms in those processes.
- Independently design and implement experiments about decomposition.

Predvideni študijski rezultati:

Po uspešno opravljeni učni enoti naj bi bili študenti zmožni:

- Razložiti abiotska in biotske komponente tal ter opredeliti odnose med njimi;
- Pojasniti pomen rastlin za tla;
- Pojasniti vloge rizosfere;
- Pojasniti dekompozicijo;
- Primerjati povezave med talno biodiverziteteto in ekologijo tal.

Intended learning outcomes:

By the end of this course students should be able to:

- Explain abiotic and biotic components of the soil habitat and their interactions;
- Explain the importance of plants for soil;
- Explain the role of rhizosphere;
- Explain decomposition;
- Compare relations between soil biodiversity and soil ecology.

Metode poučevanja in učenja:

- Predavanja
- Seminar
- Terenske vaje
- Laboratorijske vaje
- Individualno delo

Learning and teaching methods:

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

Načini ocenjevanja:

Delež

Assessment:

(v %) /
Weight
(in %)

Način (pisni izpit, ustno izpraševanje, naloge, projekt):	Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none">• Laboratorijsko/Terensko delo (prisotnost, dnevnik, pisni test) pogoj za pristop k izpitu• Seminar (naloga, predstavitev)• Pisni izpit	5% 15% 80%	<ul style="list-style-type: none">• Lab/Field work (attendance, reports, reading assignment, written exam) mandatory for final exam• Seminar work (reading assignment, presentation)• Written exam

Reference nosilca / Lecturer's references:

- JELINČIĆ, Antun, ŠAJNA, Nina, ZGORELEC, Željka, PERČIN, Aleksandra. Bracken-induced increase in soil P availability, along with its high P acquisition efficiency, enables it to invade P-deficient meadows. *Journal of plant ecology*. 2022, vol. 15, iss. 4, str. 783-794.
- ŠIPEK, Mirjana, PERČIN, Aleksandra, ZGORELEC, Željka, ŠAJNA, Nina. Morphological plasticity and ecophysiological response of ground ivy (*Glechoma hederacea*, Lamiaceae) in contrasting natural habitats within its native range. *Plant Biosystems*. 2021, vol. 155, iss. 1, str. 136-147.
- ŠIPEK, Mirjana, HORVAT, Eva, VITASOVIĆ KOSIĆ, Ivana, ŠAJNA, Nina. Presence of alien *Prunus serotina* and *Impatiens parviflora* in lowland forest fragments in NE Slovenia = Prisutnost stranih vrsta *Prunus serotina* i *Impatiens parviflora* u fragmentima nizinskih šuma u SI Sloveniji. *Šumarski list*. 2022, vol. 146, iss. 5/6, str. 215-223,
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