



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Ekologija tal
<b>Course title:</b>	Soil Ecology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Biologija in ekologija z naravovarstvom, 2.stopnja		1. ali 2.	1 ali 2
Biology and ecology with nature conservation, 2 <sup>nd</sup> level		1. or 2.	1 ali 2

**Vrsta predmeta / Course type**

**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:**

**Jeziki / Languages:**  
**Predavanja / Lectures:**   
**Vaje / Tutorial:**

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

<b>Vsebina:</b>	<b>Content (Syllabus outline):</b>
<ul style="list-style-type: none"><li>• Pomen ekologije tal za človeka</li><li>• Nastanek tal, profili tal, horizonti tal, klasifikacija</li><li>• Značilnosti tal</li><li>• Tla kot habitat</li><li>• Ekološka vloga talnih organizmov</li><li>• Pestrost talnih organizmov</li><li>• Razgradnja</li></ul>	<ul style="list-style-type: none"><li>• Importance of soil ecology to society</li><li>• Soil formation, soil profiles, soil horizons, classification</li><li>• Soil properties</li><li>• Soil as a habitat</li><li>• Ecological role of soil organisms</li><li>• Diversity of soil organisms</li><li>• Decomposition</li></ul>

- Kratak pregled kroženja glavnih nutrientov v tleh
- Vplivi upravljanja s tlemi na dinamiko nutrientov v tleh
- Klimatske spremembe in ekologija tal

- Brief overview of major nutrient cycles
- Interactions among soil management and nutrient dynamics
- Climate change and soil ecology

### Temeljni literatura in viri / Readings:

- Coleman D.C., Crossley D.A.Jr., Hendrix P.F., 2004, Fundamentals in Soil Ecology, Elsevier
- Lavelle P., Spain A.V., 2001, Soil Ecology, Springer
- Mršič N., 1997, Živali naših tal, Tehniška založba Slovenije

### Cilji in kompetence:

- Študenti bodo spoznali tla kot pomemben in kompleksen sistem
- Spoznajo osnovne pedogenetske procese
- Spoznajo vlogo talnih organizmov v teh procesih

### Objectives and competences:

- Students are educated to understand that soil represents an important and complex system
- Students get the insights of basic processes (e.g. soil organic matter formation, cycle of nutrients,...)
- Students get the knowledge about the role of edaphic organisms in those processes.

### Predvideni študijski rezultati:

Študentje osvojijo znanje in pridobijo razumevanje o abiotskih in biotskih komponentah tal ter razumejo odnose med njimi. Spoznajo različne tipe tal in njihove značilnosti oz. kvaliteto. Razumejo, kako sta povezani talna biodiverziteteta in ekologija tal.

### Intended learning outcomes:

Students gain knowledge and understanding about abiotic and biotic components of soil habitat. Students understand how these soil components interact. Students are familiar with various soil types and quality measures. They understand how soil biodiversity is related to soil ecology.

### Metode poučevanja in učenja:

- Predavanja
- Seminar
- Terenske vaje
- Laboratorijske vaje

### Learning and teaching methods:

- Lectures
- Seminar
- Field work
- Laboratory work

### Načini ocenjevanja:

Delež (v %)  
/ Weight (in %)

### Assessment:

Način (pisni izpit, ustno izpraševanje, naloga, projekt)	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> <li>• Laboratorijsko/Terensko delo (prisotnost, dnevnik, pisni test) pogoj za pristop k izpitu</li> <li>• Seminar (naloga, predstavitev)</li> <li>• Pisni izpit</li> </ul>	20%	<ul style="list-style-type: none"> <li>• Lab/Field work (attendance, reports, reading assignment, written exam) mandatory for final exam</li> <li>• Seminar work (reading assignment, presentation)</li> <li>• Written exam</li> </ul>
	80%	

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**Reference nosilca / Lecturer's references:**

- NOVAK, Tone, ŠAJNA, Nina, ANTOLINC, Estera, LIPOVŠEK DELAKORDA, Saška, DEVETAK, Dušan, JANŽEKOVIČ, Franc. (2014) Cold tolerance in terrestrial invertebrates inhabiting subterranean habitats. *International journal of speleology*, 2014, vol. 43, no. 3, str.
- ŠAJNA, Nina, KUŠAR, Primož. (2014) Modeling species fitness in competitive environments. *Ecological modelling*, 2014, vol. 275, str. 31-36.
- ŠAJNA, Nina, MEISTER, Margit H., BOLHÁR-NORDENKAMPF, Harald R., KALIGARIČ, Mitja. (2013) Response of semi-natural wet meadow to natural geogenic CO<sub>2</sub> enrichment. *International journal of agriculture and biology*, 15, no. 4, str. 657-664.
- KALIGARIČ, Mitja, MEISTER, Margit H., ŠKORNIK, Sonja, ŠAJNA, Nina, KRAMBERGER, Branko, BOLHÁR-NORDENKAMPF, Harald R. (2011) Grassland succession is mediated by umbelliferous colonizers showing allelopathic potential. *Plant Biosystems*, 145, 3, 688-698
- ŠAJNA, Nina, KUŠAR, Primož, SLANA NOVAK, Ljuba, NOVAK, Tone. (2009) Notes on thermo- and hygropreference in *Leiobunum roseum* C. L. Koch, 1839 (Opiliones: Sclerosomatidae) in a habitat of *Hladnikia pastinacifolia* Reichenbach, 1831 (Spermatophyta: Apiaceae). *Contributions to natural history*, no. 12, str. 1111-1123
- ŠAJNA, Nina, KALIGARIČ, Mitja, IVAJNŠIČ, Danijel. (2014). Reproduction biology of an alien invasive plant : a case of drought-tolerant *Aster squamatus* on the Northern Adriatic seacoast, Slovenia. V: RANNOW, Swen (ur.), NEUBERT, Marco (ur.). *Managing protected areas in Central and Eastern Europe under climate change*, (Advances in global change research, vol. 58). Dordrecht [etc.]: Springer, cop. 2014, str. 279-288