



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	<b>Izbrana poglavja iz ekologije</b>
<b>Course title:</b>	<b>Selected topics in Ecology</b>

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1st or 2nd	1.- 4.; 1st-4th
Doctoral Study Ecological Sciences, 3rd cycle			

**Vrsta predmeta / Course type**

**Univerzitetna koda predmeta / University course code:**

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
15	3		6	6	150	6

**Nosilec predmeta / Lecturer:**

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

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

Ni pogojev. Priporočljivo za študente brez biološkega/ekološkega predznanja.

**Prerequisites:**

None. Advised for students without biological/ecological background.

**Vsebina:**

- Spoznavanje izbranih ekoloških konceptov
- Organizmi v okolju (pogoji in viri)
- Pregled zakonitosti populacijske ekologije
- Ekološke aplikacije na nivoju organizma, vrste in populacije
- Odnosi med vrstami (kompeticija, plenilstvo, parazitizem, simbioze,...)

**Content (Syllabus outline):**

- Familiarizing with selected ecological concepts
- Organisms in their environments (conditions and resources)
- Review of principles in population ecology
- Ecological applications at the level of organism, species and population
- Species interactions (competition,

- Združbe in ekosistemi

- predation, parasitism, symbiosis,...)
- Communities and ecosystem

### Temeljni literatura in viri / Readings:

#### Temeljna literatura / Basic readings:

- Begon, M., Townsend C.R., Harper J.L., 2021: Ecology: From Individuals to Ecosystems. 5th edition, Wiley & Sons. (druge izdaje/other editions)
- HORVAT, Eva, ŠAJNA, Nina. Exploring the impact of a non-native seed predator on the seed germination of its non-native host. Biological invasions. Dec. 2021, vol. 23, iss. 12, str. 3703-3717.

#### Priporočena literatura/ Recommended literature:

- Cain M.L., Bowman W.D., Hacker S.D., 2014: Ecology. Sinauer Associates.

#### Cilji in kompetence:

- Primerjava vpliva abiotičnih in biotičnih dejavnikov na organizme, združbe in ekosisteme.
- Pojasnitev osnovnih pravil, konceptov in teorij v ekologiji.
- Analiziranje osnovnih relacij med organizmi in okoljem .
- Pojasnitev zakonitosti v ekologiji populacij.

#### Objectives and competences:

- Comparison of impact of abiotic and biotic environmental factors on organisms, communities, and ecosystems.
- Explanation of the basic ecological laws, concepts and theories.
- Analysis of the basic relations between the individual and its environment
- Explanation of principles in population ecology.

#### Predvideni študijski rezultati:

Študenti bodo sposobni:

- diskutirati ekološke zakonitosti;
- primerjati glavne dejavnike v okolju;
- pojasniti koncept o pogojih in virih za preživetje in sobivanje ter poznavanje s tem povezanih prilagoditev osebkov in medvrstnih odnosov;
- diskutirati primere ekoloških raziskav na nivoju organizma, na nivoju ene vrste (avtekologija), na nivojih populacije, združbe in ekosistema.

#### Intended learning outcomes:

Students will be able to:

- discuss rules in ecology;
- compare the main factors in an environment;
- explain the concept about conditions and resources for survival and coexistence;
- of adaptations and interspecific relationships;
- discuss ecological investigations on the level of individual, single species, population, community and ecosystem studies.

#### Metode poučevanja in učenja:

- Predavanja
- Seminar

#### Learning and teaching methods:

- Lectures
- Seminar

- Terenske vaje
- Laboratorijske vaje
- Individualno delo

- Field work
- Laboratory work
- Individual work

	Delež (v %) / Weight (in %)	Assessment:
<b>Načini ocenjevanja:</b>		
<ul style="list-style-type: none"> <li>• Seminar work</li> <li>• Laboratorijsko/Terensko delo (prisotnost, dnevnik, pisni test) pogoji za pristop k izpitu</li> <li>• Pisni končni izpit</li> </ul>	15%  15% 70%	<ul style="list-style-type: none"> <li>• Seminar work</li> <li>• Lab/Field work (attendance, reports, written exam) mandatory for final exam</li> <li>• Written final exam</li> </ul>

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

- ŠIPEK, Mirjana, HORVAT, Eva, ŠAJNA, Nina First records of seed beetles *Megabruchidius dorsalis* (Fåhræus, 1839) and *M. tonkineus* (Pic, 1904) from three Balkan countries. *BiolInvasions Records*. 2022, vol. 11, iss. 1, str. 101-109,
- 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, ŠAJNA, Nina. Public opinions and perceptions of peri-urban plant invasion: the role of garden waste disposal in forest fragments. *Management of Biological Invasions*. Nov. 2020, vol. 11, iss. 4, str. 733-746.
- ŠAJNA, Nina, PERKOVIČ, Kaja, PAUŠIČ, Igor. *Nigritella lithopolitanica* Ravnik (Orchidaceae) : morphological and ecological differences among populations and factors contributing to its endangerment. *Botany Letters*. 2020, vol. 167, iss. 3, str. 353-362
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