Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

| UČNI NAČRT PREDMETA / COURSE SYLLABUS | |
|---|---|
| **Predmet:** | **Izbrana poglavja iz ekologije** |
| **Course title:** | **Selected topics in Ecology** |

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

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| **Vrsta predmeta / Course type** | Izbirni/Elective |
| **Univerzitetna koda predmeta / University course code:** | |

| **Predavanja**<br>**Lectures** | **Seminar**<br>**Seminar** | **Vaje**<br>**Tutorial** | **Lab. vaje**<br>**Laboratory work** | **Terenske vaje**<br>**Field work** | **Samost. delo**<br>**Individ. work** | **ECTS** |
|---|---|---|---|---|---|---|
| **15** | **3** | | **6** | **6** | **150** | **6** |

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| **Nosilec predmeta / Lecturer:** | Nina Šajna |

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| **Jeziki / Languages:** | **Predavanja / Lectures:** | slovenščina/ Slovene |
| | **Vaje / Tutorial:** | slovenščina / Slovene |

| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | **Prerequisites:** |
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| Ni pogojev. Priporočljivo za študente brez biološkega/ekološkega predznanja. | None. Advised for students without biological/ecological background. |

| **Vsebina:** | **Content (Syllabus outline):** |
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| • Spoznavanje izbranih ekoloških konceptov<br>• Organizmi v okolju (pogoji in viri)<br>• Pregled zakonitosti populacijske ekologije<br>• Ekološke aplikacije na nivoju organizma, vrste in populacije<br>• Odnosi med vrstami (kompeticija, plenilstvo, parazitizem, simbioze,…) | • Familiarizing with selected ecological concepts<br>• Organisms in their environments (conditions and resources)<br>• Review of principles in population ecology<br>• Ecological applications at the level of organism, species and population<br>• Species interactions (competition, |

| | |
|---|---|
| • Združbe in ekosistemi | predation, parasitism, symbiosis,…)<br>• Communities and ecosystem |

**Temeljni literatura in viri / Readings:**

**Temeljna literatura / Basic readings:**

Begon, M., Towsend, C. R. in Harper, J. L. (2021). *Ecology: From Individuals to Ecosystems* (5. izd.). Wiley & Sons. (ali druge izdaje/ or other editions)

**Dodatna literatura / Additional Readings:**

Horvat, E., & Šajna, N. (2021). Exploring the impact of a non-native seed predator on the seed germination of its non-native host. *Biological invasions*, *23*(12), 3703–3717. doi:10.1007/s10530-021-02610-8

Šajna, N., Urek, T., Kušar, P., & Šipek, M. (2023). The importance of thermally abnormal waters for bioinvasions - a case study of Pistia stratiotes. *Diversity*, *15*(3, [ ] 421), 22. doi:10.3390/d15030421

Cain, M. L., Bowman, W. D., & Hacker, S. D. (2014). *Ecology* (3rd ed., str. XXVI, 596, 96). Sinauer Associates.

| **Cilji in kompetence:** | **Objectives and competences:** |
|---|---|
| • Primerjava vpliva abiotskih in biotskih dejavnikov na organizme, združbe in ekosisteme.<br>• Pojasnitev osnovnih pravil, konceptov in teorij v ekologiji.<br>• Analiziranje osnovnih relacij med organizmi in okoljem .<br>• Pojasnitev zakonitosti v ekologiji populacij. | • Comparison of impact of abiotic and biotic environmental factors on organisms, communities, and ecosystems.<br>• Explanation of the basic ecological laws, concepts and theories.<br>• Analysis of the basic relations between the individual and its environment<br>• Explanation of principles in population ecology. |

| **Predvideni študijski rezultati:** | **Intended learning outcomes:** |
|---|---|
| Študenti bodo sposobni:<br>• diskutirati ekološke zakonitosti;<br>• primerjati glavne dejavnike v okolju;<br>• pojasniti koncept o pogojih in virih za preživetje in sobivanje ter poznavanje s tem povezanih prilagoditev osebkov in medvrstnih odnosov;<br>• diskutirati primere ekoloških raziskav na nivoju organizma, na nivoju ene vrste (avtekologija), na nivojih populacije, združbe in ekosistema. | Students will be able to:<br>• discuss rules in ecology;<br>• compare the main factors in an environment;<br>• explain the concept about conditions and resources for survival and coexistence;<br>• of adaptations and interspecific relationships;<br>• discuss ecological investigations on the level of individual, single species, population, community and ecosystem studies. |

| **Metode poučevanja in učenja:** | **Learning and teaching methods:** |
|---|---|
| • Predavanja<br>• Seminar<br>• Terenske vaje<br>• Laboratorijske vaje<br>• Individualno delo | • Lectures<br>• Seminar<br>• Field work<br>• Laboratory work<br>• Individual work |

| **Načini ocenjevanja:** | Delež (v %) / Weight (in %) | **Assessment:** |
|---|---|---|
| • Ustni izpit | 100% | • Oral exam |

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


Horvat, E., Šipek, M., & Šajna, N. (2024). Urban hedges facilitate spontaneous woody plants. *Urban Forestry and Urban Greening*, *96*(] 128336), 11. https://dk.um.si/IzpisGradiva.php?id=88564

Šipek, M., Horvat, E., & Šajna, N. (2023). Eastward range expansion of the ragweed leaf beetle (*Ophraella communa* LeSage, 1986) (Coleoptera, Chrysomelidae) in Slovenia. *BioInvasions Records*, *12*(2), 615–623. https://dk.um.si/IzpisGradiva.php?id=87570

Šipek, M., & Šajna, N. (2024). Lowland forest fragment characteristics and anthropogenic disturbances determine alien plant species richness and composition. *Biological invasions*, *26*(5), 1595–1614. https://dk.um.si/IzpisGradiva.php?id=91122