Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Ekologija
Course title:	Ecology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj	/	4	7
Five-year master's degree program Subject teacher	/		

Vrsta predmeta / Course type	Obvezni(Skupni)/
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
30			15	15	120	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:	**Prerequisits:**
Jih ni.	None.

Vsebina:	**Content (Syllabus outline):**

- Uvod v ekologijo
- Organizmi v okolju
- Pogoji
- Viri
- Življenjski cikli
- Znotrajvrstna kompeticija
- Razširjanje, dormanca, metapopulacije
- Ekološke aplikacije na nivoju organizmov in ene vrste
- Odnosi med vrstami (kompeticija, plenilstvo, parazitizem, simbioze,…)
- Abundanca
- Ekološke aplikacije na nivoju populacij
- Združbe in ekosistemi
- Pretok energije, snovi skozi ekosistem
- Prehranjevalna veriga
- Vzorci vrstne pestrosti
- Ekološke aplikacije na nivoju združbe in ekosistema

- Introduction to ecology
- Organisms in their environments
- Conditions
- Resources
- Life histories
- Intraspecific competition
- Dispersal, dormancy, metapopulations
- Ecological applications at the level of organisms and single-species populations
- Species interactions (competition, predation, parasitism, symbiosis,…)
- Abundance
- Ecological applications at the level of population interactions
- Communities and ecosystems
- The flux of energy and matter through ecosystems
- Food webs
- Patterns in species richness
- Ecological applications at the level of communities and ecosystems

Temeljni literatura in viri / Readings:

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

(druge izdaje/other editions)

Tome, D. (2006). Ekologija: organizmi v prostoru in času (1. natis, str. 344). Tehniška založba Slovenije.

Cilji in kompetence:

- Podati definicije v ekologiji
- Podati pregled osnovnih ekoloških zakonitosti, konceptov in teorij
- Prikazati nekatere osnovne metode ekološkega vzorčenja
- Podati pregled abiotskih in biotskih ekoloških dejavnikov
- Pregled osnovnih relacij med osebkom in okoljem
- Podati osnove populacijske ekologije rastlin
- Spodbujati zanimanje za ekološke raziskave in usposabljanje za načrtovanje takšnih raziskav
- Podati pregled biomov Zemlje, Evrope in Slovenije

Objectives and competences:

- To give definitions in ecology
- To give an overview of the basic ecological laws, concepts and theories
- To present selected sampling methods in ecology
- To give an overview of abiotic and biotic environmental factors
- To give an overview of the basic relations between the individual and its environment
- To introduce principles of population ecology
- To increase the interest for ecological investigations and training of planning such investigations
- To give an overview on biomes of the Earth, Europe and Slovenia

Predvideni študijski rezultati:

Intended learning outcomes:

• Povzemanje temeljnih ekoloških zakonitosti • Preoznavanje glavnih abiotskih in biotskih dejavnikov • Primerjanje ekoloških procesov znotraj populacije, med populacijami, med vrstami, v združbah,… • Pojasnitev lastnosti in procesov v ekosistemih • Prepoznavanje in razumevanje ekoloških razmer v konkretnem okolju • Pregled biomov ter vegetacije Zemlje, Evrope in Slovenije	• Summarizing basic ecological principles • Recognizing common abiotic and biotic factors • Comparing the ecological processes within population, among populations, among species and communities • Explaining ecosystem properties and processes • Recognizing and understanding of the ecological conditions within a specific environment • An overwiew over the biomes and vegetation of the Earth, Europe and Slovenia

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja • Terenske vaje • Laboratorijske vaje • Individualno delo	• Lectures • Field work • Laboratory work • Individual work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Pisni izpit	100%	• Written exam

Reference nosilca / Lecturer's references:

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

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

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. https://dk.um.si/IzpisGradiva.php?id=88134