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	**/**	**1**	**2**
Five-year master's degree program Subject Teacher	**/**		

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
30			**15**	**15**	**120**	**6**

Nosilec predmeta / Lecturer:	dr. Nina Šajna

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

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

- Begon, M., Tpwsend C.R., Harper J.L., 2006: Ecology: From Individuals to Ecosystems. John Wiley & Sons.
- Tarman, K., 1992: Osnove ekologije in ekologija živali. DZS.
- Tome, D., 2007: Ekologija. TZS.

Dodatna literatura/ Additional literature:

- Gurevitch, J., Scheiner S., Fox G: 2002: Plant ecology. Sinauer Associates Inc. Publishers.

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:

• Poznavanje in razumevanje temeljnih ekoloških zakonitosti • Poznavanje glavnih abiotskih in biotskih dejavnikov • Razumevanje ekoloških procesov znotraj populacije, med populacijami, med vrstami, v združbah,… • Razumevanje lastnosti in procesov v ekosistemih • Prepoznavanje in razumevanje ekoloških razmer v konkretnem okolju Pregled biomov ter vegetacije Zemlje, Evrope in Slovenije	• Knowledge about and understanding of basic ecological principles • Knowledge about common abiotic and biotic factors • Understanding of the ecological processes within population, among populations, among species and communities • Understanding of 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	• Lectures • Field work • Laboratory work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
• Pisni izpit iz vaj • Končni pisni izpit	10 % 90 %	• Written exam of practical class • Final written exam

Reference nosilca / Lecturer's references:

- ŠAJNA, Nina, KAVAR, Tatjana, ŠUŠTAR VOZLIČ, Jelka, KALIGARIČ, Mitja. Population genetics of the narrow endemic *Hladnikia pastinacifolia* Rchb. (Apiaceae) indicates survival in situ during the Pleistocene. Acta Biol. Crac., Ser. Bot. 2012, doi: 10.2478/v10182-012-0009-8.
- KALIGARIČ, Mitja, MEISTER, Margit H., ŠKORNIK, Sonja, ŠAJNA, Nina, KRAMBERGER, Branko, BOLHÁR-NORDENKAMPF, Harald R. Grassland succession is mediated by umbelliferous colonizers showing allelopathic potential. Plant Biosyst. 2011, 145 (3), 688-698.
- ŠAJNA, Nina, KUŠAR, Primož, SLANA NOVAK, Ljuba, NOVAK, Tone. Benefits of low-intensive grazing: co-occurrence of umbelliferous plant (*Hladnikia pastinacifolia* Rchb.) and opilionid species (*Phalangium opilio* L.) in dry, calcareous grassland. Pol. J. Ecol., 2011, 59 (4), 777-786.
- KALIGARIČ, Mitja, BOHANEC, Borut, SIMONOVIK, Biljana, ŠAJNA, Nina. Genetic and morphologic variability of annual glassworts (*Salicornia* L.) from the Gulf of Trieste (Northern Adriatic). Aquat. bot. 2008, 89 (3), 275-282.
- ŠKORNIK, Sonja, ŠAJNA, Nina, KRAMBERGER, Branko, KALIGARIČ, Simona, KALIGARIČ, Mitja. Last remnants of riparian wooded meadows along the middle Drava River (Slovenia) : species composition is a response to light conditions and management. Folia geobot., 2008, 43 (4), 431-445.
- KALIGARIČ, Mitja, SEDONJA, Jožef, ŠAJNA, Nina. Traditional agricultural landscape in Goričko Landscape Park (Slovenia) : distribution and variety of riparian stream corridors and patches. Landsc. urban plan. 2008, 85 (1), 71-78.
- ŠAJNA, Nina, HALER, Maja, ŠKORNIK, Sonja, KALIGARIČ, Mitja. Survival and expansion of *Pistia stratiotes* L. in a thermal stream in Slovenia. Aquat. bot. 2007, 87 (1), 75-79.