



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

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

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

**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
30			15	15	120	6

**Nosilec predmeta / Lecturer:**

**Jeziki / Predavanja / Lectures:**   
**Languages: 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>• Uvod v ekologijo</li><li>• Organizmi v okolju</li><li>• Pogoji</li><li>• Viri</li><li>• Življenjski cikli</li><li>• Znotrajvrstna kompeticija</li><li>• Razširjanje, dormanca, metapopulacije</li><li>• Ekološke aplikacije na nivoju organizmov in ene vrste</li><li>• Odnosi med vrstami (kompeticija, plenilstvo, parazitizem, simbioze,...)</li><li>• Abundanca</li><li>• Ekološke aplikacije na nivoju populacij</li><li>• Združbe in ekosistemi</li><li>• Pretok energije, snovi skozi ekosistem</li><li>• Prehranjevalna veriga</li></ul>	<ul style="list-style-type: none"><li>• Introduction to ecology</li><li>• Organisms in their environments</li><li>• Conditions</li><li>• Resources</li><li>• Life histories</li><li>• Intraspecific competition</li><li>• Dispersal, dormancy, metapopulations</li><li>• Ecological applications at the level of organisms and single-species populations</li><li>• Species interactions (competition, predation, parasitism, symbiosis,...)</li><li>• Abundance</li><li>• Ecological applications at the level of population interactions</li><li>• Communities and ecosystems</li></ul>

- Vzorci vrstne pestrosti
- Ekološke aplikacije na nivoju združbe in ekosistema

- 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 biotomov 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:

- 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 biotomov ter vegetacije Zemlje, Evrope in Slovenije

### Intended learning outcomes:

- 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 overview over the biomes and vegetation of the Earth, Europe and Slovenia

### Metode poučevanja in učenja:

- Predavanja
- Terenske vaje

### Learning and teaching methods:

- Lectures
- Field work

<ul style="list-style-type: none"> <li>• Laboratorijske vaje</li> </ul>	<ul style="list-style-type: none"> <li>• Laboratory work</li> </ul>
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Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Način (pisni izpit, ustno izpraševanje, naloge, projekt) <ul style="list-style-type: none"> <li>• Pisni izpit iz vaj</li> <li>• Končni pisni izpit</li> </ul>	10 % 90 %	Type (examination, oral, coursework, project): <ul style="list-style-type: none"> <li>• Written exam of practical class</li> <li>• Final written exam</li> </ul>

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

<ul style="list-style-type: none"> <li>• ŠAJNA, Nina, KAVAR, Tatjana, ŠUŠTAR VOZLIČ, Jelka, KALIGARIČ, Mitja. Population genetics of the narrow endemic <i>Hladnikia pastinacifolia</i> Rchb. (Apiaceae) indicates survival in situ during the Pleistocene. Acta Biol. Crac., Ser. Bot. 2012, doi: 10.2478/v10182-012-0009-8.</li> <li>• 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.</li> <li>• ŠAJNA, Nina, KUŠAR, Primož, SLANA NOVAK, Ljuba, NOVAK, Tone. Benefits of low-intensive grazing: co-occurrence of umbelliferous plant (<i>Hladnikia pastinacifolia</i> Rchb.) and opilionid species (<i>Phalangium opilio</i> L.) in dry, calcareous grassland. Pol. J. Ecol., 2011, 59 (4), 777-786.</li> <li>• KALIGARIČ, Mitja, BOHANEK, Borut, SIMONOVIK, Biljana, ŠAJNA, Nina. Genetic and morphologic variability of annual glassworts (<i>Salicornia</i> L.) from the Gulf of Trieste (Northern Adriatic). Aquat. bot. 2008, 89 (3), 275-282.</li> <li>• 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.</li> <li>• 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.</li> <li>• ŠAJNA, Nina, HALER, Maja, ŠKORNIK, Sonja, KALIGARIČ, Mitja. Survival and expansion of <i>Pistia stratiotes</i> L. in a thermal stream in Slovenia. Aquat. bot. 2007, 87 (1), 75-79.</li> </ul>
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