Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Populacijska ekologija
Course title:	Population Ecology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Ekologija z naravovarstvom, 1. stopnje		**3**	**5**
Ecology with nature protection, 1st. degree			

Vrsta predmeta / Course type obvezni / obligatory

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**	**105**	**5**

Nosilec predmeta / Lecturer: Davorin TOME

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
-Jih ni	-No

Vsebina:	**Content (Syllabus outline):**
Čeprav ekologijo pogosto delimo na rastlinsko, živalsko, morsko itd., so v osnovi ekološki mehanizmi na vseh področjih enaki. Še posebej se to kaže pri mehanizmih delovanja populacij. Enake populacijske zakonitosti veljajo pri rastlinah, živalih, med populacijami globokomorskih združb ali med bakterijami ali glivami. Namen predmeta je predstaviti osnovne populacijske procese in pojasniti,	We frequently divide ecology to plant ecology, animal ecology, marine ecology etc., although basic ecological processes in all are the same. This is especially evident in populations. The same population principles rules among plants, animals, among populations of deep sea vent communities, among bacteria, fungi. Aim of the course is to present basic population processes, and

kako vplivajo na populacijsko dinamiko. Osrednji del predmeta bo namenjen spoznavanju populacijskih procesov: rodnost, smrtnost, od gostote odvisni ter od gostote neodvisni mehanizmi, kompenzacijska točka, razlike med populacijami s prekritimi in ločenimi generacijami, kako na populacijske procese vplivajo abiotski in biotski dejavniki itd. Teoretično znanje bo ilustrirano s praktičnimi primeri.	to explain how do they influence the population dynamics. The central part of the lecture will be understanding of population processes: birth, mortality, density dependent, density independent processes, compensation point, differences among populations with discrete and overlapping generations, influence of abiotic and biotic conditions on population processes. Theoretical background will be throughout illustrated with practical examples.

Temeljni literatura in viri / Readings:

- Begon, M., J.L. Harper, C.R. Townsend, 1996: Ecology. Blackwell Science.
- Begon, M., M. Mortimer, D.J. Thompson, 1996: Population ecology. Blackwell Science
- Pianka, E.R., 2000: Evolutionary ecology. Addison Wesley Educational Publishers.

Tarman, K., 1994: Osnove ekologije in ekologija živali. DZS

Cilji in kompetence:	**Objectives and competences:**
• Predstaviti populacijo kot osnovno ekološko enoto in njene lastnosti • Predstaviti neposredne in posredne vzroke, mehanizme in procese, ki vplivajo na populacijsko dinamiko	• To present a population as a basic ecological unit, and its characteristics • To present direct and indirect causes, mechanisms and processes influencing population dynamics

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Študentje spoznajo ravnovesje med različnimi populacijskimi mehanizmi, ki določajo populacijsko velikost in dinamiko • Spoznajo, da so kljub identičnim populacijskim mehanizmom reakcije različnih vrst na spremembe v okolju različne, kar je v veliki meri posledica razlik v življenjskih strategijah • Naučijo se opisati lastnosti populacij Prenesljive/ključne spretnosti in drugi atributi: Pridobljeno znanje bo mogoče aplicirati na naravovarstvene probleme, kdaj so problemi za populacijo lahko kritični, kdaj ne	Knowledge and Understanding: • Students capture a balance between different population processes, resulting in the population size and dynamics • Students understand that in spite of similar population rules, species differ in reactions to similar environmental changes as a consequence of different life history traits • They learn to describe population characteristics Transferable/Key Skills and other attributes: The knowledge will be applicable to conservation problems - better understanding

	of, when a problem is critical to a population and when is not

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja • Seminarsko delo	• Lectures • Seminar work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Seminarsko delo – pisno in ustno (predpogoj za udeležbo na izpitu) • Pisni izpit	20 80	• Seminar work – written and oral presentation (obligatory before the exam) • Written exam

Reference nosilca / Lecturer's references:

1. TOME, Davorin, DENAC, Damijan. Survival and development of predator avoidance in the post-fledging period of the Whinchat (Saxicola rubetra) : consequences for conservation measures. *J. Ornithol.*, 2012, vol. 153, no. 1, str. 131-138. http://dx.doi.org/10.1007/s10336-011-0713-2, doi: 10.1007/s10336-011-0713-2. [COBISS.SI-ID 2387535]

2. TOME, Davorin. Post-fledging survival and dynamics of dispersal in Long-eared Owls Asio otus. *Bird study*, 2011, vol. 58, no. 2, str. 193-199. http://dx.doi.org/10.1080/00063657.2011.559531, doi: 10.1080/00063657.2011.559531. [COBISS.SI-ID 2373455]

3. DENAC, Damijan, KOCE, Urša, TOME, Davorin, VREZEC, Al. Lov in uravnavanje populacij ptic = Hunting and population regulation in birds. *Varst. narave*, 2010, št. 23, str. 39-53. [COBISS.SI-ID 26944473]

4. AL SAYEGH-PETKOVŠEK, Samar, TOME, Davorin, POKORNY, Boštjan. Ocena tveganja zaradi prehoda svinca (Pb) iz tal prek prehranjevalne verige v male sesalce (na primeru pehotnih strelišč) = Risk assessment of lead contamination for small mammal food chains (case studyfor shooting ranges). *Zb. gozd. lesar. (Tisk. izd.)*. [Tiskana izd.], 2010, št. 91, str. 13-30, ilustr. [COBISS.SI-ID 1063638]

5. TOME, Davorin, KROFEL, Miha, MIHELIČ, Tomaž. The diet of the raven Corvus corax in south-west Slovenia = Dieta del corvo imperiale Corvus corax in Slovenia sud-occidentale = Prehrana krokarja Corvus corax v jugozahodni Sloveniji. *Ann, Ser. hist. nat.*, 2009, vol. 19, no. 2, str. 161-166. [COBISS.SI-ID 2152015]

6. TOME, Davorin. Changes in the diet of long-eared owl Asio otus: seasonal patterns of dependence on vole abundance = Cambios en la dieta del búho chico Asio otus: dependencia de la abundancia de topillos en los patrones estacionales. *Ardeola*, 2009, letn. 56, št. 1, str. 49-56. [COBISS.SI-ID 25757401]

7. VREZEC, Al, DENAC, Damijan, TOME, Davorin. Krokar Corvus corax na ozemlju Slovenije in bližnje okolice: analiza pojavljanja od pleistocena do danes ter odnos človeka do vrste = The

Common Raven Corvus corax within the territory of Slovenia and its neighbouring countries: an analysis of the species occurrence from the Pleistocene to the present time and human's relationship with this bird species. *Scopolia*, 2009, št. 66, str. 1-63, ilustr. [COBISS.SI-ID 743669]

8. TOME, Davorin, DENAC, Damijan. Individualno barvno obročkanje kot metoda v varstveni biologiji - preliminarni rezultati študije repaljščice (Saxicola rubetra) na Ljubljanskem barju = Individual colour ringing as a conservation biology method - preliminary results of the Whinchat (Saxicola rubetra) case study at Ljubljansko barje (Central Slovenia). V: GREGORI, Janez (ur.). *Scopolia Supplementum 4 - 2009*, (Scopolia, Supplementum, 4). Ljubljana: Prirodoslovni muzej Slovenije: = Slovenian Museum of Natural History, 2009, str. 175-182. [COBISS.SI-ID 721653]