



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: Načrtovanje in analiza ekoloških eksperimentov
Course title: Design and analysis of ecological experiments

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

Vrsta predmeta / Course type

Izbirni/Elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
10	10		10		150	6

Nosilec predmeta / Lecturer:

Nataša Pipenbaher

Jeziki / Predavanja / Lectures: slovenski / Slovene
Languages: Vaje / Tutorial: slovenski / Slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Ni predpogojev.

Prerequisites:

No prerequisites.

Vsebina:

- Načrtovanje poskusov
- Minimalne zahteve, ki so potrebne za uspešno postavitve ekoloških poskusov
- Načrtovanje in analiziranje podatkov o funkcionalni pestrosti rastlin
- Reševanje ekoloških problemov
- Teorije, hipoteze in statistika ekoloških podatkov
- Vrste podatkov
- Vrednotenje dobljenih rezultatov in

Content (Syllabus outline):

- Designing successful field experiments
- Minimal requirements of experimental design in ecology
- Designing and analysis data of functional diversity
- Ecological problems and how they are approached
- Theories, Hypotheses and statistic of ecological data
- Types of variables

<p>grafični prikazi</p> <ul style="list-style-type: none"> - Različni statistični testi: MANOVA, ANCOVA ... - Statistični programi: R, SPSS in CANOCO

<ul style="list-style-type: none"> - Explanatory data analysis and graphic display - Different statistical test: MANOVA, ANCOVA... - Statistical program: R, SPSS and CANOCO

Temeljni literatura in viri / Readings:

Underwood, A.J., 2009: Experiments in ecology. Cambridge university press, UK.
 Zuur, A.F., Ieno, E.N., Meesters, E.H.W.G., 2009: A beginner's guide to R. Springer.
 Scheiner, M.S., Gurevitch, J., 2001: Design and analysis of ecological experiment. 415 pages, University Press, Oxford.
 Gotelli, N.J., Ellison, A.M., 2004: A primer of Ecological statistics. Sinauer Associates, Inc. Publishers, USA.
 Šmilauer, P., Lepš, J., 2014: Multivariate Analysis of ecological data using CANOCO. Cambridge University Press.
 Plant, R.E. 2012: Spatial data analysis in ecology and agriculture using R. CRC press.
 Dytham, C. 2011: Choosing and using statistics. Wiley-Blackwell, UK
 Hairston, N.G. 2000: Ecological experiment. Cambridge university press, UK.

Cilji in kompetence:

Cilj izbrane vsebine je pridobitev dodatnih znanj iz načrtovanja in analiziranja ekoloških eksperimentov.

Objectives and competences:

The aim of the selected contents is gain of advance knowledge about design and analysis of ecological experiments.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Uspešnega načrtovanja in analiziranja ekoloških problemov

Prenesljive/ključne spretnosti in drugi

Intended learning outcomes:

Knowledge and understanding:

- Successful design and analysis of ecological problems

Transferable/Key Skills and other attributes:

atributi: -	-
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Metode poučevanja in učenja:
Learning and teaching methods:

<ul style="list-style-type: none"> • Predavanja • Seminar • Laboratorijske vaje • Individualno delo 	<ul style="list-style-type: none"> • Lectures • Seminar • Laboratory exercises • Individual work
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Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

<ul style="list-style-type: none"> - Seminarska naloga - Pisni izpit 	30 % 70 %	<ul style="list-style-type: none"> - Seminar - Written examination
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Reference nosilca / Lecturer's references:

PIPENBAHER, Nataša, KALIGARIČ, Mitja, ŠKORNIK, Sonja. Floristic and functional comparison of karst pastures and karst meadows from the North Adriatic karst = Floristična in funkcionalna primerjava kraških pašnikov in kraških travnikov severnojadranskega Krasa. *Acta carsologica*, ISSN 0583-6050. [Tiskana izd.], 2011, letn. 40, št. 3, str. 515-525, ilustr.

PIPENBAHER, Nataša, KALIGARIČ, Mitja, MASON, Norman W. H., ŠKORNIK, Sonja. Dry calcareous grasslands from two neighboring biogeographic regions: relationship between plant traits and rarity. *Biodiversity and conservation*, ISSN 0960-3115, 2013, vol. 22, iss. 10, str. 2207-2221

MASON, Norman W. H., PIPENBAHER, Nataša, ŠKORNIK, Sonja, KALIGARIČ, Mitja. Does complementarity in leaf phenology and inclination promote co-existence in a species-rich meadow? : evidence from functional groups. *Journal of vegetation science*, ISSN 1100-9233. [Print ed.], Jan. 2013, vol. 24, iss. 1, str. 94-100, ilustr.

PIPENBAHER, Nataša, ŠKORNIK, Sonja, CARVALHO, Gustavo Henrique de, BATALHA, Marco Antônio. Phylogenetic and functional relationships in pastures and meadows from the North Adriatic Karst. *Plant ecology*, ISSN 1385-0237, 2013, vol. 214, iss. 4, str. 501-519

BATALHA, Marco Antônio, PIPENBAHER, Nataša, BAKAN, Branko, KALIGARIČ, Mitja, ŠKORNIK, Sonja. Assessing community assembly along a successional gradient in the North Adriatic Karst with functional and phylogenetic distances. *Oecologia*, ISSN 0029-8549, 2015, vol. 178, iss. 4, str. 1205-1214

PAUŠIČ, Igor, IVAJNŠIČ, Danijel, KALIGARIČ, Mitja, PIPENBAHER Nataša. Relation between plant species diversity and landscape variables in Central-European dry grassland fragments and their successional derivatives. *Acta Botanica Croatica*, 2017, vol. 76 (1), in press.