



Univerza v Mariboru



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Fakulteta za naravoslovje in
matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Raziskovalne metode v biologiji in ekologiji
Course title:	Scientific methods in biology and ecology

Študijski program in stopnja	Študijska smer	Letnik	Semester
Study programme and level	Study field	Academic year	Semester
Biologija, 1.stopnja		3	6
Biology, 1.degree		3	6

Vrsta predmeta / Course type

Obvezen / obligatory

Univerzitetna koda predmeta / University course code:

Predavanja	Seminar	Sem. vaje	Lab. vaje	Teren. vaje	Samost. delo	ECTS
Lectures	Seminar	Tutorial	Laboratory work	Field work	Individ. work	
15	30		15		90	5

Nosilec predmeta / Lecturer:

Sonja Škornik
Saška Lipovšek

Jeziki /

Predavanja / Lectures: Slovenski/Slovenian

Languages:

Vaje / Tutorial: Slovenski/Slovenian

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

Prerequisites:

Jih ni.

No.

Vsebina:

Content (Syllabus outline):

- V okviru predmeta bodo študentje spoznali različne metode dela z organizmi, združbami organizmov in habitati.
- Seznanili se bodo z načini uporabe različnih tehnik mikroskopiranja, eksperimentov z organizmi v laboratoriju in na prostem.
- Seznanili se bodo z različnimi raziskovalnimi metodami, vključno z obdelavo podatkov in predstavitvijo rezultatov in diskusijo.

- Students will get familiar with different research methods with organisms, communities and habitats.
- They will get familiar with different techniques of using microscope, performing experiments with organisms in the laboratory and in the nature.
- They will get familiar with different research methods, including elaboration and analysis of data, presenting the results and discussion.

Temeljni literatura in viri / Readings:

- Moore P.D., Chapman S.B. (Ur.) Methods in Plant Ecology. 1986, Blackwell, Oxford.
- Smith R.L., Smith T.M. Ecology and field biology. 2001, Benjamin Cummings, San Francisco
- Jones A., Reed R., Weyers J. Practical skills in biology. 1994, Longman, London

Cilji in kompetence:

- Predstaviti več tehnik in aparatur za delo v biologiji in ekologiji.
- Predstaviti več metod, ki se uporabljajo v botaniki in ekologiji.
- Predstaviti obdelavo podatkov, predstavitev rezultatov in diskusijo.

Objectives and competences:

- To learn the techniques and equipment for scientific research in biology and ecology.
- To learn methods, which are in use in biology and ecology.
- To learn how to elaborate the data, presentation of the results and discussion.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Različnih metod dela v biologiji in ekologiji rastlin
- Obdelave in predstavitve rezultatov

Intended learning outcomes:

Knowledge and understanding:

- Different methods in biology and ecology
- Elaboration and presentation of data

Metode poučevanja in učenja:**Learning and teaching methods:**

<ul style="list-style-type: none"> - Predavanja - Seminarji -Laboratorijske vaje 	<ul style="list-style-type: none"> - Lectures - Seminars - Laboratory excersises
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Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)	Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> - Seminarska naloga in njena javna predstavitev - Pisni izpit 	<p>60</p> <p>40</p>	<ul style="list-style-type: none"> - Seminar work and public presentation on it - Written exam

Reference nosilca / Lecturer's references:

Sonja Škornik:

PIPENBAHER, Nataša, KALIGARIČ, Mitja, ŠKORNIK, Sonja. Floristic and functional comparision of karst pastures and karst meadows from the North Adriatic Karst = Floristična in funkcionalna primerjava kraških pašnikov in kraških travnikov severnojadranskega Krasa. *Acta carsol.*, 2011, letn. 40, št. 3, str. 515-525.

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. (Firenze, Testo stamp.)*, 2011, vol. 145, no. 3, str. 688-698, ilustr.

ŠKORNIK, Sonja, VIDRIH, Matej, KALIGARIČ, Mitja. The effect of grazing pressure on species richness, composition and productivity in North Adriatic Karst pastures. *Plant Biosyst. (Firenze, Testo stamp.)*, 2010, vol. 144, no. 2, str. 355-364, ilustr.

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.*, dec. 2008, vol. 43, no. 4, str. 431-445.

Saška Lipovšek:

NOVAK, Tone, PERC, Matjaž, LIPOVŠEK DELAKORDA, Saška, JANŽEKOVIČ, Franc. Duality of terrestrial subterranean fauna. *Int. J. Speleol. (Ed. ital.)*, 2012, vol. 41, no. 2, str. 181-188

LIPOVŠEK DELAKORDA, Saška, LETOFSKY-PAPST, Ilse, HOFER, Ferdinand, LEITINGER, Gerd, DEVETAK, Dušan. The evidence on the degradation processes in the midgut epithelial cells of the larval antlion *Euroleon nostras* (Geoffroy in Fourcroy, 1785) (Myrmeleontidae, Neuroptera). *Micron (1993)*. [Print ed.], 2012, vol. 43, iss. 5, str. 651-665, ilustr.,

LIPOVŠEK DELAKORDA, Saška, LETOFSKY-PAPST, Ilse, HOFER, Ferdinand, PABST, Maria Anna, DEVETAK, Dušan. Application of analytical electron microscopic methods to investigate the function of spherites in the midgut of the larval antlion *Euroleon nostras* (Neuroptera: Myrmeleontidae). *Microsc. res. tech. (Print)*, 2012, vol. 75, iss. 4, str. 397-407,

ZEMLIČ, Mateja, LIPOVŠEK DELAKORDA, Saška. Clostridium difficile toxin B induces morphological changes consistent with autophagy in the human adenocarcinoma cell line (HT-29) = Toksin B bakterije Clostridium difficile povzroča morfološke spremembe, ki nakazujejo proces avtofagije v človeških črevesnih epitelnih celicah HT-29. *Acta medico-biotechnica*, 2011, vol. 4, no. 2, str. 61-68

LIPOVŠEK DELAKORDA, Saška, NOVAK, Tone, JANŽEKOVIČ, Franc, PABST, Maria Anna. Role of the fat body in the cave crickets *Troglophilus cavicola* and *Troglophilus neglectus* (Rhaphidophoridae, Saltatoria) during overwintering. *Arthropod struct. develop.*, 2011, vol. 40, no. 1, str. 54-63,