



Univerza v Mariboru

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 Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Univerzitetni študijski program Ekologija z naravovarstvom, 1. stopnja		3. 3rd	6. 6th
Undergraduate university programme Ecology with Nature Conservation, 1st degree			

Vrsta predmeta / Course type Obvezni/Obligatory ali 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
15	30		15		90	5

Nosilec predmeta / Lecturer: Sonja ŠKORNIK; Saška LIPOVŠEK

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

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

Vsebina:

- 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.

Content (Syllabus outline):

- 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

- Seznanili se bodo z različnimi raziskovalnimi metodami, vključno z obdelavo podatkov in predstavitvijo rezultatov in diskusijo.

research methods, including elaboration and analysis of data, presenting the results and discussion.

Temeljna literatura in viri / Readings:

- Jones A., Reed R., Weyers J. Practical skills in biology. 1994, Longman, London
- 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

Cilji in kompetence:

- Predstaviti več tehnik in aparaturo 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:

- Poznavanje različnih metod dela v biologiji in ekologiji.
- Obvladovanje različnih metod obdelave in predstavitve rezultatov.

Prenesljive/ključne spretnosti in drugi atributi:

- Seznanitev z metodami in obdelavo ter predstavitve rezultatov.

Intended learning outcomes:

Knowledge and understanding:

- Knowledge of different methods in biology and ecology.
- Understanding and knowledge of different methods for elaboration and presentation of data.

Transferable/Key Skills and other attributes:

- Getting familiar with the methods and data elaboration as well as with presentation of the results

Metode poučevanja in učenja:

- Predavanja
- Seminarji
- Laboratorijske vaje

Learning and teaching methods:

- Lectures
- Seminars
- Laboratory exercises

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
<ul style="list-style-type: none"> • Seminarska naloga in njena javna predstavitev • Pisni izpit 	60	<ul style="list-style-type: none"> • Seminar work and public presentation on it
	40	<ul style="list-style-type: none"> • Written exam

Reference nosilca / Lecturer's references:

Sonja ŠKORNIK:

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, doi: [10.1007/s10531-013-0520-6](https://doi.org/10.1007/s10531-013-0520-6). [COBISS.SI-ID [19978504](https://www.cobiss.si/id/19978504)]

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, doi: [10.1007/s11258-013-0185-y](https://doi.org/10.1007/s11258-013-0185-y). [COBISS.SI-ID [19716616](https://www.cobiss.si/id/19716616)]

ŠKORNIK, Sonja, HARTMAN, Klavdija, KALIGARIČ, Mitja. Relation between CSR functional signatures of dry grasslands from two contrasting geological substrates = Relazione tra sigle funzionali CSR di pascoli aridi su due substrati geologici contrastanti. *Ann, Ser. hist. nat.*, 2010, vol. 20, št. 2, str. 101-112.

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.

Saška LIPOVŠEK:

LIPOVŠEK DELAKORDA, Saška, JANŽEKovič, Franc, NOVAK, Tone. Autophagic activity in the midgut gland of the overwintering harvestmen *Gyas annulatus* (Phalangiidae, Opiliones). *Arthropod structure & development*, ISSN 1467-8039, 2014, str. 1-8, ilustr., doi: [10.1016/j.asd.2014.06.001](https://doi.org/10.1016/j.asd.2014.06.001). [COBISS.SI-ID [20696584](https://www.cobiss.si/id/20696584)]

NOVAK, Tone, ŠAJNA, Nina, ANTOLINC, Estera, LIPOVŠEK DELAKORDA, Saška, DEVETAK, Dušan, JANŽEKovič, Franc. Cold tolerance in terrestrial invertebrates inhabiting subterranean habitats. *International journal of speleology*, ISSN 0392-6672, 2014, vol. 43, no. 3, str. r39-r46. <http://dx.doi.org/10.5038/1827-806X.43.3.3>, doi: [10.5038/1827-806X.43.3.3](https://doi.org/10.5038/1827-806X.43.3.3). [COBISS.SI-ID [20595208](https://www.cobiss.si/id/20595208)]

NOVAK, Tone, JANŽEKovič, Franc, LIPOVŠEK DELAKORDA, Saška. Contribution of non-troglobiotic terrestrial invertebrates to carbon input in hypogean habitats = Prispevek prezimujočih

netroglubiontskih kopenskih nevretenčarjev k vnosu ogljika v podzemeljske habitate. *Acta carsologica*, ISSN 0583-6050, 2013, letn. 42, št. 2/3, str. 301-309, tabele. <http://ojs.zrc-sazu.si/carsologica/article/view/669/600>, doi: [10.3986/ac.v42i2-3.669](https://doi.org/10.3986/ac.v42i2-3.669). [COBISS.SI-ID [20238600](https://www.cobiss.si/record/20238600)]

LIPOVŠEK DELAKORDA, Saška, JANŽEKovič, Franc, LEITINGER, Gerd, RUPNIK, Marjan. Rab3a ablation related changes in morphology of secretory vesicles in major endocrine pancreatic cells, pituitary melanotroph cells and adrenal gland chromaffin cells in mice. *General and comparative endocrinology*, ISSN 0016-6480, 2013, vol. 185, str. 67-79. <http://dx.doi.org/10.1016/j.ygcen.2013.01.007>. [COBISS.SI-ID [19733768](https://www.cobiss.si/record/19733768)]