



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
Biologija, 1. stopnja	/	3.	6.
Biology, 1 st cycle degree	/	3rd	6th

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
15	30	15			90	5

Nosilec predmeta / Lecturer:

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

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

Jih ni.

Prerequisites:

No prerequisites.

Vsebina:

Content (Syllabus outline):

- Predstavitev različnih metod dela z organizmi, združbami organizmov in habitati.
- Izbrani načini uporabe različnih tehnik mikroskopiranja, eksperimentov z organizmi v laboratoriju in na prostem.
- Predstavitev različnih raziskovalnih metod, vključno z obdelavo podatkov in predstavitvijo rezultatov in diskusijo.

- Presentation of different research methods with organisms, communities and habitats.
- Selected techniques of using microscope, performing experiments with organisms in the laboratory and in the field.
- Presentation of different research methods, including elaboration and analysis of data, presenting the results and discussion.

Temeljni literatura in viri / Readings:

- Jones A., Reed R., Weyers J. Practical skills in biology. 2007, Pearson Education.
- 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:

Študenti se seznanijo z

- različnimi tehnikami in aparaturami za delo v biologiji in ekologiji,
- različnimi metodami, ki se uporabljajo v biologiji in ekologiji,
- pristopi za obdelavo podatkov, predstavitev rezultatov in diskusijo.

Objectives and competences:

Students get familiar with

- different techniques and equipments for scientific research in biology and ecology,
- different methods, which are in use in biology and ecology,
- approaches for data analysis, presentation of the results and discussion.

Predvideni študijski rezultati:

Znanje in razumevanje:

Študenti znajo

- uporabiti različne ustrezne metode dela v biologiji in ekologiji.
- uporabiti različne metode analize podatkov in predstavitve rezultatov.

Intended learning outcomes:

Knowledge and understanding:

Students are able to

- use various appropriate methods in biology and ecology.
- use different methods for data analysis and presentation of results.

Metode poučevanja in učenja:

<ul style="list-style-type: none"> • Predavanja • Seminarji • Laboratorijske vaje
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Learning and teaching methods:

<ul style="list-style-type: none"> • Lectures • Seminars • Laboratory work

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

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

Reference nosilca / Lecturer's references:

Sonja ŠKORNIK:

BIURRUN, Idoia, PIELECH, Remigiusz, DEMBICZ, Iwona, GILLET, François, KOZUB, Łukasz, MARCENÒ, Corrado, REITALU, Triin, VAN MEERBEEK, Koenraad, GUARINO, Riccardo, CHYTRÝ, Milan, PIPENBAHER, Nataša, **ŠKORNIK, Sonja**, et al. Benchmarking plant diversity of Palearctic grasslands and other open habitats. *Journal of vegetation science*. [Online ed.]. Jul./Aug. 2021, vol. 32, iss. 4, 21 str. ilustr. ISSN 1654-1103. <https://onlinelibrary.wiley.com/doi/pdf/10.1111/jvs.13050>, DOI: [10.1111/jvs.13050](https://doi.org/10.1111/jvs.13050). [COBISS.SI-ID [78991619](https://www.cobiss.si/id/78991619)]

ŠKORNIK, Sonja, PAUŠIČ, Igor, NOVAK, Tone, JANŽEKovič, Franc, IVAJNŠIČ, Danijel, TOSTOVRŠNIK, Mihaela, KOZEL, Peter. Environmental factors influencing the distribution of habitat types in the highlands of the Kamnik - Savinja Alps. *Plant Biosystems*. 2022, vol. 156, no. 3, str. 710-721, ilustr. ISSN 1126-3504. DOI: [10.1080/11263504.2021.1918780](https://doi.org/10.1080/11263504.2021.1918780). [COBISS.SI-ID [64326915](https://www.cobiss.si/id/64326915)]

KALIGARIČ, Mitja, ČUŠ, Jure, **ŠKORNIK, Sonja**, IVAJNŠIČ, Danijel. The failure of agri-environment measures to promote and conserve grassland biodiversity in Slovenia. *Land use policy*, ISSN 0264-8377. [Print ed.], 2019, 80, str. 127-134, ilustr., doi: [10.1016/j.landusepol.2018.10.013](https://doi.org/10.1016/j.landusepol.2018.10.013). [COBISS.SI-ID [24068872](https://www.cobiss.si/id/24068872)]

Saška LIPOVŠEK:

LIPOVŠEK DELAKORDA, Saška, NOVAK, Tone, DARIŠ, Barbara, HOFER, Ferdinand, LEITINGER, Gerd, LETOFSKY-PAPST, Ilse. Ultrastructure of spherites in the midgut diverticula and Malpighian tubules of the harvestman *Amilenus aurantiacus* during the winter diapause. *Histochemistry and cell biology*. Jan. 2022, vol. 157, iss. 1, str. 107-118, ilustr. ISSN 0948-6143. DOI: [10.1007/s00418-021-02046-0](https://doi.org/10.1007/s00418-021-02046-0). [COBISS.SI-ID [83684611](https://www.cobiss.si/id/83684611)]

LIPOVŠEK DELAKORDA, Saška, KOZEL, Peter, LEITINGER, Gerd, NOVAK, Tone. Malpighian tubules in harvestmen. *Protoplasma*. 2021, vol. 258, iss. 5, str. 1145-1153, ilustr. ISSN 0033-183X. DOI: [10.1007/s00709-021-01634-0](https://doi.org/10.1007/s00709-021-01634-0). [COBISS.SI-ID [57977603](https://www.cobiss.si/id/57977603)]

SERDINŠEK, Tamara, **LIPOVŠEK DELAKORDA, Saška**, LEITINGER, Gerd, BUT, Igor, STOŽER, Andraž, DOLENŠEK, Jurij. A novel in situ approach to studying detrusor smooth muscle cells in mice. *Scientific reports*. 2020, vol. 10, art. no. 2685, 1-12 str., ilustr. ISSN 2045-

2322. <https://www.nature.com/articles/s41598-020-59337-0#citeas>, DOI: [10.1038/s41598-020-59337-0](https://doi.org/10.1038/s41598-020-59337-0). [COBISS.SI-ID [512962616](#)]