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, 1st cycledegree	**/**	**3rd**	**6th**

Vrsta predmeta / Course type Obvezni / Compulsory

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: Sonja ŠKORNIK; Saška LIPOVŠEK

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Jih ni.	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:	**Objectives and competences:**
Študenti se seznanijo s · različnimi tehnikami in aparaturami za delo v biologiji in ekologiji. · različnimi metodami, ki se uporabljajo v biologiji in ekologiji. · pristopi zaobdelavo podatkov, predstavitev rezultatov in diskusijo.	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:	**Intended learning outcomes:**
Znanje in razumevanje: Študenti znajo · uporabiti različne ustrezne metode dela v biologiji in ekologiji. · uporabiti različne metode analize podatkov in predstavitve rezultatov.	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:	**Learning and teaching methods:**
· Predavanja · Seminarji · Laboratorijske vaje	· Lectures · Seminars · Laboratory work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
· Seminarska naloga in njena predstavitev	60	· Seminar work and its presentation
· Pisni izpit	40	· Written examination

Reference nosilca / Lecturer's references:

Sonja ŠKORNIK:

ŠKORNIK, Sonja, PIPENBAHER, Nataša. Primerjava funkcionalnih potez dominantnih in podrejenih rastlinskih vrst v suhih traviščih asociacije Scabioso hladnikianae-Caricetum humilis v Sloveniji = Relationship in plant functional traits between dominant and subordinate plant species in dry grassland association Scabioso hladnikianae-Caricetum humilis in Slovenia. *Hladnikia*, ISSN 1318-2293. [Tiskana izd.], apr. 2018, [Št.] 41, str. 26-41, ilustr. [COBISS.SI-ID 4713295]

DENGLER, Jürgen, PIPENBAHER, Nataša, ŠKORNIK, Sonja, et al. GrassPlot - a database of multi-scale plant diversity in Palaearctic grasslands. *Phytocoenologia*, ISSN 0340-269X, 2018, vol. 48, iss. 3, str. 331-347, ilustr., doi: 10.1127/phyto/2018/0267. [COBISS.SI-ID 24005128]

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. [COBISS.SI-ID 24068872]

Saška LIPOVŠEK:

LIPOVŠEK DELAKORDA, Saška, LEITINGER, Gerd, NOVAK, Tone, JANŽEKOVIČ, Franc, GORGOŃ, Szymon, KAMIŃSKA, Karolina, ROST-ROSZKOWSKA, Magdalena. Changes in the midgut cells in the European cave spider, Meta menardi, during starvation in spring and autumn. *Histochemistry and cell biology*, ISSN 0948-6143, Mar. 2018, vol. 149, iss. 3, str. 245-260, ilustr. https://link.springer.com/article/10.1007%2Fs00418-017-1623-z, doi: 10.1007/s00418-017-1623-z. [COBISS.SI-ID 23496712]

LIPOVŠEK DELAKORDA, Saška, NOVAK, Tone, JANŽEKOVIČ, Franc, BRDELAK, Nina, LEITINGER, Gerd. Changes in the midgut diverticula epithelial cells of the European cave spider, Meta menardi, under controlled winter starvation. *Scientific reports*, ISSN 2045-2322, 2018, vol. 8, art. no. 13645, str. 1-13, ilustr. https://www.nature.com/articles/s41598-018-31907-3, doi: 10.1038/s41598-018-31907-3. [COBISS.SI-ID 24023560]

LIPOVŠEK DELAKORDA, Saška, JANŽEKOVIČ, Franc, NOVAK, Tone. Ultrastructure of fat body cells and Malpighian tubule cells in overwintering Scoliopteryx libatrix (Noctuoidea). *Protoplasma*, ISSN 0033-183X, 2017, vol. 254, iss. 6, str. 2189-2199, ilustr., doi: 10.1007/s00709-017-1110-3. [COBISS.SI-ID 23074056]