Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	**Sistematika in filogenija nižjih rastlin**
Course title:	**Systematics and Phylogeny of Lower Plants**

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Ekologija z naravovarstvom, 1. stopnja		**1**	**2**
Ecology with Nature Conservation, 1st cycle		**1st**	**2nd**

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
30		**30**			**90**	**5**

Nosilec predmeta / Lecturer: Sonja ŠKORNIK

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Vsaka izmed naštetih obveznosti v načinih ocenjevanja mora biti opravljena s pozitivno oceno.	Each of the mentioned commitments must be assessed with a passing grade.

Vsebina: **Content (Syllabus outline):**

- Uvod: razlaga pojmov, pomen in cilji sistematike in taksonomije, razvoj klasifikacije in sistemov, metode klasifikacije, sistematski nivoji in poimenovanja, botanično delovanje na Slovenskem.
- Predstavitev skupin organizmov po organizacijskih tipih. (1) prokariotske alge (modrozelene cepljivke), (2) glive (prave glive), lišaji (3) evkariotske alge (evglenofiti, dinofiti, heterokontofiti, rodofiti, klorofiti), (4) embriofiti (mahovi, praprotnice).
- Za vsako skupino so na primerih njenih najbolj tipičnih in/ali znanih predstavnikov predstavljene njene morfološke značilnosti, načini razmoževanja in ekologija. Poudarjena sta evolucijski aspekt in filogenija.

- Introduction: explanation of basic term, meaning and aims of systematic and taxonomy, development of classification and systems, methods of classification, systematic categories and nomenclature, botanical activity in the past in Slovenia.
- Presentation of groups of plants according to organization types: (1) prokaryotic algae (Cynobacteriota), (2) fungi (Eumycota), lichens, (3) eukaryotic algae (Euglenophyta, Dinophyta, Heterokontophyta, Rhodophyta, Chlorophyta) (4) Embryophyta (Bryophyta, Pteridophyta).
- For each group the morphological characteristics, types of reproduction and ecology are presented on the basis of their typical and/or known representatives. The evolutionary aspect and phylogeny are stressed.

Temeljni literatura in viri / Readings:

- Reece, J. B., Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., & Jackson, R. B. (2011). *Campbell biology* (9th ed., str. 1263, 154). Benjamin Cummings.
- Sitte, P. (2002). *Lehrbuch der Botanik: für Hochschulen: begründet von E. Strasburger ... [et al.]* (35. Aufl., str. XIV, 1123). Spektrum Akademischer Verlag.)
- Mauseth, J. D. (1995). *Botany: an introduction to plant biology* (2nd ed., str. XXII, 794). Saunders College.

Cilji in kompetence:

Študenti se seznanijo z

- osnovnimi pojmi in definicijami v povezavi s sistematiko in taksonomijo.
- razvojem sistematike skozi zgodovino in najbolj uporabljenimi metodami.
- skupinami organizmov (morfologijo, razmnoževanjem, ekologijo), ki jih obravnavamo kot nižje »rastline« na osnovi njihovih najbolj tipičnih in znanih predstavnikov.
- izvorom in razvojem (evolucijo in filogenijo) posameznih predstavljenih skupin.

Objectives and competences:

Students get familiar with

- basic terms and definitions related to systematic and taxonomy.
- development of systematic through the history and the most often used methods.
- groups of organisms (morphology, reproduction, ecology), which are understood as the lower »plants« on the basis of their most typical and known representatives.
- the origin, evolution and phylogeny of separate represented groups.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Študenti znajo • razložiti osnovne pojme in navesti definicije v povezavi s sistematiko in taksonomijo. • opisati razvoj klasifikacije in sistemov skozi zgodovino. • našteti in opisati značilnosti izbranih najbolj uporabnih metod klasifikacije. • poimenovati najbolj tipične predstavnike posameznih osnovnih skupin organizmov, ki jih obravnavamo v okviru sistematike rastlin in opisati njihovo morfologijo, razmnoževanje in ekologijo. • pojasniti izvor in razvoj izbranih skupin.	Knowledge and understanding: Student are able to • explain basic concepts and definitions in systematic and taxonomy. • describe the evolution of classification and systems through the history. • list and describe the characteristics of selected mostly used classification methods. • name the most typical representatives of individual basic groups of organisms, which we treat in the frame of plant systematic and describe their morphology, reproduction and ecology. • explain the origin, evolution and phylogeny of separate plant groups.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja • Laboratorijske vaje	• Lectures • Laboratory work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Pisni izpit	**50**	Written exam
Laboratorijsko delo	**50**	Laboratory work

Reference nosilca / Lecturer's references:

ŠKORNIK, Sonja, PIPENBAHER, Nataša. A link between species abundance and plant strategies for semi-natural dry grasslands. *Plants*. Aug. 2024, vol. 13, iss. 16, [article no.] 2260, 17 str. ISSN 2223-7747. https://www.mdpi.com/2223-7747/13/16/2260, Digitalna knjižnica Univerze v Mariboru – DKUM, DOI: 10.3390/plants13162260, DOI: 20.500.12556/DKUM-90232. [COBISS.SI-ID 205162243]

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 Palaearctic 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. [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. [COBISS.SI-ID 64326915].