



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

Nosilec predmeta / Lecturer:

Sonja ŠKORNIK

Jeziki /

Languages:

Predavanja /

Lectures:

Vaje / Tutorial:

slovenski / Slovenian

slovenski / Slovenian

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

Vsaka izmed naštetih obveznosti v načinih ocenjevanja mora biti opravljena s pozitivno oceno.

Prerequisites:

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 (modrozeleni cepkljivke), (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 razmnoževanja 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.
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Temeljni literatura in viri / Readings:

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

Cilji in kompetence:

Študenti se seznajajo 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.
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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:

Znanje in razumevanje:

Študenti znajo

- razložiti osnovne pojme in navesti definicije v povezavi s sistematiko in taksonomijo.
- opisati razvoj klasifikacije in sistemov skozi zgodovino.
- naštet 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.

Intended learning outcomes:

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:

- Predavanja
- Laboratorijske vaje

Learning and teaching methods:

- 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](https://doi.org/10.3390/plants13162260), DOI: [20.500.12556/DKUM-90232](https://doi.org/10.500.12556/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](https://doi.org/10.1111/jvs.13050). [COBISS.SI-ID [78991619](#)].

ŠKORNIK, Sonja, PAUŠIČ, Igor, NOVAK, Tone, JANŽEKOVICH, Franc, IVAJNSIČ, 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](#)].