



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:

Jih ni.

Prerequisites:

No prerequisites.

Vsebina:

Content (Syllabus outline):

<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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:

<ul style="list-style-type: none"> • Reece, J.B., L.A. Urry, M.L. Cain, S.A. Wasserman, P.V. Minorsky, and R.B. Jackson. 2014. Campbell Biology, Tenth Edition. Benjamin Cummings. San Francisco. • Kadereit, J.W., C., Körner, P. Nick, U. Sonnewald, 2021: Strasburger - Lehrbuch der Pflanzenwissenschaften. Springer Spektrum, 38. vollständig überarbeitete & aktualisierte Auflage, Berlin & Heidelberg. • Mauseth, J. D., 2014: Botany. An introduction to Plant Biology. Jones and Bartlett Publishers, Massachusetts.

Cilji in kompetence:

<p>Študenti se seznanijo z</p> <ul style="list-style-type: none"> • 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.

Objectives and competences:

<p>Students get familiar with</p> <ul style="list-style-type: none"> • 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.
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- izvorom in razvojem (evolucijo in filogenijo) posameznih predstavljenih skupin.

- 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.
- naštetiti 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:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)	Delež (v %) / Weight (in %)	Assessment:
Pisni kolokvij in ustni zagovor kolokvija	50	Type (examination, oral, coursework, project): Written practical examinations and oral defence of written practical examination
Pisni izpit	50	Written examination

Reference nosilca / Lecturer's references:

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 Palaeartic 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/record/64326915)].

ŠKORNIK, Sonja, PAUŠIČ, Igor, KALIGARIČ, Mitja. Gorički travniki nekoč in danes. V: SENČUR PEČEK, Darja (ur.). *Vanekovo stoletje : ob stoletnici rojstva dr. Vaneka Šiftarja*. 1. izd. Maribor: Univerzitetna založba Univerze, 2019. Str. 189-205, ilustr. ISBN 978-961-286-305-0. <http://press.um.si/index.php/ump/catalog/view/436/439/708-1>. [COBISS.SI-ID [24767496](https://www.cobiss.si/record/24767496)].