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
Univerzitetni študijski program Biologija, 1. stopnja		**1; 1st**	**2.; 2nd**
Undergraduate university programme Biology, 1st degree			

Vrsta predmeta / Course type Obvezni/Obligatory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
30			**30**		**90**	**5**

Nosilec predmeta / Lecturer: Sonja ŠKORNIK

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisits:
Jih ni.	No.

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	• 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)

(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.	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., 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.
- Bresinsky, A., Körner, C., Kadereit, J.W., Neuhaus**,** G., Sonnewald. 2013. U. Strasburger's Plant Sciences: Including Prokaryotes and Fungi. Springer Verlag.
- Raven, P.H. 2005. Biology of Plants. W.H.Freeman and Company /Worth Publishers

Cilji in kompetence:	**Objectives and competences:**
• Razložiti osnovne pojme v povezavi s sistematiko in taksonomijo. • Predstaviti razvoj sistematike skozi zgodovino in najbolj uporabljene metode. • Predstaviti skupine organizmov (morfologijo, razmnoževanje, ekologijo), ki jih obravnavamo kot nižje »rastline« na osnovi njihovih najbolj tipičnih in znanih predstavnikov. • Razložiti izvor in razvoj posameznih predstavljenih skupin.	• To explain basic terms related to systematic and taxonomy. • To present development of systematic through the history and the most often used methods. • To present groups of organisms (morphology, reproduction, ecology), which are understood as the lower »plants« on the basis of their most typical and known representatives. • To explain the origin and evolution of separate represented groups.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Poznavanje osnovnih pojmov v povezavi s sistematiko in taksonomijo. • Poznavanje razvoja klasifikacije in sistemov skozi zgodovino. • Poznavanje nekaj najbolj uporabnih metod klasifikacije. • Poznavanje osnovnih skupin organizmov, ki jih obravnavamo v okviru sistematike	**Knowledge and understanding:** • To distinguish term systematic and taxonomy. • To know the evolution of classification and systems through the history. • To know some mostly used classification methods. • To know the basic groups of organisms, which we treat in the frame of plant

rastlin in sicer na osnovi morfologije, razmnoževanja in ekologije najbolj tipičnih predstavnikov posameznih skupin. • Razumevanje izvora in razvoja posameznih skupin. **Prenesljive/ključne spretnosti in drugi atributi:** • Prepoznavanje organizmov, ki jih obravnavamo v okviru sistematike nižjih rastlin in sicer na osnovi njihove morfologije, razvojnega cikla in ekologije.	systematic on the basis of the morphology, reproduction and ecology of the most typical representatives for the each group. To understand the origin and evolution of separate plant groups. **Transferable/Key Skills and other attributes:** • Ability to identify organisms that are discussed in the context of the scheme of lower plants and on the basis of their morphology, life cycle and ecology.

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

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Pisni kolokvij in ustni zagovor kolokvija	50	• Written practical examinations and oral defence of written practical examination
• Pisni izpit (pogoj za opravljanje sta opravljena kolokvija)	50	• Written examination (completed practical examination is prerequisite for taking the written examination)

Reference nosilca / Lecturer's references:

1. PIPENBAHER, Nataša, MASON, Norman W. H., ŠKORNIK, Sonja. Floristic and functional diversity of meadows from two neighboring biogeographic regions. *Annales, Series historia naturalis*, ISSN 1408-533X, 2014, letn. 24, št. 1, str. 49-60, ilustr. http://zdjp.si/sl/docs/annales/naturalis/n24-1/pipenbaher-mason-skornik.pdf. [COBISS.SI-ID 1536839364]

2. PIPENBAHER, Nataša, KALIGARIČ, Mitja, MASON, Norman W. H., ŠKORNIK, Sonja. Dry calcareous grasslands from two neighboring biogeographic regions: relationship between plant traits and rarity. *Biodiversity and conservation*, ISSN 0960-3115, 2013, vol. 22, iss. 10, str. 2207-2221, doi: 10.1007/s10531-013-0520-6. [COBISS.SI-ID 19978504]

3. MASON, Norman W. H., PIPENBAHER, Nataša, ŠKORNIK, Sonja, KALIGARIČ, Mitja. Does complementarity in leaf phenology and inclination promote co-existence in a species-rich meadow? : evidence from functional groups. *Journal of vegetation science*, ISSN 1100-9233. [Print ed.], Jan. 2013, vol. 24, iss. 1, str. 94-100, ilustr.

http://onlinelibrary.wiley.com.ezproxy.lib.ukm.si/doi/10.1111/j.1654-1103.2012.01451.x/pdf, doi: 10.1111/j.1654-1103.2012.01451.x. [COBISS.SI-ID 19304968]

4. PIPENBAHER, Nataša, ŠKORNIK, Sonja, CARVALHO, Gustavo Henrique de, BATALHA, Marco Antônio. Phylogenetic and functional relationships in pastures and meadows from the North Adriatic Karst. *Plant ecology*, ISSN 1385-0237, 2013, vol. 214, iss. 4, str. 501-519, doi: 10.1007/s11258-013-0185-y. [COBISS.SI-ID 19716616]

5. ŠKORNIK, Sonja, HARTMAN, Klavdija, KALIGARIČ, Mitja. Relation between CSR functional signatures of dry grasslands from two contrasting geological substrates = Relazione tra sigle funzionali CSR di pascoli aridi su due substrati geologici contrastanti. *Annales, Series historia naturalis*, ISSN 1408-533X, 2010, vol. 20, št. 2, str. 101-112, ilustr. [COBISS.SI-ID 18252040]