



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Vegetacijska ekologija
<b>Course title:</b>	Vegetation Ecology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Biologija in ekologija z naravovarstvom, 2. stopnja	/	1,2	2 ali 3
Biology and Ecology with Nature Conservation, 2 <sup>nd</sup> cycle	/	1st,2nd	2nd or 3th

**Vrsta predmeta / Course type**

Izbirni / Elective

**Univerzitetna koda predmeta / University course code:**

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
15	15	15			135	6

**Nosilec predmeta / Lecturer:**

Sonja Škornik

**Jeziki /**

**Predavanja / Lectures:**

Slovenski / Slovenian

**Languages:**

**Vaje / Tutorial:**

Slovenski / Slovenian

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

Jih ni.

**Prerequisites:**

No prerequisites.

**Vsebina:**

**Content (Syllabus outline):**

- Razlage pojmov: vegetacijska ekologija, vegetacija, rastlinske združbe
- Abiotski in biotski okoljski dejavniki, ki vplivajo na razvoj vegetacije
- Vegetacijski vzorci v prostoru in času
- Vrstna in funkcionalna pestrost rastlinskih združb
- Metode vzorčenja in analize podatkov pri proučevanju vegetacije
- Vegetacija Slovenije
- Ogroženi tipi vegetacije v Sloveniji: varovanje in upravljanje z njimi

- Definitions of terms: vegetation ecology, vegetation, plant communities
- Abiotic and biotic environmental factors affecting vegetation:
  - Vegetation patterns in space and time
  - Species diversity and functional diversity of plant communities
- Methods of vegetation sampling and vegetation data analysis
- Vegetation of Slovenia
- Vegetation types at risk in Slovenia: conservation and management

### Temeljni literatura in viri / Readings:

Temeljna literatura / Basic:

- Ellenberg, H., & Leuschner, C. (2010). Vegetation Mitteleuropas mit den Alpen: in ökologischer, dynamischer und historischer Sicht (Vol. 8104). Utb.
- Keddy, P.A., 2007: Plant and vegetation, Cambridge University Press.

Priporočena literatura / Recommended:

- Gurevitch, J., Scheiner, S. M., & Fox, G. A. (2006). Community properties and mechanisms. The The ecology of plants, 2nd edn. Sinauer, Sunderland, 215-216.
- der Maarel, E. 2005: Vegetation Ecology, Blackwell publishing.ecology of plants, 2nd edn. Sinauer, Sunderland, 215-216.
- ter Braak C. J. F. & Šmilauer P., 2002: CANOCO Reference Manual and CanoDraw for Windows User's Guide: Software for Canonical Community Ordination (version 4.5). Microcomputer Power, Ithaca NY, USA

### Cilji in kompetence:

Študenti se seznanijo s

- osnovnimi pojmi v vegetacijski ekologiji
- osnovnimi zakonitostmi, koncepti in teorijami v vegetacijski ekologiji
- okoljskimi dejavniki, ki vplivajo na razvoj vegetacije
- načini ugotavljanja in razlikami med vrstno pestrostjo in funkcionalno pestrostjo rastlinskih združb

### Objectives and competences:

Students get familiar with

- definitions of basic terms in vegetation ecology
- the basic laws, concepts and theories in vegetation ecology
- the environmental factors, that affect vegetation

- metodami vzorčenja in načini analize podatkov pri proučevanju vegetacije s poudarkom na modernih numeričnih metodah
- različnimi pristopi pri klasificiranju vegetacije na Zemlji
- osnovnimi tipi vegetacije Zemlje, Evrope in Slovenije
- najbolj ogroženimi tipi vegetacije v Slovenije, njihovim varovanjem in upravljanjem z njimi.

- methods for determination of species diversity and functional diversity of plant communities
- different methods for vegetation description and vegetation data analysis with main stress on modern numerical analysis
- different perspectives of vegetation classification
- main vegetation types of World, Europe and Slovenia
- vegetation types at risk in Slovenia, their conservation and management.

#### **Predvideni študijski rezultati:**

Znanje in razumevanje:  
Študenti znajo

- predstaviti osnovne pojme, definicije in teorije v vegetacijski ekologiji
- naštetih in opisati osnovne okoljske dejavnike, ki vplivajo na razvoj vegetacije
- pojasniti razliko med vrstno pestrostjo in funkcionalno pestrostjo rastlinskih združb
- opisati metode za določanje obeh tipov pestrosti
- opisati in razločevati med različnimi metodami vzorčenja in analize podatkov pri proučevanju vegetacije s poudarkom na modernih numeričnih metodah
- izbrati in uporabiti ustrezne metode za analizo vegetacijskih podatkov
- opisati različne pristope pri klasificiranju vegetacije na Zemlji
- poimenovati osnovne tipe vegetacije na Zemlji, v Evropi in v Sloveniji ter jih povezati z okoljskimi faktorji
- naštetih najbolj ogrožene tipe vegetacije v Slovenije, opredeliti razloge za njihovo ogroženost, predstaviti načine njihovega varovanja in upravljanja z njimi.

#### **Intended learning outcomes:**

Knowledge and understanding:  
Students are able to

- present basic concepts, definitions and theories in vegetation ecology
- enumerate and describe the basic environmental factors that affect vegetation development
- explain the difference between species and functional diversity of plant communities
- describe methods for determination of both types of diversity
- to describe and distinguish between different methods for vegetation sampling and data analysis with main stress on modern numerical analysis
- select and apply appropriate methods for the analysis of vegetation data
- describe different approaches of vegetation classification
- name the basic types of vegetation on Earth, in Europe and in Slovenia, and connect them with environmental factors- list the most endangered types of vegetation in Slovenia, identify the reasons for their threat, present the ways for their conservation and management.

**Metode poučevanja in učenja:**

<ul style="list-style-type: none"> <li>- Predavanja</li> <li>- Seminar</li> <li>- Terensko delo</li> </ul>
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**Learning and teaching methods:**

<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Seminar</li> <li>- Field work</li> </ul>
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Delež (v %) /

**Načini ocenjevanja:**

Weight (in %)

**Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt):	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
- Seminarska naloga in predstavitev	30%	- Seminar essay and its presentation
- Pisni izpit	70%	- Written exam

**Reference nosilca / Lecturer's references:**

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

KALIGARIČ, Mitja, ČUŠ, Jure, ŠKORNIK, Sonja, IVAJNSIČ, 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

DENGLER, Jürgen, PIPENBAHER, Nataša, ŠKORNIK, Sonja, et al. GrassPlot - a database of multi-scale plant diversity in Palearctic grasslands. *Phytocoenologia*, ISSN 0340-269X, 2018, vol. 48, iss. 3, str. 331-347,

ŠKORNIK, Sonja, MEZNARIČ, Marija, KALIGARIČ, Mitja. Factors affecting composition of gravel bar vegetation in middle reach of a lowland river. *Polish journal of ecology*, ISSN 1505-2249, 2017, vol. 65, iss. 2, str. 194-210,

ŠPUR, Natalija, ŠORGO, Andrej, ŠKORNIK, Sonja. Predictive model for meadow owners' participation in agri-environmental climate schemes in Natura 2000 areas. *Land use policy*, ISSN 0264-8377. [Print ed.], 2018, 73, str. 115-124.