



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Biodiverziteta
Course title:	Biodiversity

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Biologija, 1. stopnja		3.; 3 rd	5.; 5 th
Biology, 1 st cycle			

Vrsta predmeta / Course type Obvezni / Compulsory

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	15		30		105	6

Nosilec predmeta / Lecturer: Tina KLENOVŠEK

Jeziki / Predavanja / Lectures: slovenščina / Slovene
Languages: Vaje / Tutorial: slovenščina / Slovene

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

Vsebina:

- Definicija in razvoj pojma biodiverziteta
- Nastanek, pomen in aktualnost Konvencije o biološki raznovrstnosti
- Aktualna problematika biodiverzitete
- Vzroki upadanja biodiverzitete in izumiranja vrst
- Zakonodaja, strategije in ukrepi ohranjanja biodiverzitete od globalnega do lokalnega nivoja (Združeni narodi, Evropska unija, Slovenija)
- Lokalne in globalne vladne in nevladne organizacije, ki se ukvarjajo z biodiverzitetjo, ohranjanjem prostoživečih organizmov in narave, trajnostnim razvojem

Content (Syllabus outline):

- Definition and evolution of the concept of biodiversity
- Origin, importance and relevance of the Convention on Biological Diversity
- Current issues of biodiversity
- Causes of the decline in biodiversity and extinction of species
- Legislation, strategies and action plans to conserve biodiversity from the global to local level (United Nations, European Union, Slovenia)
- Local and global Governmental and Non-Governmental Organisations dealing with biodiversity, wildlife and nature conservation, sustainable development
- Levels of biodiversity: genetic, species, and ecosystem

- Nivoji biodiverzitet: genetski, vrstni in ekosistemski
- Vrstna pestrost in klasifikacija organizmov: pregled zgodovine, endosimbiotska teorija, filogenetska delitev
- Genetska pestrost na nivoju osebkov, populacij in vrst
- Biodiverzitet v globalnem merilu: temelji ekološkega in evolucijskega ozadja
- Vzorci biodiverzitet v odnosu do velikosti površine ozemlja, geografskih gradientov in drugih dejavnikov
- Indeksi pestrosti
- Ekosistemske funkcije in usluge
- Poglobljene študije primerov v obliki seminarjev, ki se vsebinsko navezujejo na vsebino predmeta.
- Laboratorijske vaje se navezujejo na vsebino predavanja s poudarkom na numerične analize in ocenah biodiverzitet.

- diversity
- Species diversity and classification of organisms: an overview of the history, endosymbiotic theory, phylogenetic classifications
 - Genetic diversity at the level of specimens, populations and species
 - Biodiversity on a global scale: ecological and evolutionary background
 - Patterns of biodiversity in relation to the surface area, geographical gradients and other factors
 - Diversity indices
 - Ecosystem functions and services
 - Case studies
 - In-depth studies of cases in the form of seminars and that are related to the course content.
 - Laboratory exercises related to the content of lectures focusing on numerical analyzes and biodiversity assessments.

Temeljni literatura in viri / Readings:

- Kryštufek, B. 1999: Osnove varstvene biologije. Tehniška založba Slovenije, Ljubljana.
- Levin, S. A. 2001: Encyclopedia of biodiversity. Academic Press, cop. San Diego.
- Sodhi N.S., P.R. Ehrlich 2010. Conservation Biology for All. Oxford University Press.
- Rosenzweig, M.L., (različne izdaje) Species Diversity in Space and Time. Cambridge University Press, New York

Cilji in kompetence:

Študentje bodo pridobili znanje o in razumevanje:

- osnovnih pojmov in konceptov povezanih z biodiverzitet
- naravnih dejavnik biodiverzitet in antropogenih groženj biodiverziteti
- organizacij, konvencij, zakonodaje, strategij in ukrepov povezanih z ohranjanjem biodiverzitet
- kazalnikov biodiverzitet in biogeografske porazdelitve biodiverzitet
- pomena ohranjanja biodiverzitet

Študentje bodo pridobili praktične sposobnosti iskanja in prepoznavanja relevantne literature, študija primerov, obdelave numeričnih podatkov, ocene biodiverzitet in predstavitve rezultatov in ugotovitev dobljenih z raziskavami biodiverzitet.

Objectives and competences:

Students will gain knowledge and understanding of:

- basic issues and concepts connected to biodiversity
 - natural drivers of biodiversity and anthropogenic threats to biodiversity
 - organisations, conventions, legislation, strategies and action plans connected to biodiversity conservation
 - indices of biodiversity and biogeographic distribution of biodiversity
- importance of biodiversity conservation

Students will acquire practical skills in relevant literature search and identification, case studies, numerical data processing, biodiversity assessments, and presentations of results and findings obtained from biodiversity research.

Predvideni študijski rezultati:

Po opravljenem kurzu naj bi bili študentje sposobni:

- navesti in pojasniti osnovne koncepte povezane z biodiverzitet
- navesti in pojasniti naravne dejavnike biodiverzitet in antropogene grožnje biodiverziteti
- naštetih organizacij, konvencij, zakone, strategije in

Intended learning outcomes:

After the accomplished course the students should be able to:

- identify and explain the basic concepts related to biodiversity
- indicate and explain the natural drivers of biodiversity and anthropogenic threats to biodiversity

<p>ukrepe povezane z ohranjanjem biodiverzitete na nacionalni, evropski in svetovni ravni</p> <ul style="list-style-type: none"> • navesti in razložiti različne kazalnike biodiverzitete ter biogeografsko porazdelitev biodiverzitete • pojasniti pomen ohranjanja biodiverzitete • poiskati in prepoznati relevantno literaturo, izvesti teoretično študijo primera, obdelati numerične podatke in podati oceno biodiverzitete ter predstaviti rezultate in ugotovitve dobljene z raziskavami biodiverzitete. 	<ul style="list-style-type: none"> • list organizations, conventions, legislations, strategies and action plans related to biodiversity conservation at the national, European and global level • identify and explain different biodiversity indices and biogeographic distribution of biodiversity • explain the importance of biodiversity conservation • find and identify relevant literature, to carry out a theoretical case study, to process numerical data, assess biodiversity and present results and findings obtained from biodiversity research.
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Metode poučevanja in učenja:

Learning and teaching methods:

<ul style="list-style-type: none"> • Predavanja • Seminarji • Laboratorijske vaje 	<ul style="list-style-type: none"> • Lectures • Seminars • Laboratory excersises
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Delež (v %) /

Načini ocenjevanja:

Weight (in %) /

Assessment:

<p>Vaje in poročilo iz laboratorijskih vaj se ovrednoti z opravl/ni opravl.</p> <ul style="list-style-type: none"> • Seminarska naloga in predstavitev • Pisni izpit <p>Pogoji za pristop k izpitu so:</p> <ul style="list-style-type: none"> - opravljene laboratorijske vaje - seminarska naloga in predstavitev 	<p>50</p> <p>50</p>	<p>Laboratory exercises and a report from laboratory exercises is evaluated with pass/fail grading.</p> <ul style="list-style-type: none"> • Seminar essay and presentation • Written exam <p>Prerequisites for the exam are:</p> <ul style="list-style-type: none"> - passed laboratory exercises - seminar essay and presentation
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Reference nosilca / Lecturer's references:

KLENOVŠEK T, JOJIĆ V. 2016. Modularity and cranial integration across ontogenetic stages in Martino's vole, *Dinaromys bogdanovi*. *Contributions to zoology*, 85 (3): 257-289.

KRYŠTUFEK B, JANŽEKOVIČ F, HUTTERER R, KLENOVŠEK T. 2017 Morphological evolution of the skull in closely related bandicoot rats : a comparative study using geometric morphometrics. *Hystrix : the italian journal of mammalogy*, 27 (2): 1-7.

JAKŠIĆ, Predrag N., JANŽEKOVIČ, Franc, KLENOVŠEK, Tina. Monitoring butterfly biodiversity on prime butterfly area Avala Mt. (Serbia) by the transect method (Pollard Walks) in the year 2017. The University thought : publication in natural sciences, ISSN 2560-3094, 2017, vol. 7, no. 2, str. 28-35.

KRYŠTUFEK B, KLENOVŠEK T, AMORI G, JANŽEKOVIČ F. 2015. Captured in "continental

archipelago" : phylogenetic and environmental framework of cranial variation in the European snow vole. *Journal of zoology*, 297 (4): 270-277.

KLENOVŠEK T, NOVAK T, ČAS M, TRILAR T, JANŽEKOVIČ F. 2013. Feeding ecology of three sympatric *Sorex* shrew species in montane forests of Slovenia. *Folia Zoologica*, 62 (3): 193-199.