



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Biogeografija
Course title:	Biogeography

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Univerzitetni program 1. stopnje Biologija		2.; 2nd	4.; 4th
Undergraduate university programme Biology, 1st cycle			

Vrsta predmeta / Course type:

Univerzitetna koda predmeta / University course code:

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

Nosilec predmeta / Lecturer:

Jeziki / Languages:

Predavanja / Lectures:	Slovenski/Slovenian
Vaje / Tutorial:	Slovenski/Slovenian

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

Prerequisites:

Vsebina:

Content (Syllabus outline):

- Definicije in zgodovina biogeografije
- Fizično okolje
- Distribucija osebkov, populacij in vrst na Zemlji
- Biomi, ekosistemi, združbe: vzorci razširjenosti, biogeografske regionalizacije
- Disperzije in migracije vrst
- Speciacija in izumrtje
- Kladistična, filogenetska in molekularna biogeografija
- Paleobiogeografija, vključno s pleistocensko dinamiko Evrope
- Endemizem, vikarianca
- Otoška biogeografija
- Ekografija: velikost, oblika in abundanca arealov in populacij
- Varstvena biogeografija
- Sonaravni pristopi varovanja biosfere
- Terminologija fitogeografije in zoogeografije
- Biogeografska regionalizacija

- Definitions and history of biogeography
- Physical environment
- Distribution of individuals, populations and species on Earth
- Biomes, ecosystems, communities: patterns of distribution
- Dispersion and migration of species
- Speciation and extinction
- Cladistic, phylogenetic and molecular biogeography
- Paleobiogeography, including Pleistocene dynamics in Europe
- Endemism, vicariance
- Island biogeography
- Ecography: size, shape, abundance of ranges and populations
- Conservational biogeography
- Sustainable methods for biosphere protection
- Phytogeographic and zoogeographic terminology; they learn biogeographical regionalisation on the basis of knowledge of vegetation evolution

Temeljni literatura in viri / Readings:

Temeljna literatura / Basic readings:

- Cox, C. B., Richard J. Ladle, Moore, P. D., 2019: Biogeography. An Ecological and Evolutionary approach. 10th edition, Wiley, ISBN: 978-1-119-48685-5 . (in druge izdaje/and other editions)
- Lomolino, M. V., Riddle B.R., Whittaker, R. J. 2016: Biogeography. 5th Edition. Oxford University press ISBN: 9781605354729 (in druge izdaje/and other editions)
- Lovrenčak, F., 2003: Biogeografija. Študijsko gradivo za geografe. Filozofska fakulteta, Ljubljana.

Priporočena literatura/ Recommended literature:

- Lomolino, M.V. Biogeography: A Very Short Introduction, 2020, Oxford University Press
- Whittaker R.J., Fernández-Palacios J.M., Matthews, T. J., 2023, 3rd edition, Oxford University Press, ISBN: 9780198868576 (in druge izdaje/and other editions)

Cilji in kompetence:

- Povežejo lastnosti fizičnega okolja z zakonitostmi razširjenosti osebkov, populacij in vrst na Zemlji.
- Naštejejo biome, ekosisteme, združbe ter pojasnijo njihove vzorce razširjenosti.

Objectives and competences:

- Students correlate the physical environment with distributions of individuals, populations and species on Earth.
- Students list biomes, ecosystems, communities and explain their patterns of distribution.

- Pojasnijo pojave disperzije in migracije ter speciacij in izumiranja.
- Navedejo glavne izsledke filogeografije in paleobiogeografije.
- Prikličejo primere endemizma in vikariance.
- Pojasnijo teorijo otoške biogeografije in osnove ekografije.
- Povežejo temeljna znanja biogeografije z uporabo v varstveni biologiji.
- Pojasnijo razprostranjenost rastlinstva in živalstva na Zemlji, s posebnim poudarkom na območju Slovenije.
- Naštejejo regionalizacijske kriterije biocon.

- Students explain the phenomena of dispersion, migration, speciation, and extinction.
- Students tell the basic principles of phylogeography and paleobiogeography.
- On case studies they identify examples of endemism and vicariance.
- Students explain island biogeography and principles of ecography.
- Students connect biogeography knowledge with conservational biology.
- They explain the plant and animal distribution on Earth, with an emphasis to the territory of Slovenia.
- They list the criteria of biozones regionalisation.

Predvideni študijski rezultati:

Po uspešno opravljenih obveznostih predmeta bodo:

- interpretirali zveze med značilnostmi fizičnega okolja ter evlucijskimi in ekološkimi vzorci razširjenosti organizmov na Zemlji;
- primerjali povezave izsledkov filogeografije, paleobiogeografije in ekografije v naravovarstvu;
- opisali biosfero in njene sestavine v Sloveniji
- predstavili razprostranjenosti lokalnih in regionalnih biocon na Zemlji;
- analizirali biogeografske vzorcev in procese v naravnem okolju preko izvedenih terenskih ekskurzij in vaj.

Intended learning outcomes:

- At the end of the course a successful student will be able to: interpret relations between environmental characteristics, and evolutionary and ecological based principles of distribution of organisms on the Earth;
- compare relations of phylogeography, paleobiogeography and ecography in conservational issues;
 - describe the biosphere and its compartments in Slovenia;
 - illustrate the dispersion of local and regional biozones on the Earth;
 - analyse biogeographical patterns and processes in natural environment within the field work.

Metode poučevanja in učenja:

- Predavanja
- Terenske vaje
- Individualno delo

Learning and teaching methods:

- Lectures
- Field work and excursion
- Individual work

	Delež (v %) /	
Načini ocenjevanja:	Weight (in %)	Assessment:

• Terensko delo (prisotnost, pisni test) pogoj za pristop k izpitu	20	• Field work (attendance, written exam) mandatory for the final exam
• Pisni izpit	80	• Written exam

Reference nosilca / Lecturer's references:

- ŠAJNA, Nina, UREK, Tina, KUŠAR, Primož, ŠIPEK, Mirjana. The importance of thermally abnormal waters for bioinvasions - a case study of *Pistia stratiotes*. *Diversity*. 2023, vol. 15, iss. 3, 421, 22
- ŠIPEK, Mirjana, HORVAT, Eva, ŠAJNA, Nina. Eastward range expansion of the ragweed leaf beetle (*Ophraella communa* LeSage, 1986) (Coleoptera, Chrysomelidae) in Slovenia. *BioInvasions Records*. 2023, vol. 12, iss. 2, str. 615-623
- ŠIPEK, Mirjana, HORVAT, Eva, ŠAJNA, Nina (avtor, korespondenčni avtor). First records of seed beetles *Megabruchidius dorsalis* (Fåhræus, 1839) and *M. tonkineus* (Pic, 1904) from three Balkan countries. *BioInvasions Records*. 2022, vol. 11, iss. 1, str. 101-109,
- HORVAT, Eva, ŠAJNA, Nina. First record of the Asian seed beetle *Megabruchidius dorsalis* (Fåhræus, 1839) (Coleoptera, Chrysomelidae, Bruchinae) in Croatia. *BioInvasions Records*. 2021, vol. 10, iss. 2, str. 477-482.
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