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 Ekologija z naravovarstvom		2.; 2nd	4.; 4th
Undergraduate university programme Ecology with Nature Conservation, 1st cycle			

Vrsta predmeta / Course type: Obvezni / Obligatory

Univerzitetna koda predmeta / University course code:

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

Nosilec predmeta / Lecturer: Nina ŠAJNA

Jeziki / Languages:	**Predavanja / Lectures:**	Slovenski/Slovenian
	Vaje / Tutorial:	Slovenski/Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Jih ni	None

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., Moore, P. D., & Ladle, R. J. (2016). *Biogeography: an ecological and evolutionary approach* (9th ed., str. XIII, 482 , 10 pril.). Wiley Blackwell. (in druge izdaje/and other editions)

Lomolino, M. V., Riddle, B. R., & Whittaker, R. J. (2018). *Biogeography: biological diversity across space and time* (5th ed., str. XV, 759). Sinauer.

Lovrenčak, F. (2003). *Osnove biogeografije* (str. 410). Filozofska fakulteta, Oddelek za geografijo.

Cilji in kompetence:	**Objectives and competences:**
• Povežejo lastnosti fizičnega okolja z zakonitostmi razširjenosti osebkov, populacij in vrst na Zemlji. • Naštejejo biome, ekosisteme, združbe ter pojasnijo njihove vzorce razširjenosti. • Pojasnijo pojave disperzije in migracije ter speciacij in izumiranja. • Navedejo glavne izsledke filogeografije in paleobiogeografije.	• 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. • Students explain the phenomena of dispersion, migration, speciation, and extinction.

• 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 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 biogegraphy knowledge with conservational biology. • They expain 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:	**Intended learning outcomes:**
Po uspešno opravljenih obveznostih predmeta bodo: • interpretirali zveze med značilnostmi fizičnega okolja ter evolucijskimi 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 vzorcv in procese v naravnem okolju preko izvedenih terenskih ekskurzij in vaj.	At the end of the course a successful student will be able to: interprete 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:	**Learning and teaching methods:**
• Predavanja • Terenske vaje • Individualno delo	• Lectures • Field work and excursion • Individual work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Pisni izpit	100	• Written exam

Reference nosilca / Lecturer's references:

Šipek, M., Horvat, E., & Šajna, N. (2023). Eastward range expansion of the ragweed leaf beetle (*Ophraella communa* LeSage, 1986) (Coleoptera, Chrysomelidae) in Slovenia. *BioInvasions*

Records, *12*(2), 615–623. https://dk.um.si/IzpisGradiva.php?id=87570Horvat, E., Šipek, M., & Šajna, N. (2024). Urban hedges facilitate spontaneous woody plants. *Urban Forestry and Urban Greening*, *96*(] 128336), 11. https://dk.um.si/IzpisGradiva.php?id=88564

Šajna, N., Urek, T., Kušar, P., & Šipek, M. (2023). The importance of thermally abnormal waters for bioinvasions - a case study of Pistia stratiotes. *Diversity*, *15*(3, [ ] 421), 22. https://dk.um.si/IzpisGradiva.php?id=88134

Šipek, M., Horvat, E., & Šajna, N. (2022). First records of seed beetles Megabruchidius dorsalis (Fåhræus, 1839) and M. tonkineus (Pic, 1904) from three Balkan countries. *BioInvasions Records*, *11*(1), 101–109. https://dk.um.si/IzpisGradiva.php?id=88628