



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Izbrana poglavja iz morfometrije
Course title:	Selected Topics in Morphometrics

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1 st or 2 nd	1.- 4.; 1 st -4 th
Doctoral Study Ecological Sciences, 3 rd cycle			

Vrsta predmeta / Course type: Izbirni/Elective

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
10	20				150	6

Nosilec predmeta / Lecturer: Tina Klenovšek

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

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

Vsebina:

Tradicionalna in geometrijska morfometrija.
Velikost vzorca in spremenljivke.
Teorija velikosti in oblike.
Analize velikosti.
Analize oblike.
Analize alometrije, ontogenije, filogenije,
ekomorfologije in/ali modularnosti.
Izbrane metode in analize prilagojene interesu
in doktorski temi posameznih študentov.

Content (Syllabus outline):

Traditional and geometric morphometrics.
Sample size and variables.
Theory of size and shape.
Analyses of size.
Analyses of shape.
Analyses of allometry, ontogeny, phylogeny,
ecomorphology and/or modularity.
Selected methods and analyses in accordance
with students' interests and doctoral thesis.

Temeljni literatura in viri / Readings:

Zelditch M.L., Swiderski D.L., Sheets H.D., Fink W.L. 2004. Geometric Morphometrics for Biologists: a primer. Elsevier. Amsterdam.

Sokal R.R., F.J. Rohlf, 2014. Biometry: the principles and practice of statistics in biological research. W.H. Freeman and com. San Francisco.

Klenovšek, T. 2014. Priročnik za uporabo geometrijske morfometrije v biologiji. Maribor: Fakulteta za naravoslovje in matematiko.

Cilji in kompetence:

Pridobiti sposobnost:

- načrtovanja morfometrične raziskave,
- izvedbe meritev,
- analize podatkov in interpretacije rezultatov morfometričnih analiz.

Sposobnost izvedbe naprednih statističnih analiz na biometričnih podatkih.

Objectives and competences:

Gaining ability:

- to plan a morphometric research,
- to conduct measurements,
- to analyse data and interpret results of morphometric analyses.

Ability to conduct advanced statistical analyses on biometric data.

Predvideni študijski rezultati:**Znanje in razumevanje:**

- načrtovanje, izvedba in ovrednotenje biometrične raziskave

Prenesljive/ključne spretnosti in drugi atributi:

- Sposobnost načrtovanja in izvedbe najzahtevnejših biometričnih meritev.
- Sposobnost analize in interpretacije najzahtevnejših biometričnih raziskav.

Intended learning outcomes:**Knowledge and understanding:**

- planing, conducting, evaluation of morphometric research

Transferable/Key Skills and other attributes:

- Ability to plan and execute the most demanding biometric measurements.
- Ability to analyze and interpret advanced biometric research.

Metode poučevanja in učenja:

- Predavanje
- Seminar

Learning and teaching methods:

- Lectures
- Seminar

Delež (v %) /

Weight (in %)

Načini ocenjevanja:**Assessment:**

Seminarska naloga

50

Seminar essay

Ustni izpit

50

Oral exam

Reference nosilca / Lecturer's references:

KRYŠTUFEK, Boris, JANŽEKVIČ, Franc, SHENBROT, Georgy I., IVAJNŠIČ, Danijel, KLENOVŠEK, Tina. Phenotypic plasticity under desert environment constraints: mandible variation in the dwarf fat-tailed jerboa, *Pygeretmus pumilio* (Rodentia: Dipodidae). *Canadian journal of zoology*, ISSN 0008-4301, 2019, vol. 97, no. 10, str. 940-951, doi: [10.1139/cjz-2019-0029](https://doi.org/10.1139/cjz-2019-0029). [COBISS.SI-ID [24815624](#)]

KLENOVŠEK, Tina, JOJIČ, V. Modularity and cranial integration across ontogenetic stages in Martino's vole, *Dinaromys bogdanovi*. *Contributions to zoology*, ISSN 1383-4517, 2016, vol. 85, no. 3, str. 257-289, ilustr. [COBISS.SI-ID [22437384](#)], [JCR, SNIP]

KRYŠTUFEK, Boris, JANŽEKVIČ, Franc, HUTTERER, Rainer, KLENOVŠEK, Tina. Morphological evolution of the skull in closely related bandicoot rats : a comparative study using geometric morphometrics. *Hystrix*, ISSN 0394-1914, 2016, vol. 27, no. 2, str. 1-7, ilustr., doi: [10.4404/hystrix-27.2-11639](https://doi.org/10.4404/hystrix-27.2-11639). [COBISS.SI-ID [22920456](#)], [JCR, SNIP]

KLENOVŠEK, Tina, KRYŠTUFEK, Boris. An ontogenetic perspective on the study of sexual dimorphism, phylogenetic variability, and allometry of the skull of European ground squirrel, *Spermophilus citellus* (Linnaeus, 1766). *Zoomorphology*, ISSN 0720-213X, 2013, vol. 132, iss. 4, str. 433-445, doi: [10.1007/s00435-013-0196-1](https://doi.org/10.1007/s00435-013-0196-1). [COBISS.SI-ID [19948296](#)], [JCR, SNIP]

KLENOVŠEK, Tina (avtor, fotograf). *Priročnik za uporabo geometrijske morfometrije v biologiji*. Maribor: Fakulteta za naravoslovje in matematiko, 2014. 78 str., ilustr. ISBN 978-961-6657-52-5. [COBISS.SI-ID [80534529](#)]

JANŽEKVIČ, Franc, ZAJC, Tina, BAVDEK, Srdan V., GOLOB, Zlatko, KLENOVŠEK, Tina. Prispevek k slovenski anatomski terminologiji : latinsko - slovenski, slovensko - latinski slovar ptičjih kosti = Contribution to Slovenian anatomical terminology : Latin - Slovenian, Slovenian - Latin dictionary of bird bones. *Acta biologica slovenica*, ISSN 1408-3671. [Tiskana izd.], 2015, vol. 58, št. 2, str. 77-92. [COBISS.SI-ID [3753295](#)]