

## UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Metode kineziološkega raziskovanja 2
<b>Course title:</b>	Research Methods in kinesiology 2

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študijski program		1	1 ali 2
Doctoral study program		1	1 or 2

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
30	15	15		65		5

Nosilec predmeta / Lecturer: doc.dr. Bojan Leskošek

Jeziki / Languages:	Predavanja / Lectures:	Slovenski/slovene
	Vaje / Tutorial:	Slovenski/slovene

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

Izpolnjevanje pogojev za vpis na doktorski študij Kineziologija in absolviran vsaj en dodiplomski kurz statistike (z vsaj 4 KT) in en kurz metodologije raziskovanja (z vsaj 4 KT).

### Prerequisites:

General conditions for enrolment into the Doctoral Programme of Kinesiology and having passed at least one course on statistics (with at least 4 ECTS credits) and one course on research methodology (with at least 4 ECTS credits) at the undergraduate level.

### Vsebina:

- pregled tipičnih problemov v kineziološkem raziskovanju in metod za njihovo reševanje (tipične napake v raziskovanju, manjkajoče vrednosti, eksaktni testi, samovzorčenje, Monte-Carlo, merjenje, vzorčenje in moč testov)
- analiza kategorialnih spremenljivk: analiza korespondence, loglinearna analiza
- analiza poskusov: zahtevnejši poskusni načrti (ponovljeni in longitudinalni podatki, večkratne odvisne spremenljivke, nenormalne odvisne spremenljivke, mešani modeli, gnezdeni in večstopenjski modeli) ter metode in orodja za njihovo analizo
- zahtevnejši regresijski modeli: binarna, politomna, ordinalna in drevesna regresija
- strukturno modeliranje
- kvalitativno raziskovanje

### Content (Syllabus outline):

- Overview of typical problems in kinesiological research and methods for their solving (common errors in research, missing values, exact tests, bootstrapping, Monte-Carlo method, measurement theory, sampling and power analysis);
- analysis of category variables: analysis of correspondence, loglinear analysis;
- analysis of experiments: complex designs (repeated and longitudinal data, multiple dependent variables, non-normal dependent variables, mixed models, nested and multi-level models) as well as methods and tools for their analysis;
- complex regression models: binary, polynomial, ordinal and tree regression.
- structural equation modeling
- qualitative research

**Temeljni literatura in viri / Readings:**

Tenenbaum G., M.P. Driscoll: Methods of Research in Sport Sciences. Meyer & Meyer Sport, Oxford, 2005.

Agresti A. Categorical Data Analysis, Wiley, 2013.

Faraway J.J: Extending the Linear Model with R. Chapman & Hall, 2006.

Kleinbaum D., Klein M. Logistic Regression. Springer, 2002.

Schinka, J. A., Velicer, W. F., & Weiner, I. B. (2003). Research methods in psychology. Wiley.

**Cilji in kompetence:**

Usposobiti študente za:

- za izbiro metodološkega pristopa, ki ustreza raziskovalnim ciljem in hipotezam ter drugim okoliščinam
- za razumevanje temeljnih konceptov izbranih statističnih metod
- za samostojno obdelavo podatkov z obravnavanimi metodami na osebnih računalnikih
- za pravilno razlago dobljenih rezultatov.

**Objectives and competences:**

Train students to correctly employ demanding methodological and statistical approaches, especially the multivariate ones which are frequently used in kinesiological research. In this framework, train students to:

- choose a methodological approach which corresponds to research objectives and hypotheses as well as other circumstances,
- understand the basic concepts of the selected statistical methods,
- independently process data using the studied methods on a personal computer,
- adequately explain the obtained results.

**Predvideni študijski rezultati:**

Znanje in razumevanje: (v skladu s cilji in kompetencami)

Študenti na predavanjih pridobijo osnovno znanje o predmetu (v primeru manjšega števila vpisanih študentov je predviden individualen študij pod vodstvom nosilca predmeta). Med vajami bodo študenti analizirali konkretne primere in jih reševali s primernim statističnim programom (npr. SPSS). Znanje, pridobljeno med predavanji, bodo utrjevali z domačimi nalogami ali projektnimi nalogami v povezavi z njihovim doktoratom. Vsak študent bo pod vodstvom nosilca predmeta študiral del svojega doktorata in ga predstavil v obliki seminarske naloge.

**Intended learning outcomes:**

Knowledge and understanding:

Students gain basic knowledge of the subject during classes (in case of a smaller number of enrolled students, individual study under the supervision of the lecturer is foreseen). During exercises, concrete cases will be analyzed and solved with adequate statistical software (ie. SPSS). Knowledge gained during courses will be consolidated with homework or project work related to their PhD. Each student will—under the supervision of the lecturer—study part of his PhD and present it as a form of seminar work.

**Metode poučevanja in učenja:**

Predavanja, seminarji in konzultacije, laboratorijske vaje

**Learning and teaching methods:**

Lectures, seminars, consultations, laboratory exercises

Delež (v %) /

**Načini ocenjevanja:**

Weight (in %) /

**Assessment:**

<p>Študent izbere en modul, pri katerem opravi vse obveznosti na predmetu. Ocena kakovosti znanstveno-raziskovalne seminarske naloge in njenega zagovora. Ustni izpit.</p>	<p><b>100 %</b></p>	<p>Type (examination, oral, coursework, project): The assessment encompasses the students' class work (during lectures and exercises), their written homework (including project work), and the homework and seminar presentation. Oral exam.</p>
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**Reference nosilca / Lecturer's references:**

LESKOŠEK, Bojan, BOHANEK, Marko, RAJKOVIČ, Vladislav. The use of expert methods in the orientation of children into different sports. Acta Univ. Carol., Kinesiol., 2002, vol. 38, no. 2, str. 33-44.

LESKOŠEK, Bojan. Errors in parameter estimates using EM algorithm with single imputation and different missingness mechanisms. V: MILANOVIĆ, Dragan (ur.), PROT, Franjo (ur.). 4th International Scientific Conference on Kinesiology "Science and Profession - Challenge for the Future", Opatija, Croatia, September 7-11, 2005. Science and profession - challenge for the future : proceedings book. Zagreb: Faculty of Kinesiology, University of Zagreb, 2005, str. 694-696.

LESKOŠEK, Bojan, STREL, Janko, KOVAČ, Marjeta. Differences in physical fitness between normal-weight, overweight and obese children and adolescents. Kinesiol. slov., 2007, letn. 13, št. 1, str. 21-30

BUČAR PAJEK, Maja, ČUK, Ivan, PAJEK, Jernej, KARACSONY, Istvan, LESKOŠEK, Bojan. Reliability and validity of judging in women's artistic gymnastics at University Games 2009. European journal of sport science, ISSN 1536-7290, 2012, vol. 12, no. 3, str. 207-215.

LESKOŠEK, Bojan, STREL, Janko, KOVAČ, Marjeta. Overweight and obesity in Slovenian schoolgirls, 1991-2006. Collegium antropologicum, ISSN 0350-6134, 2010, vol. 34, no. 4, str. 1303-1308.