UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta:	Biostatistika pri raziskovalnem delu
Course title:	Biostatistics in medical research

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
Splošna medicina, enovit magistrski študijski program		Šesti	11.
General medicine, Uniform master's degree study program		Sixth	11th

Vrsta predmeta (obvezni ali izbirni) /
Course type (compulsory or elective)

izbirni
elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial			Klinične vaje Clinical training	Druge oblike študija Other forms of study	Samost. delo Individual work	ECTS
18		**AV**	**LV**	**RV**			45	3
				27				

Nosilec predmeta / Course coordinator:

prof. dr. Pavel Skok

Jeziki /Languages:

Predavanja / Lectures:	slovenski/slovene
Vaje / Tutorial:	slovenski/slovene

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

Prerequisites for enrolling in the course or for performing study obligations:

Vsebina (kratek pregled učnega načrta):

Pomen računalniške tehnologije in statističnih orodij pri znanstveno raziskovalnem delu. Izbor in opredelitev problema v biomedicini, oblikovanje delovne in ničelne domneve (hipoteze) in nivojev tveganja za njeno zavrnitev, sistematično iskanje literature in virov ter njeno kritično proučevanje.

Osnovni pojmi statistike: populacija, vzorec, statistični znak. Osnove verjetnostnega računa: poskus, dogodek, verjetnost, neodvisnost. Naključne spremenljivke: diskretne, zvezne, pomembni tipi porazdelitev. Opisna statistika. Ocenjevanje parametrov. Preizkušanje statističnih domnev: osnovni parametrični in neparametrični preizkusi značilnosti. Linearna regresija, neodvisnost in koreliranost. Posebne metode v medicinski statistiki.

Content (syllabus outline):

Importance of the computing technology and statistical hardware in scientific research. Selection and definition of problem in biomedicine, formulation of work and null hypothesis and risk levels for its rejection, systematic searching for literature and other sources and critical approach.

Elementary statistic concepts: population, sample, significance. Basics of calculation of probability, experiment, event, probability, independence.

Random variables: discrete, continuous, important types of distributions. Descriptive statistic. Assessments of parametric. Testing statistical hypothesis: elementary parametric and nonparametric significance testing. Linear regression. Independence and correlation. Specific methods in medical statistics.

Temeljni literatura in viri / Reading materials:

1. Norman K. Denzin (Ed.), Yvonna S. Lincoln (Ed.) Handbook of Qualitative Research, 2nd ed. Sage publications, London 2000.
2. Altman DC. Practical statistics for medical research. Chapman&Hall. London 1996.
3. Matthews DE, Farewell VT. Using and understanding statistics. Karger, Basel, 1996.
4. Adamič Š. Temelji biostatistike, Medicinska fakulteta Ljubljana, 1995.

Cilji in kompetence:	**Objectives and competences:**
Študentom dati osnovno znanje o nalogah in metodah statistike v biomedicini, seznanitev z uporabo računalniške programske opreme za statistiko in kritičnim vrednotenjem izsledkov. Uporaba najpomembnejših knjižničnih in podatkovnih zbirk za primerjavo izsledkov. Objava rezultatov v obliki primarnega dokumenta/ raziskovalnega poročila/ predavanja.	Acquiring basic knowledge about role and methods of statistics in biomedicine, introduction to usage of statistics software and critical assessment of results. Application of the most important library and data bases for comparison of findings. Announcement of the results in the form of primary document/research report/lecture.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: razumevanje osnovnih metod biostatistike, uporaba statističnih testov pri testiranju domnev, tolmačenje rezultatov statističnih analiz, sposobnost kritične analize znanstveno raziskovalnih prispevkov.	Knowledge and Understanding: Understanding of biostatistics basic methods, testing statistical hypothesis, interpretation of the results of statistical analyses, critical analyse of scientific contributions.
Prenesljive/ključne spretnosti in drugi atributi: uporaba statistične analize pri raziskovalnem delu, računalnika in ustreznih programskih orodij, zavedanje možnih napak pri analizah, sklepanju in prikazovanju rezultatov.	Transferable/Key Skills and other attributes: Use of statistical analyse in research, use of computer and software tools, awareness of possible false outcomes, conclusion and presentation of results.

Metode poučevanja in učenja:	**Learning and teaching methods:**
Predavanja, uporaba računalniške programske opreme za statistiko.	Lectures, Usage of statistics software.

Načini ocenjevanja:	Delež (v %) / Share (in %)	**Assessment methods:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Method (written or oral exam, coursework, project):
Opravljen seminar	**100**	Completed seminar
ŠTUDIJSKE OBVEZNOSTI ŠTUDENTOV: /		ACADEMIC OBLIGATIONS OF STUDENTS: -
POGOJI ZA PRISTOP K POSAMEZNEMU PREVERJANJU ZNANJA: /		REQUIREMENTS FOR ACCESS TO INDIVIDUAL KNOWLEDGE CHECKING: -

Reference nosilca / Course coordinator's references:

PAVEL SKOK:

POPOVIĆ, Peter, ZORE, Andrej, ŠURLAN POPOVIĆ, Katarina, GARBAJS, Manca, SKOK, Pavel. Hepatic encephalopathy after transjugular intrahepatic portosystemic shunt in patients with recurrent variceal hemorrhage. Gastroenterology Research and Practice, ISSN 1687-630X. [Online ed.], 2013. http://www.hindawi.com/journals/grp/2013/398172/cta/, doi: 10.1155/2013/398172. [COBISS.SI-ID 4614463], [JCR, SNIP, WoS do 13. 5. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0, Scopus do 15. 1. 2014: št. citatov (TC): 1, čistih citatov (CI): 1, normirano št. čistih citatov (NC): 0]

GORENJAK, Mario, TRAPEČAR, Martin, GRADIŠNIK, Lidija, SKOK, Pavel, CENCIČ, Avrelija. A Novel polymerase chain reaction (PCR) based assay for authentication of cell lines or tissues from human, pig and chicken origin. Journal of bioscience and biotechnology. Print ed., 2012, letn. 1, št. 1, str. 1-7. [COBISS.SI-ID 3338284]

SKOK, Pavel, SINKOVIČ, Andreja. Upper gastrointestinal haemorrhage: predictive factors of in-hospital mortality in patients treated in the medical intensive care unit. Journal of international medical research, ISSN 0300-0605, 2011, vol. 39, no. 3, str. 1016-1027. http://www.jimronline.net/content/full/2011/103/1668.pdf. [COBISS.SI-ID 3995967], [JCR, SNIP, WoS do 5. 11. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, normirano št. čistih citatov (NC): 0, Scopus do 25. 9. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, normirano št. čistih citatov (NC): 0]

POPOVIĆ, Peter, ŠTABUC, Borut, SKOK, Pavel, ŠURLAN, Miloš. Transjugular intrahepatic portosystemic shunt versus endoscopic sclerotherapy in the elective treatment of recurrent variceal bleeding. Journal of international medical research, ISSN 0300-0605, 2010, vol. 38, no. 3, str. 1121-1133. http://www.jimronline.net/content/full/2010/97/1431.pdf. [COBISS.SI-ID 3696447], [JCR, SNIP, WoS do 3. 9. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, normirano št. čistih citatov (NC): 0, Scopus do 27. 8. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, normirano št. čistih citatov (NC): 1]

GORENJAK, Mario, SKOK, Pavel, CENCIČ, Avrelija. Novel promising functional cell models to study molecular events in metabolic syndrome. Nutritional therapy & metabolism, ISSN 1828-6232, 2012, letn. 30, št. 1, str. 34-41. [COBISS.SI-ID 3318572], [SNIP, Scopus do 31. 10. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0]