

ANALYSIS OF ASSOCIATION AND SURVIVAL	
GENERAL INFORMATION	
Course coordinator	Assoc. Prof. Vesna Ilakovac, PhD
Assistant/Associate	Kristina Kralik, MSc
Study Programme	Integrated undergraduate and graduate university study of Medicine
Status of the course	Elective
Year of study, semester	6th year, 11th semester
ECTS	2
Workload (hours)	Lectures (10); Exercises (15)
Expected number of students	30
COURSE DESCRIPTION	
Course objectives	
To enable students to properly select, independently use and interpret the results of statistical tests for the analysis of association and survival.	
Enrolment requirements and entry competencies	
Passed the course of the 2nd year of study Introduction to Medical Statistics or equivalent.	
Learning outcomes at the Programme level	
1.1., 2.2., 3.4., 3.5., 4.2.	
Learning outcomes (5-10)	
After listening to lectures, exercises, independent learning and passing the exam, students will be able to:	
<ol style="list-style-type: none"> 1. Correctly interpret the P value obtained by statistical testing. 2. Select the appropriate statistical test for the given association and survival testing problems. 3. Confirm the fulfillment of the preconditions for conducting the selected statistical test in the analysis of association and survival. 4. Interpret the results of the conducted data analysis. 5. Select the appropriate presentation of the results of the conducted data analysis. 	
Course content	
Lectures: P1. Introductory lecture. P2. Statistical tests. P3. Correlation. Bivariate linear regression P4. Multivariate linear regression. Logistic regression. P5. Survival analysis (life tables, survival curve, log-rank test). Exercises: V1. Making a decision on a statistical hypothesis. V2. Statistical tests. V3. Correlation and regression. V4. Multivariate linear and logistic regression. V5. Probability of survival. Reporting and interpretation of survival analysis results.	
Mode of teaching	
lectures, practicals	
Student obligations	

Attendance at all forms of classes is mandatory. A student may justifiably miss 30% of classes.

Monitoring student work (alignment of learning outcomes, teaching methods and grading)

Teaching activity	ECTS	Learning outcome	Student activity	Assessment methods	Grade points	
					Min.	Max.
Class attendance	0.2	1 – 5	Class attendance	Class record	0	10
Exercises	1.2	1 – 5	Solving problems	Homework presentation	34	60
Final exam	0.6	1 – 5	Independent work	Written exam	16	30
Total	2				50	100

Evaluation of final exam:

Percentage of accurate answers provided (%)	Grade points
60,00-69,99	16
70,00-79,99	20
80,00-89,99	24
90,00-94,99	28
95,00-100,00	30

Calculation of final grade:

To students who achieved 16 or more points in the final exam points earned during the course are added.

Since the study program schedule descriptive assessment of elective courses, the course leader awards the grade "passed" to a student who achieves 50 or more grade points in the course.

Required reading (available in the library and through other media)

Title	Number of copies in the library	Availability through other media
1. Ivanković D. et al. Osnove statističke analize za medicinare. Udžbenik. Biblioteka Udžbenici i priručnici Medicinskog fakulteta Sveučilišta u Zagrebu, 1988.	6	
2. Teaching materials of the course leader		Merlin e-learning system

Additional reading

- Petz B. Osnovne statističke metode za nematematičare, 5. izdanje, Naklada Slap, Jastrebarsko 2004.
- Lang T, Secic M. How To Report Statistics in Medicine: Annotated Guidelines for Authors, Editors, and Reviewers, 2nd edition. Philadelphia: American College of Physicians, 2006.
- Daniel WW. Biostatistics: a foundation for analysis in the health sciences. Udžbenik. John Wiley& Sons, Inc. 2013.

Course evaluation procedures

Anonymous, quantitative, standardized student survey on the subject and work of teachers conducted by the Office for Quality of the Medical Faculty Osijek.	
Note /Other	
E-learning is not included in the norm of course hours, but is used in teaching and contains teaching materials of the course leader, links to various pages, video and audio materials available on the WWW.	
RESEARCH METHODS IN THE PHYSIOLOGY OF MICROCIRCULATION	
GENERAL INFORMATION	
Course coordinator	Professor Ines Drenjančević, MD, PhD
Assistant/Associate	Assoc. Prof. Ana Stupin, MD, PhD Asst. Prof. Ivana Jukić, MD, PhD Asst. Prof. Zrinka Mihaljević, PhD
Study Programme	Integrated undergraduate and graduate university study of Medicine
Status of the course	Elective
Year of study, semester	6th year, 11th semester
ECTS	2
Workload (hours)	Lectures (5); Seminars (20)
Expected number of students	25
COURSE DESCRIPTION	
Course objectives	
Introduce students to research methods in circulatory physiology with the aim of an experimental approach in animal models. Demonstrate work with experimental animals and state-of-the-art methods for isolated blood vessels. Present and critically evaluate the plan and design of studies in the field of microcirculation.	
Enrolment requirements and entry competencies	
Passed exams from last years, passed physiology exam	
Learning outcomes at the Programme level	
1.1., 2.1, 3.5, 4.2	
Learning outcomes (5-10)	
<ol style="list-style-type: none"> 1. Present and classify the structural and functional properties of microcirculation in relation to tissue flow control mechanisms. 2. Critically evaluate the different methods used in the study of microcirculation in animal models 3. Compare different animal models. 4. Design a protocol for research in microcirculation. 5. Evaluate scientific literature in the field of microcirculation 	
Course content	
Lectures	
Microcirculation, structure and function. Acute and chronic mechanisms of tissue flow regulation. Seminars: Research methods in microcirculation. Problem approach and study design. Preparation and anesthesia of laboratory animals.. Preparation of solutions and experimental solution. Isolated cannulated compressed veins. Hyperbaric chamber. Western blot.	
Mode of teaching	

Lectures; Seminars						
Student obligations						
Attendance at all forms of classes is mandatory, and the student must access all knowledge tests. A student may justifiably miss 30% of each form of instruction. Unfinished exercise must be colloquial.						
Monitoring student work (alignment of learning outcomes, teaching methods and grading)						
Teaching activity	ECTS	Learning outcome	Student activity	Assessment methods	Grade points	
					Min.	Max.
Class attendance	0,5	1-5	Class attendance	Attendance list	5	20
Seminars	0,5	1-5	Attendance and active participation	Presentation of seminar work	15	30
Final exam	1,0	1-5	Literature search and preparation	Assay writing	30	50
Total	2				50	100
<p><i>Calculation of final grade:</i> To students who achieved 30 or more points in the final exam points earned during the course are added. Since the study program schedule descriptive assessment of elective courses, the course leader awards the grade "passed" to a student who achieves 50 or more grade points in the course.</p>						
Required reading (available in the library and through other media)						
Title				Number of copies in the library	Availability through other media	
1. Guyton i Hall, Medicinska fiziologija, Medicinska naklada, 13.izdanje, 2017.				10		
Additional reading						
1. Drenjancevic-Peric I, Phillips SA, Falck JR, Lombard JH. Restoration of normal vascular relaxation mechanisms in cerebral arteries by chromosomal substitution in consomic SS.13BN rats. Am J Physiol Heart Circ Physiol. 2005 Jul;289(1):H188-95. 2. Drenjancevic-Peric I, Greene AS, Kunert MP, Lombard JH. Arteriolar responses to vasodilator stimuli and elevated P(O ₂) in renin congenic and Dahl salt-sensitive rats. Microcirculation. 2004 Dec;11(8):669-77. 3. Mihaljević Z, Matić A, Stupin A, Frkanec R, Tavčar B, Kelava V, Tartaro Bujak I, Kolobarić N, Kibel A, Drenjančević I. Int Arachidonic Acid Metabolites of CYP450 Enzymes and HIF-1alpha Modulate Endothelium-Dependent Vasorelaxation in Sprague-Dawley Rats under Acute and Intermittent Hyperbaric Oxygenation. J Mol Sci. 2020 Sep 1;21(17):6353. doi: 10.3390/ijms21176353.						

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