

## Course descriptions

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## COURSE DESCRIPTION

<b>Academic year:</b> 2025/2026	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF/3-JZSA-003/22	<b>Course title:</b> Basics of statistic analyses
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning, distance learning	
<b>Type, volume, methods and workload of the student - additional information</b> Form of Study: in person Number of contact hours: 10 hours of lectures and 2 hours of practicals per week: per level/semester: 12 hours during one day	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Active participation	
<b>Learning outcomes:</b> Refreshing of the basics of statistical data analysis and statistical inferences. To know how to test hypotheses for the population mean. To understand the limitations of the nonparametric tests. To be able to decide between using parametric or nonparametric tests for a particular data. To be able to explore data, summarize data and test hypothesis for population mean as well as for contingency tables in jamovi. Ability to interpret results of statistical data analysis.	
<b>Class syllabus:</b> Population, sample, generalization, statistical inferences. Software jamovi. EDA – exploratory data analysis, histogram, density plot, boxplot, swarmplot, violin plot, quantile-quantile plot with 95% confidence band, assessment of normality. Descriptive statistic for location and scale, robustness. SD vs SEM. Confidence interval for the population mean. Fisher Null Hypothesis Significance Testing. Motivation for p-value, evidential scale. Neyman-Pearson hypothesis testing. Tests for the population mean: one-sample t test, Welch test, two sample t test, two sample paired t test, illustrative case studies. Nonparametric tests (WMW test, one sample and paired Wilcoxon test) and their limitations, illustrative case studies. Contingency tables. Chi-squared test and Fisher test, illustrative case studies. Practicals in jamovi – three case studies in test selection.	
<b>Recommended literature:</b> KIRKWOOD Betty and Jonathan STERNE. Essential Medical Statistics. Wiley-Blackwell, 2003. ISBN 0865428719 NAVARRO Danielle and David FOXCROFT. Learning statistics with jamovi: a tutorial for psychology students and other beginners. <a href="http://www.learnstatswithjamovi.com">http://www.learnstatswithjamovi.com</a>	
<b>Languages necessary to complete the course:</b>	

Slovak and English		
<b>Notes:</b>		
<b>Past grade distribution</b>		
Total number of evaluated students: 0		
ABS0	M	NEABS
0,0	0,0	0,0
<b>Lecturers:</b> doc. Mgr. Marián Grendár, PhD.		
<b>Last change:</b> 08.08.2023		
<b>Approved by:</b> doc. MVDr. Soňa Báľentová, PhD., doc. MUDr. Desanka Výbohová, PhD., prof. RNDr. Erika Halašová, PhD.		

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2025/2026	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF/3-AHE-005/22	<b>Course title:</b> Dissertation Defense
<b>Number of credits:</b> 30	
<b>Educational level:</b> III.	
<b>Course requirements:</b> <ul style="list-style-type: none"> <li>- obtaining at least 210 credits (in a 4-year full-time and 5-year part-time study)</li> <li>- submission of an application for a state examination permit - defense of the dissertation no later than 4 months before the date of completion of the standard length of study</li> <li>- authorship or co-authorship of a doctoral student of at least three scientific papers in extenso in internationally recognized journals registered in databases, such as Web of Science, Medline or SCOPUS as a basic condition for accepting an application for permission to defend a dissertation; in at least one of these works, the doctoral student is the first author</li> </ul>	
<b>Learning outcomes:</b> <ul style="list-style-type: none"> <li>- the graduate of the field has mastered the principles and methodology of scientific work, from the ability to orient in the latest knowledge of the field, through scientific formulation of the problem, assessment of the ethical side of scientific work, planning and implementation of research, scientific processing of obtained data, their interpretation to their presentation, including in international fora, and possible proposals for their application in practice.</li> <li>- the graduate of the subject Anatomy, Histology and Embryology 2 has the ability to work independently scientifically and bring their own solutions to problems in the field. He has the ability to contribute to the development of this field through scientific and pedagogical work.</li> </ul>	
<b>Class syllabus:</b> <ul style="list-style-type: none"> <li>- - scientific research of a current problem in the field or a multidisciplinary problem focusing on anatomy, histology and embryology and related fields (morphological sciences, eg pathological anatomy) according to the topicality and focus of the topic (macroscopic anatomy, histomorphology / cytology, embryology)</li> <li>- mastering the principles and methodology of scientific / experimental work, preparation of the text of the scientific publication in cooperation with the trainer in the form in extenso, especially in English</li> <li>- publishing and lecturing activities and active participation in scientific events</li> <li>- pedagogical activity (max. 4 hours per week / year = 208 hours / year = 104 hours / semester) only for full-time form</li> </ul>	
<b>State exam syllabus:</b>	
<b>Recommended literature:</b> <p>Mescher A.L.: Junqueirovy základy histologie. Galén, 2018, 558 s., ISBN 9788074923241  Lüllmann-Rauch R.: Histologie. Grada, 2012, 545 s. ISBN 978-80-247-3729-4  Adamkov M. et al.: Introduction to functional histology-textbook. Fourth Revised and Updated Edition. Nakladatelstvo P + M, 2017, 439 s., ISBN 978-80-89694-30-3  Sadler T.W.: Langmanova lékařská embryologie. Grada, 2010, 414 s., ISBN 9788024726403  Kapeller, K., Pospíšilová, V.: Embryológia človeka. Martin: Osveta, 2001, 370 s. ISBN 80-</p>	

8063-072-0

Adamkov M.: Apoptóza a antiapoptotický proteín survivin ako sľubný nádorový biomarker.

Vydavateľstvo Rank. Germany, 2020, ISBN 978-3-9812043-9-1

Čihák,R. Anatomie I. Praha: Grada, 2001. 497 s. ISBN 80-7169-970-5

Čihák,R. Anatomie II. Praha: Avicenum, 2002. 470 s. ISBN 80-247-0143-X

Čihák,R. Anatomie III. Praha: Grada, 1997. 655 s. ISBN 80-7169-140-2

**Languages necessary to complete the course:**

Slovak language / English language

**Last change:** 15.08.2023

**Approved by:** doc. MVDr. Soňa Báľentová, PhD., doc. MUDr. Desanka Výbohová, PhD., prof. RNDr. Erika Halašová, PhD.

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2025/2026	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF/3-AHE-004/22	<b>Course title:</b> Dissertation Examination
<b>Number of credits:</b> 20	
<b>Educational level:</b> III.	
<b>Course requirements:</b> <ul style="list-style-type: none"> <li>- obtaining at least 60 credits, including 20 credits for mandatory courses of the Methodology of Scientific Work, Introductory of Statistical Analysis and Examination in a Foreign / World Language as a condition for granting consent to take a dissertation exam (DE)</li> <li>- registration for DE within 24 months from the beginning of the study (in a 4-year full-time study)</li> <li>- registration for DE within 30 months from the beginning of the study (in a 5-year external study)</li> <li>- elaboration of a written part for the dissertation exam</li> <li>- successful answering of 2 theoretical questions from the field of Anatomy, histology and embryology and presentation of the basic theses of the written part of the dissertation exam</li> </ul>	
<b>Learning outcomes:</b> <ul style="list-style-type: none"> <li>- the graduate of the subject Anatomy, Histology and Embryology 1 has deep theoretical knowledge based on the current state of scientific knowledge in the field, masters the principles and methodology of scientific work and is able to perform scientific activities in the field of Anatomy, Histology and Embryology</li> <li>- has the ability to work independently and bring their own solutions to problems in the field and in related fields, especially in the profession of researcher and university teacher</li> </ul>	
<b>Class syllabus:</b> <ul style="list-style-type: none"> <li>- study of modern knowledge of anatomy, histology and embryology - structures and structures of organisms - the whole organism in toto and its components; i.e. organ systems, organs, tissues, cells, cell organelles, macromolecules of building and functional components of tissues and cells,</li> <li>- basics of immunohistochemistry and molecular biology,</li> <li>- apoptosis (regulatory mechanisms, morphology, biochemistry, physiology),</li> <li>- methodological and ethical bases of research work, principles of good laboratory work,</li> <li>- basics of statistical processing of obtained experimental data,</li> <li>- pedagogical activity (max. 4 hours per week / year = 208 hours / year = 104</li> </ul>	
<b>State exam syllabus:</b>	
<b>Recommended literature:</b> <p>Mescher A.L.: Junqueirovy základy histologie. Galén, 2018, 558 s., ISBN 9788074923241</p> <p>Lüllmann-Rauch R.: Histologie. Grada, 2012, 545 s. ISBN 978-80-247-3729-4</p> <p>Adamkov M. et al.: Introduction to functional histology-textbook. Fourth Revised and Updated Edition. Nakladatelstvo P + M, 2017, 439 s., ISBN 978-80-89694-30-3</p> <p>Sadler T.W.: Langmanova lékařská embryologie. Grada, 2010, 414 s., ISBN 9788024726403</p> <p>Kapeller, K., Pospíšilová, V.: Embryológia človeka. Martin: Osveta, 2001, 370 s. ISBN 80-8063-072-0</p> <p>Adamkov M.: Priečne pruhovaný sval a myofasciálna bolesť hlavy. Druhé doplnené a prepracované vydanie. Vydavateľstvo P+M Turany. 2020, 111 s. ISBN: 978-80-89694-69-3</p>	

Rajčáni, J., Adamkov, M.: Bunka a život. Druhé doplnené vydanie. Vydavateľstvo P+M Turany. 2020, 151 s. ISBN: 978-80-89694-65-5.  
Čihák, R. Anatomie I. Praha: Grada, 2001. 497 s. ISBN 80-7169-970-5  
Čihák, R. Anatomie II. Praha: Avicenum, 2002. 470 s. ISBN 80-247-0143-X

**Languages necessary to complete the course:**

Slovak language / English language

**Last change:** 08.08.2023

**Approved by:** doc. MVDr. Soňa Báľentová, PhD., doc. MUDr. Desanka Výbohová, PhD., prof. RNDr. Erika Halašová, PhD.

## COURSE DESCRIPTION

<b>Academic year:</b> 2025/2026	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF/3-JCJ-002/22	<b>Course title:</b> Foreign Language
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning, distance learning	
<b>Type, volume, methods and workload of the student - additional information</b> Form of teaching: full-time / part-time Type, scope, and method of educational activities: - self-study (course) in the range of 1-2 semesters depending on the basic knowledge of English / German - consultations before the exam in the range of about 4-6 hours - methods: self-study / full-time method / online consultation / e-mail contact Recommended range of teaching (in hours): Weekly: During the study period Study method: full - time, part - time, part - time, combined	
<b>Number of credits:</b> 10	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> - command of a foreign language at the level of min. B2 - passing the examination and, if necessary, 2-3 consultations before the examination - passing a foreign language exam	
<b>Learning outcomes:</b> The graduate of the course will acquire the language skills needed to obtain scientific information from foreign sources and present research results in foreign journals and at international conferences. They will learn about the possibilities of studying abroad, health care systems in English-speaking countries, ways of language education, possibilities of using IT in language education, but also about variants of the English language used in global communication.	
<b>Class syllabus:</b> English language: 1. Education and Education Systems 2. Language Education 3. Intercultural Communication 4. Study Abroad 5. Health Services 6. Differences between British and American English 7. Aspects of English Medical Language 8. Speaking at Medical Meetings: Presentation of a Paper	

<p>9. Writing a Scientific Research Article</p> <p>10. Academic Skills in Medical English and Information Technology</p> <p>German language:</p> <ol style="list-style-type: none"> <li>1. Bildung und Bildungssysteme</li> <li>2. Sprachunterricht</li> <li>3. Interkulturelle Kommunikation</li> <li>4. Im Ausland studieren</li> <li>5. Gesundheitsdienste</li> <li>6. Unterschiede zwischen britischem und amerikanischem Englisch</li> <li>7. Aspekte der englischen Medizinsprache</li> <li>8. Reden bei medizinischen Tagungen: Präsentation eines Themas</li> <li>9. Einen wissenschaftlichen Forschungsartikel schreiben</li> <li>10. Akademische Fähigkeiten in medizinischem Englisch und Informationstechnologien</li> </ol>		
<p><b>Recommended literature:</b></p> <p>Barnau, A., Berešová, J., Džuganová, B. (2021) Academic Skills in Medical English. A Guide for Postgraduate Students. Martin: Vydavateľstvo Turany.</p> <p>A monograph or professional textbook from the field that the postgraduate student studies according to the supervisor's recommendation.</p>		
<p><b>Languages necessary to complete the course:</b></p> <p>English language / German language</p>		
<p><b>Notes:</b></p> <p>Consultations and exams are provided individually during both semesters. The recommended and reserved time for personal meetings and exams is Friday.</p>		
<p><b>Past grade distribution</b></p> <p>Total number of evaluated students: 0</p>		
ABS0	M	NEABS
0,0	0,0	0,0
<p><b>Lecturers:</b> doc. Mgr. Erika Juríková, PhD., PhDr. Božena Džuganová, PhD., Mgr. Anna Barnau, PhD., Mgr. Nora Malinovská, PhD., Mgr. Desana Kiselová</p>		
<p><b>Last change:</b> 08.08.2023</p>		
<p><b>Approved by:</b> doc. MVDr. Soňa Báľentová, PhD., doc. MUDr. Desanka Výbohová, PhD., prof. RNDr. Erika Halašová, PhD.</p>		

## COURSE DESCRIPTION

<b>Academic year:</b> 2025/2026	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF/3-JMVP-001/22	<b>Course title:</b> Methodology of Science Research
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning, distance learning	
<b>Type, volume, methods and workload of the student - additional information</b> Lectures and seminar in the range of 16 teaching hours. Form of teaching: full-time / part-time Recommended range of instruction (in hours): 16 hours Weekly: During the study period: Study method: Presence	
<b>Number of credits:</b> 10	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Active participation in a 2-day course Methodology of Scientific Work	
<b>Learning outcomes:</b> By completing the course, the doctoral student acquires basic information - theoretical knowledge and practical experience in the field of methodology of scientific work, including current legislation necessary for the organization and successful completion of doctoral studies, grant opportunities, methodology of science and principles of evidence-based medicine, as well as legal and ethical aspects of scientific work in the biomedical sciences, public health and nursing. He also acquires basic knowledge and practical skills in the field of statistical methods and presentation of the results of scientific work.	
<b>Class syllabus:</b> <ul style="list-style-type: none"> <li>- Current state of doctoral studies in medical and non-medical health sciences in the Slovak Republic</li> <li>- Grant system used to support science in Slovakia and the European Union, general principles of preparation of scientific projects</li> <li>- The "motivation" factor in biomedical research and the life of a young researcher</li> <li>- Ethical aspects of biomedical research</li> <li>- Who's a good doctor? About science and art in medicine</li> <li>- Basics and practical demonstrations of the use of statistical methods used in biomedical sciences, public health, and nursing</li> <li>- Preparations and presentations of the results of scientific work (lecture, publication, written work for the dissertation exam and dissertation)</li> <li>- Legal aspects of scientific work in biomedical sciences, public health and nursing</li> <li>- Types of scientific methods</li> </ul>	

- Evidence Based Medicine, Plagiarism and publishing fraud
- Effective use of external resources, citation managers
- Bibliometric and citation databases (WoS / SCOPUS / CREPC / EviPUB) and publication literacy

**Recommended literature:**

Hanáček, J., Javorka, K., Čalkovská, A. a kol.: Základy vedeckovýskumnej práce : príručka pre doktorandov a mladých vedeckých pracovníkov. - 1. vyd. - Martin: Osveta, 2008. - 216 s.  
 Čalkovská, A. Bóriková, I., Danko, J. a kol.: Vedecká príprava : učebnica pre študentov medicíny. - 1. vyd. - Martin : Osveta, 2010. - 220 s. ISBN 978-80-8063-328-8. Vyšlo aj v angl. mutácii - Martin : Osveta, 2011.

**Languages necessary to complete the course:**

English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 0

ABS0	M	NEABS
0,0	0,0	0,0

**Lecturers:** prof. MUDr. Tibor Baška, PhD., doc. MUDr. Ing. Peter Celec, DrSc., doc. Mgr. Juraj Čáp, PhD., Mgr. Jana Ilavská, PhD., prof. MUDr. Michal Javorka, PhD., prof. RNDr. Ján Lehotský, DrSc., prof. MUDr. Dušan Meško, PhD., prof. MUDr. František Novomeský, PhD., prof. MUDr. Jana Plevková, PhD., Ing. Ján Strnádel, PhD., doc. MUDr. Martin Janík, PhD., doc. Mgr. Marián Grendár, PhD., prof. MUDr. Ľubomír Straka, PhD.

**Last change:** 05.11.2025

**Approved by:** doc. MVDr. Soňa Báľentová, PhD., doc. MUDr. Desanka Výbohová, PhD., prof. RNDr. Erika Halašová, PhD.