

## Course descriptions

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## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚO/J-S-VL-531/17	<b>Course title:</b> Ethics in medicine
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 1 / 1 <b>per level/semester:</b> 14 / 14 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Active participation in seminars. Two knowledge tests (continuous and final) written with min. 60% success rate. Overall evaluation of the course based on the results of the first and second test: A / 1 = 91 - 100%; B / 1.5 = 81 - 90%; C / 2 = 73 - 80%; D / 2.5 = 66 - 72%; E / 3 = 60 - 65%; Fx = less than 60%. Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> By completing the course, the student acquires knowledge of the basic problems of medical ethics and bioethics. The student understands the principles of medical ethics and their importance in education, practice, and research in the field of medicine. The student can apply knowledge to case studies, can analyse them, identify problems and dilemmas and propose solutions. The course contributes to the formation of moral attitudes of students to medicine, patients, and other health professions in a team.	
<b>Class syllabus:</b> Introduction to general ethics. Ethics, morality, and moral reasoning. Basic ethical theories in the context of medical ethics. Ethics and law. Introduction to medical ethics. Basic terminology of medical ethics. Hippocratic tradition and oath. Medical oath of the World Medical Association (Geneva Declaration). Principles of medical ethics and their application. Code of ethics. Dignity. Patients' rights. The doctor-patient relationship. Paternalism and partnership. Informed consent and the right to refuse treatment. Ethical aspects of providing information. Ethics at the beginning of human life (contraception, sterilization, assisted reproduction, abortion). Basics of thanatology. Dying with dignity. The issue of euthanasia and assisted suicide. Ethical aspects of biomedical research and publishing. Ethics committee.	
<b>Recommended literature:</b> Beauchamp L.T., Childress, F.J. Principles of Biomedical Ethics. 6th. ed. New York, Oxford : Oxford University Press, 2009, 417 p. ISBN 978-0-19-533570-5. Declaration on the Promotion of Patients' Rights in Europe.	

European Charter of Patients' Rights.  
Declaration of Geneva. World Medical Association. 2006.  
Medical Ethics Manual [on-line]. World Medical Association. URL: <https://www.wma.net/what-we-do/education/medical-ethics-manual/>

**Languages necessary to complete the course:**

English language

**Notes:**

The subject is supported by MS Teams.

**Past grade distribution**

Total number of evaluated students: 655

A	ABS0	B	C	D	E	FX
72,37	0,0	17,86	8,24	0,76	0,76	0,0

**Lecturers:** doc. Mgr. Juraj Čáp, PhD.

**Last change:** 23.03.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.IKG/J-S-VL-537/17	<b>Course title:</b> Internal Medicine Propedeutics (1)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 2 <b>per level/semester:</b> 42 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚFy/J-S-VL-515/16 - Physiology (1)	
<b>Course requirements:</b> 1. To attend both practicals. 2. To pass through the final evaluation. the final evaluation is performed by means of a written test. The pass-through criterion: 65%. Evaluation: A:93-100%, B:86-92%,C:79 -86%, D:72-78%,E:65-71%, Fx:64%.	
<b>Learning outcomes:</b> Obtaining of practical skills and theoretical knowledge in the field of Internal Medicine Propedeutics. Ability to perform complete history taking and physical examination and proposal of diagnostic plan with laboratory and auxiliary diagnostic methods in the fields of cardiology and pneumology.	
<b>Class syllabus:</b> Lectures: 1. Patient's history, its importance. Elaboration of the complex anamnestic findings. 2. Basic examination methods ( inspection, palpation, percussion, auscultation) Status praesens generalis. 3. Examination of the head and neck (physiological and pathological findings). 4. Examination of the chest and lungs (physiological findings). 5. Examination of the heart and vessels (physiological findings). 6. Pathological findings in the heart and heart valve disorders. 7. Origin and evaluation of the normal ECG recordings. 8. Evaluation of the pathological ECG recordings. 9. Auxiliary examination methods in diagnostics of cardiovascular diseases. 10. Auxiliary examination methods in vessel diseases and lymphatic system. 11. Pathological findings of respiratory tract and lungs. 12. Chest radiography – describing, interpretation, radiographic signs. Radiographic manifestation of the lung diseases. 13. Auxiliary examination methods in respiratory diseases. 14. Complex evaluation of the patient with cardiovascular and respiratory diseases. Practicals: 1. Patients history and elaboration of the complex anamnestic findings.	

2. Training of the basics of physical examination (inspection, palpation, percussion, auscultation). Status praesens generalis.
3. Procedures in examination of the head and neck ( physiological findings).
4. Training of the examination of the chest and lungs (physiological findings).
5. Training of the examination of the heart and vessels (physiological findings).
6. Auscultation findings in heart, pathological finding in valvular diseases of the heart.
7. Evaluation of the physiological ECG curves.
8. Evaluation of the pathological ECG curves. Test.
9. Diagnostical usage of the auxiliary examination methods in cardiovascular diseases (X-rax, ultrasonography, CT,laboratory parametres, scintigraphy etc.)
10. Clinical examination of the patients with the diseases of the vessels and lymphatic system, auxiliary methods in angiology.
11. Examination of the patients with obstructive bronchopulmonary disease and restrictive diseases of the lungs.
12. Interpretaion of the pathological X-ray slides.
13. Auxiliary examination methods in pneumology.
14. Elaboration of the model of the patients with cardiovascular or respiratory disease.

**Recommended literature:**

Novey, D.W. Rapid Acces Quide to the Physical Examination. Chicago: Year Boo Med. Publ.1988,634 pp. ISBN 0-8151-6434-3

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 665

A	ABS0	B	C	D	E	FX
47,37	0,0	23,76	16,24	9,02	3,61	0,0

**Lecturers:** prof. MUDr. Rudolf Hyrdel, CSc., doc. MUDr. Robert Vyšehradský, PhD., prof. MUDr. Marián Mokáň, DrSc.,FRCP Edin, doc. MUDr. Margita Belicová, PhD., prof. MUDr. Peter Galajda, CSc., doc. MUDr. Milan Ochodnický, CSc., doc. MUDr. Jurina Sadloňová, CSc., doc. MUDr. Matej Samoš, PhD., MUDr. Anna Bobčáková, MUDr. Ján Červeň, MUDr. Ľuboš Hamada, MUDr. Ivana Žiačiková, doc. MUDr. Peter Bánovčín, PhD., MBA, MUDr. Michal Demeter, PhD., MUDr. Martin Ďuriček, PhD., MUDr. Jakub Hoferica, MUDr. Peter Hyrdel, PhD., MUDr. Peter Lipták, PhD., MUDr. Lenka Nosáková, PhD., MUDr. Michal Prokopič, PhD., MUDr. Martin Schnierer, PhD., MUDr. Diana Vážanová, MUDr. Ľubomír Skladaný, PhD., MUDr. Jakub Benko, PhD., MUDr. Tomáš Bolek, PhD., MUDr. Matej Stančík, PhD., MUDr. Ľudovít Šutarík, CSc., MUDr. Martin Jozef Pěč, doc. MUDr. Dana Pridavková, PhD., prof. MUDr. Dušan Meško, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.IKG/J-S-VL-538/17	<b>Course title:</b> Internal Medicine Propedeutics (2)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 2 <b>per level/semester:</b> 42 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚFy/J-S-VL-516/16 - Physiology (2) and JLF.IKG/J-S-VL-537/17 - Internal Medicine Propedeutics (1)	
<b>Course requirements:</b> To attend both practicals. 2. To pass through the final evaluation. The final evaluation is performed by means of a written test. The pass-through criterion: 65%. Evaluation: A:93-100%, B:86-92%, C:79-86%, D:72-78%,E: 65-71%, Fx:64%	
<b>Learning outcomes:</b> Obtaining of practical skills and theoretical knowledge in the field of Internal Medicine Propedeutics. Ability to perform complete history taking and physical examination and proposal of diagnostic plan with laboratory and auxiliary diagnostic methods in the fields of gastroenterology, endocrinology, diabetology, hematology, occupational medicine and genetics.	
<b>Class syllabus:</b> Lectures: 1. Examination of the abdomen and the abdominal organs. 2. Examination of the patients with diseases of gastrointestinal tract. 3. Auxiliary and functional examination methods in gastroenterology and hepatology. 4. Examination of the liver and diagnostics methods in hepatology. 5. Examination of the kidneys and patients with kidney diseases. 6. Auxiliary examination methods and laboratory tests in nephrology.- 7. Examination of the patients with diabetes mellitus. 8. Examination of the joints, muscles and spine. 9. Hematology I. 10. Hematology II. 11. Examination of the patients with endocrine diseases, auxiliary examination methods in endocrinology. 12. Reliability of laboratory methods and basic conditions of their. 13. Examination of the patients with occupational diseases and acute intoxications ( alcohol, medicaments, drugs). 14. Examination of the genetic patients. Laboratory and auxiliary examinations. Practicals:	

1. Training of the examination of the abdomen and abdominal organs (physiological findings).
2. Examination of the patients with diseases of gastrointestinal tract and evaluation of the results.
3. Principles of evaluation of X-ray examination, ultrasonography, demonstration of fibroscopy, rectoscopy, colonoscopy, some invasive examinations.
4. Auxiliary examination methods in hepatology.
5. Examination of the patients and evaluation of nephrologic findings in patients with the diseases of uropoietic tract.
6. Function Examination of kidneys.
7. Examination of the patients with diabetes mellitus.
8. Training of the examination of the joints, muscles and spine (physiological findings). Pathological findings during examination of musculoskeletal apparatus. Tes.
9. Hematology I.
10. Hematology II.
11. Examination and evaluation of the results of laboratory examinations in patients with endocrine diseases.
12. Evaluation of laboratory findings and their interpretation.
13. Algorithm and interpretation of examinations of the patients with acute intoxications (alcohol, medicaments, drugs).
14. Credit test. Elaboration of the model patient's record.

**Recommended literature:**

Novey, D.W. Rapid Access Guide to the Physical Examination. Chicago: Year Book Med. Publ. 1988, 634 pp. ISBN 0-8151-6434-3

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 560

A	ABS0	B	C	D	E	FX
29,11	0,0	35,0	26,07	7,14	2,5	0,18

**Lecturers:** prof. MUDr. Rudolf Hyrdel, CSc., doc. MUDr. Oto Osina, PhD., prof. MUDr. Marián Mokáň, DrSc., FRCP Edin, doc. MUDr. Margita Belicová, PhD., prof. MUDr. Peter Galajda, CSc., doc. MUDr. Milan Ochodnický, CSc., doc. MUDr. Jurina Sadloňová, CSc., doc. MUDr. Matej Samoš, PhD., doc. MUDr. Robert Vyšehradský, PhD., MUDr. Anna Bobčáková, MUDr. Ján Červeň, MUDr. Ľuboš Hamada, MUDr. Ivana Žiačiková, doc. MUDr. Peter Bánovčín, PhD., MBA, MUDr. Michal Demeter, PhD., MUDr. Martin Ďuriček, PhD., MUDr. Jakub Hoferica, MUDr. Peter Hyrdel, PhD., MUDr. Peter Lipták, PhD., MUDr. Lenka Nosáková, PhD., MUDr. Michal Prokopič, PhD., MUDr. Martin Schnierer, PhD., MUDr. Diana Vážanová, MUDr. Ľubomír Skladaný, PhD., doc. MUDr. Juraj Sokol, PhD., prof. MUDr. Ján Staško, PhD., MUDr. Jakub Benko, PhD., MUDr. Ivana Ságová, PhD., MUDr. Tomáš Bolek, PhD., MUDr. Kristína Brisudová, MUDr. Matej Stančík, PhD., MUDr. Ľudovít Šutarík, CSc., MUDr. Michal Mokáň, PhD., MUDr. Martin Jozef Pěč, doc. MUDr. Dana Prídavková, PhD., prof. MUDr. Dušan Meško, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚMBI/J-S-VL-597/17	<b>Course title:</b> Laboratory Practicals in Molecular Biology
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 1 per level/semester: 14</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 1	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> Subject Molecular biology (JLF.ÚMB/J-S-VL-590/17)	
<b>Course requirements:</b> Participation on laboratory examinations and delivery of laboratory protocol. Scale of assessment (preliminary/final): Final grade	
<b>Learning outcomes:</b> The graduate acquires the basic practical skills in molecular biology methods – DNA extraction, PCR, real-time PCR, Sanger sequencing and fragment analysis design, pipetting and interpretation.	
<b>Class syllabus:</b> Practical exercise: Basic methods of molecular biology applied in molecular diagnostics – isolation of DNA, basics of primer design, Ensembl database, preparation of PCR protocol, preparation of real time PCR protocol, preparation of dideoxysequencing workflow, pipetting of PCR, real-time PCR and dideoxysequencing, interpretation of PCR, real-time PCR, dideoxysequencing and fragment analysis experiments.	
<b>Recommended literature:</b> Fast Real-Time PCR System <a href="http://www3.appliedbiosystems.com/cms/groups/mcb_support/documents/generaldocuments/cms_041436.pdf">http://www3.appliedbiosystems.com/cms/groups/mcb_support/documents/generaldocuments/cms_041436.pdf</a> p. -9-14, 33-47. DNA sequencing and capillary electrophoresis <a href="http://www3.appliedbiosystems.com/cms/groups/mcb_support/documents/generaldocuments/cms_041003.pdf">http://www3.appliedbiosystems.com/cms/groups/mcb_support/documents/generaldocuments/cms_041003.pdf</a> p. 2-14	
<b>Languages necessary to complete the course:</b> English	
<b>Notes:</b> No.	



<b>Past grade distribution</b>						
Total number of evaluated students: 8						
A	ABS0	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Zora Lasabová, PhD., doc. Mgr. Tatiana Burjanivová, PhD.						
<b>Last change:</b> 24.03.2022						
<b>Approved by:</b>						

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.PK/J-S-VL-532/17	<b>Course title:</b> Medical Psychology and Basics of Communication
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 1 / 1 <b>per level/semester:</b> 14 / 14 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> 0	
<b>Course requirements:</b> Requirement to apply for exam: - participation in practicals at least 5 times (10 lessons) - participation in lectures at least 2 times - favourable results during running controls - favourable results in test Check in the course of practicals: - Evaluation till the end of 7th week: control questions during practical exercises - Evaluation till the end of 14th week: control questions during practical exercises Evaluation of the results of running controls: A/1 = 93 – 100 %; B/1,5 = 86 – 92 %; C/2 = 79 – 85 %; D/2,5 = 72 – 78 %; E/3 = 65 – 71 %, Fx = less than 65 % The share of the running controls on final evaluation of the subject: 10 % Final evaluation: oral exam or test Scale of assessment (preliminary/final): 10/90	
<b>Learning outcomes:</b> After completion of the subject the student has a basic knowledge in psychological aspects in medicine aimed to psychological aspects of the disease and the sick person/patient, medical examinations, treatment and health environment. Student knows characteristics and assessment of mental functions, principles of psychosomatic and somatopsychic relations. He/she has basic knowledge in specifics of verbal and nonverbal communication in medicine.	
<b>Class syllabus:</b> Medical psychology – basic terms, characteristics and content of the field. Psychosomatic and psychophysiology, psychosomatic and somatopsychic relations. Psychopathogenesis. Bio-psychosocial model of disease.	

Mental functions – basic characteristics, methods of examination, issues of normality and pathology, behaviour and experiencing (externalizing and internalizing behavior), state and trait variables, psychopathology.

Psychological aspects of the disease and the sick person/patient. Experiencing and elaboration of disease (adaptation to disease, disorder, illness). Pathopsychology. The issue of pain, aggravation, simulation, dissimulation, self-harm, deliberate induction of symptoms, alexithymia, types of patient's behavior, problems of terminal states and dying.

Psychological problems of medical examination, observation and interview as a diagnostic tool in medicine. Psychological diagnosis and its importance in medical practice.

Psychological problems of treatment. Psychological methods of treatment, psychotherapy and its mechanisms. Psychological crisis, crisis intervention.

Psychological problems of health environment, outpatient and inpatient care.

Psychological aspects of the doctor's work and other health professionals. The issue of burnout, coping with the burden and frustrating experiences, problems of cooperation and rivalry. Medical ethics. Iatropathogenesis.

Mental hygiene, prevention, specific psychohygienic problems.

Verbal and nonverbal communication and its importance in medicine. Communication with specific groups of patients. Patient noncompliance.

Specifics of communication in different developmental stages. Communication with pediatric patient, geriatric patient. Communication with seriously ill and dying patients.

Communication with patients with acute and non-acute mental disorder, with physical, sensory and intellectual disabilities.

**Recommended literature:**

Compulsory literature:

McManus IC. Psychology in Medicine. Butterworth 1992

Ayers S., Visser R. Psychology for medicine. Sage, Los Angeles 2011, 530 p.

Lloyd M, Bor R. Communication skills for medicine. Elsevier, 2009, 222 p.

Recommended literature:

Alder B. et al. Psychology and sociology applied to medicine. 3rd. ed. Elsevier, Edinburgh 2009, 182 p.

**Languages necessary to complete the course:**

english

**Notes:**

**Past grade distribution**

Total number of evaluated students: 551

A	ABS0	B	C	D	E	FX
64,97	0,0	20,69	10,34	2,0	2,0	0,0

**Lecturers:** doc. MUDr. Igor Ondrejka, PhD., MUDr. PhDr. Igor Hrtánek, PhD., MUDr. Miloslav Oppa, PhD.

**Last change:** 17.03.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚMI/J-S-VL-518/17	<b>Course title:</b> Microbiology (2)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 3 <b>per level/semester:</b> 42 / 42 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚMI/J-S-VL-517/17 - Microbiology (1)	
<b>Course requirements:</b> - it is obligatory to be present at practicals (1 absence is tolerated) - 1 test during the semester - 2 oral presentations according the schedule <b>Exam:</b> Ordinary term: Written exam test. Retake: oral exam only. Written exam test - The final grade is determined by counting the points for the test during semester and the final exam test. Oral exam - The oral exam consists of 4 questions. Each one is evaluated separatly. No question could be graduated Fx for successfull exam. Scale of assessment (preliminary/final): 25% / 75%	
<b>Learning outcomes:</b> The student receives information from specialised bacteriology, virology, parasitology and mycology about the structure, metabolism, pathogenic potential and pathogenesis of human infectious diseases, antibiotics used for the treatment as well as methods of identification. The student is trained to use principal diagnostical procedures, to understand their theoretical background, indication and interpretation. The student is able to manage the most common way of sampling of infectious materials, to process them for microscopi, cultivation, identification and ATB suscptibility and tools of pathogenity testing. The students knows most important microbial ethiology of infectious of respiratory, gastrointestinal, urogenital tract, skin, soft tissues, central nervous system in different age groups including fetus, newborn, pre-school age children, children, adolescent, adult, geriatric patients, pregnant women and immunocompromised persons.	
<b>Class syllabus:</b> Bacteriology G + cocci staphylococci. streptococci Bacteriology G – cocci neisseria, haemophilus Bacteriology, G - rods, enterobacteriaceae Bacteriology, G - rods, nonfermenting rods Strana: 2 Bacteriology, G + rods, anaerobes	

Spirochetales, chlamydia, mycoplasma Introduction to virology Virology, DNA viruses , RNA viruses Hepatitis viruses, prions, HIV Medical mycology, medical parasitology RTI, STI, GIT and UGT infection – ethiology CNS, blood infection, bacterial intoxication – ethiology Ethiology of infections of newborne, old patient, fetus infection Hospital infection and opportunistic infections ethiology Direct and indirect diagnostical methods New approaches in identification of infectious ethiology						
<b>Recommended literature:</b> Murray, P.R., Rosenthal, K.S., Pfaller, M.A. Medical Microbiology. 7th ed. Philadelphia: Elsevier Saunders, 2013. 874 s. ISBN 978-0-323-08692-9. Murray, P.R., Rosenthal, K.S., Pfaller, M.A. Medical Microbiology. 8th ed. Philadelphia: Elsevier Saunders, 2016. 836 s. ISBN 978-0323-299956-5. Harvey, R. A., Champe, P.C., Fischer, B.D. Lippincott´s Illustrated Review Microbiology. Lippincott Williams&Wilkins, 2007. 438 s. ISBN 13: 978-0-7817-8215-9 Greenwood, D., Barer, M., Slack, R., Irwing, W. Medical Microbiology. 18.ed. Edinburgh: Elsevier Saunders, 2012. 778 s. ISBN 978-0-7020-4089-4. Neuschlová, M., Kompaníková, J., Sadloňová, V., Nováková, E.: Immunology – basic laboratory tests. Martin : Portal JLF UK 2021; 152 s. ISBN 978-80-8187-110-8. <a href="https://portal.jfmed.uniba.sk//articles.php?aid=450">https://portal.jfmed.uniba.sk//articles.php?aid=450</a> . Neuschlová, M., Nováková, E., Kompaníková, J., Sadloňová, V.: A to Z Glossary of Immunological Terms. Martin : Portal JLF UK 2021; 80 s. ISBN 978-80-8187-088-0. <a href="https://portal.jfmed.uniba.sk//articles.php?aid=435">https://portal.jfmed.uniba.sk//articles.php?aid=435</a> . Reading from MEFANET and faculty web site for microbiology						
<b>Languages necessary to complete the course:</b> English language						
<b>Notes:</b>						
<b>Past grade distribution</b> Total number of evaluated students: 648						
A	ABS0	B	C	D	E	FX
22,38	0,0	37,5	26,23	8,33	5,25	0,31
<b>Lecturers:</b> doc. MUDr. Elena Nováková, PhD., MUDr. Jana Kompaníková, PhD., MUDr. Martina Neuschlová, PhD., MUDr. Vladimíra Sadloňová, PhD.						
<b>Last change:</b> 06.04.2022						
<b>Approved by:</b>						

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚMBI/J-S-VL-590/17	<b>Course title:</b> Molecular Biology
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 1 / 1 <b>per level/semester:</b> 14 / 14 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚLBI/J-S-VL-513/22 - Medical Biology and Genetics (2) and JLF.ÚLBch/J-S-VL-509/15 - Medical Chemistry (2)	
<b>Recommended prerequisites:</b> Basic knowledge of molecular biology (structure of DNA, replication, transcription, translation) and genetics (Mendelian inheritance).	
<b>Course requirements:</b> 100% participation on seminars and practical, knowledge test - test and project Scale of assessment (preliminary/final): Sum of preliminary results determines the final grade.	
<b>Learning outcomes:</b> The graduate should acquire basic overview about medical molecular biology and molecular genetics and knowledge concerning application of the methods of molecular biology in medicine general, understand the basic principles of molecular diagnostics, precision personalized medicine and interpretation of the results of the molecular-genetic examinations.	
<b>Class syllabus:</b> Organization of the human genome, human genome sequencing projects, basic free accessible databases in medicine. Importance and testing of DNA polymorphisms in pharmacogenetics. . Methods of molecular biology in medicine and diagnostics – PCR, real-time PCR, droplet digital PCR, fragment analysis, Sanger sequencing and next-generation sequencing (NGS). Variant classification according to sequence change and the functional effect, nomenclature for describing variants, gain of function mutations, loss of function mutations. Genetic testing, molecular diagnostics of monogenic disorders, usage of free accessible internet resources and databases (OMIM, ClinVar, dbSNP). The evolution of cancer, multistep model of carcinogenesis cancer critical genes, driver and passenger mutations. Relevance of the detection of genetic changes for diagnosis, prognosis and therapy prediction in different cancer, methods of molecular biology used in diagnosis and follow-up of cancer, microsatellite instability. Non-invasive molecular diagnostics from circulation – cancer, prenatal testing. Targeted personalized and gene therapy – application of NGS, possibilities and perspectives. Annotation of practical lecture. Practical lectures are carried out in form of seminars with practical demonstrations. Methods of molecular biology – genotyping in pharmacogenetics, SNP and point mutation analysis using PCR, result interpretation from allelic	

discrimination plot and digital PCR. Principles of DNA sequencing according Sanger, application of BLAST for evaluation, , description and interpretation of results, sequencing analysis of point mutation, small deletion and insertion. Examples of molecular diagnostic and result interpretation of monogenic diseases and cancer, working with OMIM, ClinVAR.

**Recommended literature:**

T . Strachan, J. Goodship, P. Chinnery: Genetics and Genomics in Medicine, 2015 by Garland Science, Taylor and Francis Group, NewYork and London (selected chapters) ISBN 978-0-8153-4480-3

[www.ncbi.nlm.nih.gov/omim/](http://www.ncbi.nlm.nih.gov/omim/) - Online Medelian Inheritance in Man

Zora Lasabová: Molekulová biológia v medicíne a genetike. Vysokoškolské učebné texty. vydanie. Vydavateľstvo Asklepios 2011. ISBN 978-80-7167-164-0

**Languages necessary to complete the course:**

English

**Notes:**

No.

**Past grade distribution**

Total number of evaluated students: 656

A	ABS0	B	C	D	E	FX
80,95	0,0	14,33	4,73	0,0	0,0	0,0

**Lecturers:** doc. RNDr. Zora Lasabová, PhD., doc. Mgr. Tatiana Burjanivová, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚPA/J-S-VL-533/17	<b>Course title:</b> Pathological Anatomy (1)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 4 / 3 <b>per level/semester:</b> 56 / 42 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚA/J-S-VL-501/17 - Anatomy (1) and JLF.ÚA/J-S-VL-502/15 - Anatomy (2) and JLF.ÚHE/J-S-VL-505/15 - Histology and Embryology (1)	
<b>Course requirements:</b> I. to absolve succesfully at least 13 of 14 practical lectures/seminars. Student has to appologize the absence immediatelly and personally. Appologized absences (more than 1) require to absolve given practicum in the last compensatory 15th week of the WS, II. successful completing of the central test at the level of at least 12 of 20 available points (i.e. 60%) a III. successful completing of all 6 „small“ tests at the level of at least 18 of 30 available points (i.e. 60%). Scale of assessment (preliminary/final): Tests	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b> Introduction to pathology. Methods in pathology. Death and post.mortal changes. Regressive changes: Necrosis, apoptosis, atrophy. Intracellular and extracellular errors of metabolism of lipids, carbohydrates and proteins. Pathology of inflammation: causes, manifestations, types. Exsudative superficial and interstitial inflammation. Alterative inflammation. Proliferative inflammation. Healing and reparative processes. Progressive changes: Hypertrophy, hyperplasia, metaplasia, adaptation. Granulomatous and „specific“ inflammation. Global circulatory disorders: causes and manifestations. Local circulatory disorders. Introduction to oncological pathology I.: terminology, histogenesis, oncogenesis. Introduction to oncological pathology II.: dignity, grading, staging. Epithelial tumors – classification, typing and grading. Mesenchymal tumors – classification, typing and grading. Praecanceroses. Dysplasias of the squamous and glandular epithelium. Neuroectodermal tumorus: classification, typing and grading. Teratomas. Melanocytic proliferations and neoplasms. Immunopathology: classification, immune defects, autoimmune diseases. Transplantation pathology. Immunity of neoplastic diseases. Hyperergic immunopathologic diseases – connective tissue diseases. Tumours of the blood, haematopoietic and lymphoid tissues – introduction. Myelodysplastic syndromes and myeloproliferative neoplasias.	
<b>Recommended literature:</b> <ul style="list-style-type: none"> <li>• Underwood J.C.E.: General and systematic pathology. Edinbourgh, Churchill Livingstone 2000</li> <li>• Rubin E., Farber J.L.: Pathology. J.B.Lippincott, Philadelphia 1994</li> </ul>	



- Harish Mohan: Textbook of Pathology, seventh edition, ISBN 9789351523697, 2015
- Vinary Kumar, M.D., Abul K. Abbas, Jon C. Aster: Rubin's Basic Pathology, ISBN 978-0-8089-2432-6
- Milikowski C., Berman I.: Color atlas of basic histopathology. Appleton and Lange, Stamford 1997
- Damjanov I., Linder J.: Pathology. A Color Atlas. Mosby, 2000
- Cotran R. S., Robbins S.L., Kumar V.: Basic Pathology. Philadelphia: W.B. Saunders, 2002, ISBN 0-7216- 5122-4
- Mačák J.: General Pathology. Masaryk University 2008, ISBN 978-80-210-4549-1

**Languages necessary to complete the course:**  
english languageovak

**Notes:**

**Past grade distribution**

Total number of evaluated students: 672

A	ABS0	B	C	D	E	FX
5,95	0,0	16,52	26,04	29,02	21,88	0,6

**Lecturers:** prof. MUDr. Lukáš Plank, CSc., MUDr. Tomáš Balhárek, PhD., prof. MUDr. Katarína Adamicová, PhD., MUDr. Michal Kalman, PhD., MUDr. Petra Kolenčíková, PhD., MUDr. Juraj Marcinek, PhD., MUDr. Jozef Mičák, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚPA/J-S-VL-534/17	<b>Course title:</b> Pathological Anatomy (2)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 5 / 4 <b>per level/semester:</b> 70 / 56 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 10	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚA/J-S-VL-503/16 - Anatomy (3) and JLF.ÚHE/J-S-VL-506/16 - Histology and Embryology (2) and JLF.ÚPA/J-S-VL-533/17 - Pathological Anatomy (1)	
<b>Course requirements:</b> Test Scale of assessment (preliminary/final): Credit Test	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b> Malignant lymphomas. Pathology of the heart I. (ICHS, myocardial infarction, valvular anomalies). Pathology of the heart II. (Hypertrophy and dilatation of the heart and cardiomyopathy). Atherosclerosis - causes, pathogenesis, manifestations and complications. Inflammatory bronchial and pulmonary diseases (focal and diffuse pneumonias). Interstitial lung diseases, fibrosis of the lungs. Tumours of the lungs. Diseases of the oral cavity, salivary glands and oesophagus. Diseases of the stomach and duodenum (inflammations, peptic ulcer disease, tumours). Diseases of the small and large bowel (malabsorption, inflammations, tumours). Diseases of the liver (hepatitis, cirrhosis, tumours) and exocrine pancreas. Pathology of the breast (non-neoplastic and neoplastic diseases). Glomerulonephritis (etiology, pathogenesis, classification). Interstitial nephritis (etiology, pathogenesis, classification). Tumours of the kidney. Pathology of the cervix and corpus uteri (non-neoplastic and neoplastic diseases). Pathology of the ovary and Fallopian tube (non-neoplastic and neoplastic diseases). Pathology of the prostate, urinary bladder, testis. Non-neoplastic blood disorders. Pathology of the endocrine system. Pathology of the skin. Pathology of the CNS I (ischaemia, bleeding, vascular changes). Pathology of the CNS II (prion's diseases, degenerative diseases). Pathology of HIV infection and of AIDS. Pathology of selected clinical conditions. Pathology of the pregnancy. Perinatal pathology. Disorders of the bones and joints.	
<b>Recommended literature:</b> <ul style="list-style-type: none"> <li>• Underwood J.C.E.: General and systematic pathology. Edinburgh, Churchill Livingstone 2000</li> <li>• Rubin E., Farber J.L.: Pathology. J.B.Lippincott, Philadelphia 1994</li> <li>• Harish Mohan: Textbook of Pathology, seventh edition, ISBN 9789351523697, 2015</li> <li>• Vinary Kumar, M.D., Abul K. Abbas, Jon C. Aster: Rubin's Basic Pathology, ISBN 978-0-8089-2432-6</li> </ul>	

- Milikowski C., Berman I.: Color atlas of basic histopathology. Appleton and Lange, Stamford 1997
- Damjanov I., Linder J.: Pathology. A Color Atlas. Mosby, 2000
- Cotran R. S., Robbins S.L., Kumar V.: Basic Pathology. Philadelphia: W.B. Saunders, 2002, ISBN 0-7216- 5122-4
- Mačák J.: General Pathology. Masaryk University 2008, ISBN 978-80-210-4549-1

**Languages necessary to complete the course:**

english language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 605

A	ABS0	B	C	D	E	FX
9,59	0,0	21,82	28,43	13,72	11,4	15,04

**Lecturers:** prof. MUDr. Lukáš Plank, CSc., MUDr. Tomáš Balhárek, PhD., prof. MUDr. Katarína Adamicová, PhD., MUDr. Michal Kalman, PhD., MUDr. Petra Kolenčíková, PhD., MUDr. Juraj Marcinek, PhD., MUDr. Jozef Mičák, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚPF/J-S-VL-535/17	<b>Course title:</b> Pathological Physiology (1)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 2 <b>per level/semester:</b> 42 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚFy/J-S-VL-515/16 - Physiology (1)	
<b>Course requirements:</b> Assessment of students is carried out in the form of 2 tests of continuous assessment of the study, minimum passing score is 74%. Assessment scale: A: 96-100%, B: 90-95%, C: 85-89%, D: 79-84%, E: 74-78%, FX: 73% and less. Active participation in practicals (100%). Analysis of virtual case studies. Scale of assessment (preliminary/final): Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> The graduate of the course will understand the mechanisms of origin, development and termination of pathological processes related to homeostasis disorders, changes in organism reactivity, development and complications of diabetes mellitus and cerebral ischemia. Based on the analysis of virtual case studies, student is able to solve the pathomechanisms of the most common symptoms and signs of homeostasis disorders. The student can apply the knowledge gained from seminars and practicals to solve health problems of patients with disorders of homeostasis, immunity, thermoregulation, systemic inflammatory response, pain, circulatory shock, disorders of consciousness and dysfunction of the arterial and venous system of the lower extremities. The graduate of the course is able to identify the essential and basic pathomechanisms of these disease processes.	
<b>Class syllabus:</b> Introduction to pathophysiology – definition, main tasks of pathophysiology in medical education, content, organization and forms of the teaching process. Health and disease – the concept of health and disease, illness and disease, stages and time course of the disease, aetiology of health, aetiology of the disease. General etiopathogenesis of diseases - noxae and mechanisms of their influence on the body, physical, chemical. biological and social factors, the role of apoptosis, genetics and disorders in autoregulation in pathogenesis. Mechanism leading to fluid and electrolyte balance disturbances, their consequences - movement of body fluids and electrolytes across the cell membrane and among body fluid compartments; regulation of body fluid and electrolytes and its disturbances; volume imbalances, osmolality imbalances, dehydration, hyperhydration, edema.	

Disorders of acid base balance - regulation of pH in extracellular fluid, compensatory responses to alterations in pH, metabolic acidosis and alkalosis, respiratory acidosis and alkalosis, mixed acid-base disorders, the influence of pH disorders on functions of the body systems.

Role of the changed reactivity of the body in the pathogenesis of diseases - mechanisms responsible for physiological reactivity of the body, for development of hyperreactivity and hyporeactivity. Stress – mechanisms responsible for the development of stress reaction; the role of stress in health protection and pathogenesis of diseases.

Inflammation as a protective and auto-aggressive process, systemic inflammatory response of the body (SIRS) - local inflammation versus SIRS, SIRS – causes, mechanisms, consequences. SIRS and sepsis.

Pathophysiology of nutrition – mechanisms involved in the development of obesity and malnutrition - classification, consequences for body organs and systems functions. Disturbances of lipids, proteins, and purines metabolism – pathomechanisms involved in the development of hyper- and hypolipidemias, hyper- and hypoproteinemias; hyperuricemia: consequences.

Pathophysiology of pain - definitions, classifications of pain; neuroanatomy and neurophysiology of pain; theory of pain onset, neuromodulation of pain; acute and chronic pain; visceral and somatic pain; disturbances in pain nociception and perception, the importance of pain in body defence and pathogenetic mechanisms of disease development.

Pathophysiology of carbohydrate metabolism; diabetes mellitus (DM) - disturbances in carbohydrate digestion; DM – definitions, classifications, etiopathogenesis, pathomechanisms involved in the development of DM and its symptoms and signs; acute and chronic complications of DM – mechanisms involved in their development.

Pathophysiology of circulatory shock - definitions and general pathomechanisms involved, stages of shock, types of shock, reversible and irreversible stages, effects of shock on the function of body organs and systems.

Pathophysiology of cerebral ischemia - definition, causes and mechanisms involved in the development of brain ischemia – a blood pressure decrease, rheologic properties of blood and microcirculation, collateral circulation, no-reflow phenomenon, the threshold of ischemic injury, ischemic penumbra, diaschisis, ischemic brain edema, consequences of brain ischemia.

Dysfunction of arterial and venous circulation in lower extremities - arterial occlusion by thrombosis, embolism, vasospastic diseases – causes, mechanisms, consequences. Deep venous thrombosis, thrombophlebitis, chronic venous insufficiency, causes, mechanisms, consequences, lymphedema.

Pathophysiology of pulmonary and visceral circulation - differences between pulmonary and systemic circulation, the pathogenesis of pulmonary hypertension, pathophysiology of pulmonary embolism, pulmonary shunts, disturbances of the blood circulation in the GIT – causes, mechanisms, consequences.

Pathophysiology of blood - anaemia, polycythaemia, leukaemia – classification, causes, mechanisms, consequences. Most common disturbances of coagulation, causes, mechanisms and consequences.

Pathophysiology of ageing and terminal stages - definitions, mechanisms responsible for ageing of tissues and organs, changes of organs and systems of the body due to ageing. Mechanisms involved in terminal stages development, symptoms and signs of terminal stages.

Pathophysiology of immunity - disturbances of immunity, their role in the pathogenesis of diseases.

Pathophysiology of thermoregulation - fever, hyperthermia, hypothermia, mechanisms involved in onset and development, changes of body functions, positive and negative consequences; burns and frostbites - mechanisms of development, manifestations.

Pathophysiology of disorders of consciousness.

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**Recommended literature:**

Hammer GD, McPhee SJ. Pathophysiology of Disease. An Introduction to Clinical Medicine. McGraw-Hill, 2018. 832 s. ISBN 978-1260026504  
Silbernagl S., Lang F. Color Atlas of Pathophysiology. Thieme, Stuttgart, 2016. 448 s. ISBN 978-3131165534  
Seifter JL, Walch EC, Sloane DE. Integrated Physiology and Pathophysiology. Elsevier, 2021. 544 s. ISBN 978-0323597326

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 663

A	ABS0	B	C	D	E	FX
16,59	0,0	49,77	27,75	4,83	1,06	0,0

**Lecturers:** prof. MUDr. Renata Pěčová, PhD., MPH, prof. MUDr. Jana Plevková, PhD., MUDr. Tomáš Buday, PhD., RNDr. Marek Samec, PhD., prof. MUDr. Miloš Tatár, CSc., prof. RNDr. Mariana Brozmanová, PhD., RNDr. Michal Pokusa, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ÚPF/J-S-VL-536/17	<b>Course title:</b> Pathological Physiology (2)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 3 <b>per level/semester:</b> 42 / 42 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 7	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚFy/J-S-VL-516/16 - Physiology (2) and JLF.ÚPF/J-S-VL-535/17 - Pathological Physiology (1)	
<b>Course requirements:</b> Assessment of students is carried out in the form of 2 tests of continuous assessment of the study, minimum passing score is 74%. Assessment scale: A: 96-100%, B: 90-95%, C: 85-89%, D: 79-84%, E: 74-78%, FX: 73% and less. Active participation in practicals (100%). Evaluation of ECG recording, including its pathogenetic analysis. Oral examination. Scale of assessment (preliminary/final): Scale of assessment (preliminary/final): 10/90	
<b>Learning outcomes:</b> The graduate of the course will understand the mechanisms of origin, development and termination of pathological processes related to cardiac circulatory disorders, arterial and venous circulatory disorders of lower extremities, pulmonary and visceral circulation, obstructive diseases of the respiratory system, kidney diseases leading to their insufficiency, underlying liver disorders and underlying endocrine, gastrointestinal and blood disorders. Based on an evaluation of pathological electrocardiographic records, student can address electrical disorders of the heart during arrhythmias and myocardial ischemia and hypertrophy; student can solve basic disorders of ventilation insufficiency based on the analysis of spirometric records. Student can analyse pathomechanisms of disorders of mechanical function of the heart leading to its failure, disorders of external ventilation, disorders of oxygen supply to the body and disorders of glomerular and tubular kidney function. Student can also analyse the causes of the most important symptoms and signs of cardiovascular, respiratory and renal diseases. The graduate of the course is able to identify the essential and basic pathomechanisms of the above disease processes.	
<b>Class syllabus:</b> Disturbances of blood pressure regulation - systemic arterial hypertension, mechanisms of development of primary and secondary hypertension, mechanisms of development of complications in subjects with arterial hypertension. Systemic arterial hypotension. Ischemic heart disease - mechanisms of development of ischemic heart disease, mechanisms of disturbances of electrophysiology and mechanical function of the heart caused by ischemia, atherosclerosis as the main pathogenic factor of ischemic heart disease, mechanisms of reperfusion injury.	

Pathophysiology of heart failure - mechanisms leading to the onset and progression of heart failure responsible for systolic and diastolic dysfunction of the heart, acute and chronic heart failure, right and left-side heart failure, mechanisms leading to the manifestation of heart failure.

Pathomechanisms involved in the development of the most common symptoms and signs of cardiovascular diseases.

Pathophysiology of valvular heart diseases.

Disturbances of external ventilation - lung ventilation and mechanisms involved in its disturbances – alveolar hyper- and hypoventilation; extrapulmonary and intrapulmonary mechanisms involved in lung ventilation disturbances, in the distribution of air in the lung, in the diffusion of gases across the alveolo-capillary membrane, in lung perfusion; in ventilation-perfusion ratio, consequences of lung ventilation disturbances for exchange of gases in the lung.

Pathophysiology of obstructive pulmonary diseases - pathogenesis of bronchial asthma - pathogenesis, symptoms, and signs, pathomechanisms involved in the exchange of gases in the lung. Chronic obstructive pulmonary disease (COPD) – pathogenesis; main mechanisms involved in disturbances of gas exchange in COPD.

Hypoxia - causes and mechanisms involved in the development of main types of hypoxia; compensatory mechanisms, influence of hypoxia on different organs and systems of the human body.

Hyperoxia - causes and mechanisms involved in the development of hyperoxia, main mechanisms responsible for the negative influence of hyperoxia on tissues.

Respiratory failure (RF) - causes, main consequences of RF – hypoxaemia and hypercapnia; mechanisms responsible for the development of symptoms and signs.

Pathomechanisms of the most important symptoms and signs of respiratory diseases.

Lung function tests.

Disturbances of respiratory system defence mechanisms.

Pathophysiology of glomerular and tubular dysfunction - causes and mechanisms of glomerular dysfunction, consequences of this disorder for renal function and for the internal environment of the organism. Causes and mechanisms of renal tubule dysfunction - water and ion resorption disorders, osmotic diuresis, H<sup>+</sup> ion secretion disorder, nephrotic syndrome.

Pathophysiology of acute and chronic renal failure - causes of acute and chronic renal failure, disturbances in homeostasis in renal failure – uremic syndrome, mechanisms responsible for multiorgan dysfunction in acute and chronic renal failure.

Pathomechanisms of the most important symptoms and signs arising from renal diseases

Pathophysiology of the gastrointestinal tract - pathogenesis of gastric and duodenal ulcers, the pathophysiology of the small and large intestine.

Pathophysiology of liver - basic functions of the liver; hepatic insufficiency and its consequences.

Portal hypertension. Hepatopulmonary syndrome.

Disorders of the endocrine system - general effects of hormones; causes and mechanisms involved in the development of disturbances in hypothalamic-pituitary system, in thyroid function, in the function of the adrenal cortex, and in the function of the parathyroid gland; mechanisms involved in the development of symptoms and signs related to mentioned disturbances.

Electrophysiology of the heart. Its manifestation on the electrocardiogram, waves, deflections, intervals, segments, the algorithm of evaluation of ECG record – rhythm, rate, electrical axis - their physiological changes.

Pathogenetic analysis of ECG records with disturbances of impulse formation, disturbances of impulse conduction, in myocardial infarction and chronic ischemic heart disease, in hypertrophy and dilation of atria and ventricles of the heart and in changes in plasma electrolyte levels.

### **Recommended literature:**



Hammer GD, McPhee SJ. Pathophysiology of Disease. An Introduction to Clinical Medicine. McGraw-Hill, 2018. 832 s. ISBN 978-1260026504  
Silbernagl S., Lang F. Color Atlas of Pathophysiology. Thieme, Stuttgart, 2016. 448 s. ISBN 978-3131165534  
Seifter JL, Walch EC, Sloane DE. Integrated Physiology and Pathophysiology. Elsevier, 2021. 544 s. ISBN 978-0323597326  
Hampton J, Hampton J. The ECG Made Easy. 9th Edition. Elsevier Science, 2019. 207 s. ISBN 978-0702074578

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 557

A	ABS0	B	C	D	E	FX
36,27	0,0	21,9	19,57	11,67	9,69	0,9

**Lecturers:** prof. MUDr. Renata Pěčová, PhD., MPH, prof. MUDr. Miloš Tatár, CSc., prof. MUDr. Jana Plevková, PhD., MUDr. Tomáš Buday, PhD., RNDr. Marek Samec, PhD., RNDr. Michal Pokusa, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023						
<b>University:</b> Comenius University Bratislava						
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin						
<b>Course ID:</b> JLF.ÚFa/J-S-VL-598/17		<b>Course title:</b> Student Scientific Activity (1)				
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week: per level/semester:</b> 50s <b>Form of the course:</b> on-site learning						
<b>Number of credits:</b> 1						
<b>Recommended semester:</b> 6.						
<b>Educational level:</b> I.II.						
<b>Prerequisites:</b>						
<b>Recommended prerequisites:</b> None.						
<b>Course requirements:</b> Laboratory or clinical work under supervision of tutor at departments. Presentation of results at conference or publication of paper in a scientific journal (optional). Scale of assessment (preliminary/final): 100/0						
<b>Learning outcomes:</b> The students obtains skills (under supervision of his/her tutor) in laboratory work, using various scientific methods, statistical analysis and presentation of results at scientific conferences. He/she learns how to prepare a scientific publication.						
<b>Class syllabus:</b> Work at departments/clinics under supervision of a tutor. The selection of topic is individual based on an interest of the student and on yearly updated offer (list of topics). The preparation and presentation of results at Student Scientific Conferences. Preparation of scientific papers.						
<b>Recommended literature:</b> Hanacek J, Javorka K et al. Introduction to scientific work. Martin, 2011, Jessenius Faculty of Medicine, Comenius University. ISBN 978-80-88866-95-4. p. 196.						
<b>Languages necessary to complete the course:</b> English						
<b>Notes:</b>						
<b>Past grade distribution</b> Total number of evaluated students: 1						
A	ABS0	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Michal Šimera, PhD.						

<b>Last change:</b> 29.03.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.ChKTC/J-S-VL-522/22	<b>Course title:</b> Surgical Propedeutics (1)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚA/J-S-VL-501/17 - Anatomy (1) and JLF.ÚA/J-S-VL-502/15 - Anatomy (2)	
<b>Course requirements:</b> Continuous assessment of students takes the form of a written examination-test, minimum threshold of success: 65 %. Evaluation: A: 91–100 %, B: 81–90 %, C: 73–80 %, D: 66–72 %, E: 60–65 %, FX: 64 % and less Final assessment: test.	
<b>Learning outcomes:</b> The graduate is familiar with the content in the field of surgery, from historical aspects to the present. He knows the basic surgical techniques and procedures for adhering to the principles of asepsis and antisepsis. He knows the indications for surgical treatment, can determine the operational risk and specify the principles of preoperative, perioperative and postoperative care. He has important knowledge about the diagnosis and treatment of shock and life-threatening conditions in surgery. He knows the principles of diagnosis and treatment of surgical infections. He is acquainted with the principles of diagnosis and surgical treatment of malignant diseases and acute abdominal emergencies.	
<b>Class syllabus:</b> Patients history. Physical examination of a surgical patient. Invasive and noninvasive diagnostic procedures in management of a surgical patient. Principles of preoperative care. Operative risk. Peculiarities of physical examination in pediatric patients. Invasive and non-invasive diagnostic methods in the examination of pediatric surgical patients History of surgery. Principles and indications of surgical therapy. Basic surgical techniques and procedures. Asepsis, antisepsis, disinfection. Nosocomial infections. Surgical site infections SSI. Nutritional disturbances in surgical patient. Diagnostics. Guidelines for enteral and parenteral nutrition. Complications. Response to injury and operative trauma. Changes of homeostasis in surgical and traumatic patient. Postoperative care on ICU. Postoperative complications – (hypoxia, bleeding, ileus, CNS, cardiovascular, respiratory, renal, GIT, wound). Shock – definition, classification and pathophysiology. Monitoring. Prevention and treatment of shock. Water and electrolyte dysbalance. Acidobasis dysbalance.	

Injury of the soft tissues – mechanism of injury, Classification of the wound. Wound healing. Principles of a wound management. Local and systemic wound healing factors. Sutures – stitching material and techniques. Bedsores.

Blood transfusion, blood derivatives and their substitutes. Indications, risks and complications. Hemostatic mechanisms. Hemostasis disorders in surgical patient. Antiaggregation and anticoagulation treatment. Fibrinolytic treatment.

Infections in surgery – sources. Bacteremia, sepsis, SIRS, multiple organ failure in sepsis. Factors influencing development and promotion of surgical infection. Prevention, diagnosis and treatment of surgical infection. Antibiotics. Principles of prophylactic and therapeutic usage of antibiotics. Bacteriological monitoring.

Hand infections. Paronychia and paronychia. Abscesses and phlegmons of the hand. Pyogenic infections, lymphadenitis, hidradenitis, phlegmona, abscess, osteomyelitis. Anaerobic infections, gas gangrene, folliculitis, furunculus, carbunculus, cheilitis.

The basics of surgical oncology. Classification of tumours. Benign and malignant tumours, precancerosis. Growth and spreading process of malignant tumours. Diagnosis and treatment. Primary and secondary prevention in surgical oncology.

Acute abdomen – definition. Classification. The main diagnostic mistakes, prevention. Principles of acute abdomen examination.

Life threatening conditions in surgery. Basics of CPR. Principles of diagnostic and therapeutic management. General anaesthesia. Local anaesthesia.

#### **Recommended literature:**

Fischer J. et al.: Fischer's Mastery of Surgery, seventh edition, 2018, Volume 1,2

Sabiston, D.C.: Textbook of Surgery 21st edition. The biological Basis of Modern Surgical Practice. Philadelphia: W.B. Saunders Comp. 2021, 2176 pp.

Liechty, D., Soper, R.T.: Fundamental of Surgery. Philadelphia: C.V.Mosby Comp., 1989, 646 pp.

Way, L.W.: Current Surgical Diagnosis and Treatment. New York: Lange Medical Books, 2006. 1453 pp.

Skinner, H.B.: Current Diagnosis and Treatment in Orthopedics. Norwalk: Appleton and Lange, 1995. 645 pp.

Madani A., Ferri L., Seely A.: Pocket Manual of General Thoracic Surgery, Springer 2015, 274 pages.

Chung CK: Grabb and Smith Plastic Surgery, 8th Edition, 2019. 1108s.

Danovitch G.: Handbook of kidney transplantation, 6th edition 2017, 606pp.

#### **Languages necessary to complete the course:**

english language

#### **Notes:**

#### **Past grade distribution**

Total number of evaluated students: 113

A	ABS0	B	C	D	E	FX
15,04	0,0	45,13	29,2	9,73	0,88	0,0

**Lecturers:** prof. MUDr. Ľudovít Laca, PhD., MUDr. Michal Hošala, PhD., MUDr. Ján Janík, PhD., doc. MUDr. Marek Smolár, PhD., MPH, MUDr. Lukáš Spevák, MUDr. Adam Švec, PhD., MUDr. Matej Vnučák, PhD., MUDr. Eva Kúdelová, PhD., MUDr. Peter Mikolajčík, PhD.

**Last change:** 06.04.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Jessenius Faculty of Medicine in Martin	
<b>Course ID:</b> JLF.KVVTCh/J-S-VL-522a/22	<b>Course title:</b> Surgical Propedeutics (2)
<b>Educational activities:</b> <b>Type of activities:</b> practicals / lecture <b>Number of hours:</b> <b>per week:</b> 3 / 2 <b>per level/semester:</b> 42 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.II.	
<b>Prerequisites:</b> JLF.ÚA/J-S-VL-503/16 - Anatomy (3) and JLF.ChKTC/J-S-VL-522/22 - Surgical Propedeutics (1)	
<b>Course requirements:</b> Continuous assessment of students takes the form of a written examination-test, minimum threshold of success: 65 %. Evaluation: A: 91–100 %, B: 81–90 %, C: 73–80 %, D: 66–72 %, E: 60–65 %, FX: 64 % and less Final assessment: test, practical and theoretical exam.	
<b>Learning outcomes:</b> The graduate of the course understands the principles of diagnosis and treatment of injuries of the locomotor system, burns and frostbites. He knows the basic algorithm of diagnostic and therapeutic steps in patients with chest or abdominal trauma and polytrauma. He knows the peculiarities of childhood traumatology. He has a good knowledge of organ collection and transplantation, as well as mini-invasive surgery. He is acquainted with the diagnosis and treatment of acute limb ischemia, diabetic foot and the treatment of chronic wounds.	
<b>Class syllabus:</b> Physical examination of locomotional aparat. Bone fractures - classification, principles of diagnostics and the treatment. Healing of fractures, types of healing. Complications in healing of fractures in conservative and after surgical treatment. Injuries of tendons and joints. Burns – pathology and pathophysiology of thermal injury. Classification, first aid. Treatment of burn shock. Local treatment. Inhalation injury. Surgical complications - local, systemic. Hypothermia and frostbites. Bite and sting. Drowning. Electric shock. Crush and blast syndrome. Polytrauma. Diagnostic and therapeutic procedures, treatment priorities. Injury of the chest and intrathoracic organs. Injury of intraabdominal organs and retroperitoneum. Specificities of pediatric traumatology. New technologies in surgery. Miniinvasive surgery. Videopresentation of surgery Transplantations and the donor's programme. Acute and chronic ischemic syndrome of lower extremity. Surgical aspects of diabetes mellitus. Diabetic foot.	

Surgical venous and lymphatic disorders. Thromboembolic disease, pulmonary embolism.  
Anticoagulant and thrombolytic treatment.  
Treatment of chronic wounds.  
Polymorbidity. Surgical problems of elderly age.

**Recommended literature:**

Fischer J. et al.: Fischer's Mastery of Surgery, seventh edition, 2018, Volume 1,2  
Sabiston, D.C.: Textbook of Surgery 21st edition. The biological Basic of Modern Surgical Practice. Philadelphia: W.B. Saunders Comp. 2021, 2176 pp.  
Liechty, D., Soper, R.T.: Fundamental of Surgery. Philadelphia: C.V.Mosby Comp., 1989, 646 pp.  
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Madani A., Ferri L., Seely A.: Pocket Manual of General Thoracic Surgery, Springer 2015, 274 pages.  
Chung CK: Grabb and Smith Plastic Surgery, 8th Edition, 2019. 1108s.  
Danovitch G.: Handbook of kidney transplantation, 6th edition 2017, 606pp.

**Languages necessary to complete the course:**

english language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 2

A	ABS0	B	C	D	E	FX
50,0	0,0	50,0	0,0	0,0	0,0	0,0

**Lecturers:** doc. MUDr. Juraj Miklušica, PhD., MUDr. Lukáš Spevák, MUDr. Adam Švec, PhD., MUDr. Michal Hošala, PhD., MUDr. Ján Janík, PhD., prof. MUDr. Ľudovít Laca, PhD., MUDr. Peter Mikolajčík, PhD., doc. MUDr. Marek Smolár, PhD., MPH, MUDr. Matej Vnučák, PhD., MUDr. Eva Kúdelová, PhD.

**Last change:** 06.04.2022

**Approved by:**