GENERAL MEDICINE

SYLLABI OF THE COURSES OFFERED TO EXCHANGE STUDENTS

YEAR 1 / SEMESTER 1

aVLAN0121s Anatomy I - seminar

Faculty of Medicine
autumn

Extent and Intensity

0/3/0. (45 hrs of practical classes) 2 ECTS.

Type of Completion: z (credit) Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of the course are:

-to describe the locomotor system of the human body

-to describe vessels, nerves and lymphatic system of extremities

-to describe nerves of the neck, thorax, abdomen, back and extremities

Learning outcomes

At the end of the course student will be able to:

1. describe the skeleton of the human body including details.
2. describe the joints of the human body including details.
3. identify muscles of the human body, classify them into groups and describe their origins, insertions, innervations and functions.
4. describe nerves of the neck, thorax, abomen, back and extremities.
5. describe blood vessels and lymphatic system of the upper and lower extremities.
6. explain the structure of all parts of the upper and lower limbs including relations of their components.

Syllabus

1. Planes and directions on the body, skeleton of the upper extremity.
2. General arthrology, joints of the upper extremity.

3. Muscles of the upper extremity.
4. Vessels, nerves and lymphatic system of the upper extremity.
5. Bones and joints of the lower extremity.
6. Muscles of the lower extremity.
7. Vessels, nerves and lymphatic system of the lower extremity.
8. Axial skeleton and joints of the spine and thorax.
9. Muscles and nerves of the back, neck, thorax and abdomen.
10. Skull – bones of the neurocranium.
11. Skull – bones of the facial skeleton.
12. Skull as a whole.
13. Joints of the head, craniovertebral joints, muscles of the head.
14. Dissection I. (dissection of the back, upper and lower extremities)

Literature

required literature

- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. Gray's anatomy for students. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Peripheral Nervous System. 1st ed. Brno: Masarykova univerzita, 2018. ISBN 978-80-210-8993-8.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Handbook of Splanchnology and Angiology. 2. dotisk 1. vyd. Brno: Masarykova univerzita, 2018. 154 pp. ISBN 978-80-210-6771-4.

recommended literature

- PÁČ, Libor, Ladislava HORÁČKOVÁ and Hana NECHUTOVÁ. Anatomy of human locomotor system. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2019. 119 pp. ISBN 978-80-210-5258-1.
- Anne M. Gilroy, Brian R. MacPherson (eds.) Atlas of Anatomy, 3rd Edition, 2016, Thieme Medical Publishers, Inc. ISBN: 9781626232525
- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012. 123 s. ISBN 9788024621159.

not specified

- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák – Jan Balko – Simona Felšőová – Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

Teaching methods

Practice with the human anatomical specimens Practical training (about 10 % of the total volume of teaching) is complemented by teaching in SIMU on dissection simulator.

Assessment methods

Credit.

Language of instruction

English

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aVLAN0121p Anatomy I – lecture

Faculty of Medicine
autumn

Extent and Intensity

45 hrs of theoretical classes Type of Completion: z (credit)

2 ECTS Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of the course are:

- to describe the locomotor system of the human body
- to describe vessels, nerves and lymphatic system of extremities
- to describe nerves of the neck, thorax, abdomen, back and extremities

Learning outcomes

At the end of the course student will be able to:

1. describe the skeleton of the human body including details.
2. describe the joints of the human body including details.
3. identify muscles of the human body, classify them into groups and describe their origins, insertions, innervations and functions.
4. describe nerves of the neck, thorax, abomen, back and extremities.
5. describe blood vessels and lymphatic system of the upper and lower extremities.
6. explain the structure of all parts of the upper and lower limbs including relations of their components.

Syllabus

1. Introduction to Anatomy (anatomical terminology, planes and directions of the human body). Skeleton of the upper extremity.
2. General arthrology, joints of the upper extremity.
3. Muscles of the upper extremity.
4. Vessels, nerves and lymphatic system of the upper extremity.
5. Bones and joints of the lower extremity.
6. Muscles of the lower extremity.
7. Vessels, nerves and lymphatic system of the lower extremity.
8. Axial skeleton and joints of the spine and thorax.
9. Muscles and nerves of the back, neck, thorax and abdomen.
10. Skull – bones of the neurocranium.

11. Skull – bones of facial skeleton.
12. Skull as a whole.
13. Joints of the head, craniovertebral joints, muscles of the head.
14. Dissection I. (dissection of the back, upper and lower extremities).

Literature

recommended literature

- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. Gray's anatomy for students. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Peripheral Nervous System. 1st ed. Brno: Masarykova univerzita, 2018. ISBN 978-80-210-8993-8.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy: handbook of splanchnology and angiology. 1st ed. Brno: Masaryk University, 2014. 153 s. ISBN 9788021067714.
- PÁČ, Libor, Ladislava HORÁČKOVÁ and Hana NECHUTOVÁ. Anatomy of human locomotor system. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2019. 119 pp. ISBN 978-80-210-5258-1.
- Anne M. Gilroy, Brian R. MacPherson (eds.) Atlas of Anatomy, 3rd Edition, 2016, Thieme Medical Publishers, Inc. ISBN: 9781626232525
- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012. 123 s. ISBN 9788024621159.

not specified

- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák - Jan Balko - Simona Felšőová - Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

Teaching methods

Lectures

Assessment methods

Assessment is carried out after completion of following subjects within the scope of anatomy final examination: VLAN0121s Anatomy I – seminar, VLAN0121c Anatomy I – dissection, VLAN0222p Anatomy II – lecture, VLAN0222s Anatomy II – seminar, VLAN0222c Anatomy II – dissection)

Language of instruction

English

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aVLAN0121c Anatomy I – dissection

Faculty of Medicine

autumn

Extent and Intensity

19,5 hrs of practical classes

Type of Completion: z (credit)

2 ECTS

Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of this course are:

-acquire basic abilities for tissue preparation

-find anatomical structures on the extremities and back using anatomical dissection

-connect theoretical knowledge of the structures on the extremities and back with their real composition

Learning outcomes

At the end of the course students will be able to:

1. Recognize and describe all components (bones, joints, muscles, vessels and nerves) of the upper and lower extremities, and back
2. Identify and describe topographical regions on the extremities and the back
3. Practically demonstrate all anatomical structures of studied regions
4. Review arrangement of layers from the superficial to deep in all regions of the upper and lower limbs and back
5. Distinguish abnormalities of the prosections.

Syllabus

- 1st day:back - skin incisions, subcutis, innervation, blood supply; UL - reg. deltoideoscapularis, dissection of the arm; LL - reg. glutea; reg. femoris ant.
- 2nd day: back – dissection of the trapezius, latissimus dorsi; UL – completion of the dissection of the arm; reg. antebrachii, skin, subcutic, superficial muscles; LL - reg. femoris post., reg. cruris.
- 3rd day:back - dissection of the rhomboids, levator scapulae, erector spinae; UL - completion of the dissection of the forearm; palma manus; LL - completion of the dissection of the crus; dorsum pedis;
- 4th day:back - dissection of the splenius, semispinalis, mm. serrati; mm. nuchae profundi, trigonum suboccipitale, mm. multifidi; UL – completion of the dissection of the palma manus; dorsum manus; LL – planta pedis
- 5th day: Demonstration of the dissected regions

Literature

recommended literature

- DUBOVÝ, Petr. Instructions for anatomical dissection course. 3rd ed. Brno: Masarykova univerzita, 2013. 71 pp. ISBN 978-80-210-6202-3.
- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. Gray's anatomy for students. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Handbook of Splanchnology and Angiology. 2. dotisk 1. vyd. Brno: Masarykova univerzita, 2018. 154 pp. ISBN 978-80-210-6771-4.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Peripheral Nervous System. 1st ed. Brno: Masarykova univerzita, 2018. ISBN 978-80-210-8993-8.
- PÁČ, Libor, Ladislava HORÁČKOVÁ and Hana NECHUTOVÁ. Anatomy of human locomotor system. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2019. 119 pp. ISBN 978-80-210-5258-1.
- GILROY, Anne Marie. Atlas of anatomy.?, 2016. ISBN 9781626232525.
- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012. 123 s. ISBN 9788024621159.

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- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák – Jan Balko – Simona Felšőová – Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

Teaching methods

Anatomical dissection of the human body

Assessment methods

Credit

Language of instruction

English

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aVLAN0121t Anatomy I – practice

Faculty of Medicine
autumn

Extent and Intensity

6 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The aims of the subject are:

1. to orientate on X-ray, CT and MRI images
2. 2. to describe structures of the locomotor system on X-ray, CT and MRI images
3. 3. to identify and limit topographical regions on the extremities and the back
4. 4. to assess relations between the anatomical structures in topographical regions of the extremities and back including their organization from superficial to deep layers

Learning outcomes

At the end of the course, the student will able to orientate on X-ray, CT and MRI images. The student will able to recognize anatomical structures of the locomotor system on X-ray, CT and MRI images. Student will be able to identify and limit topographical regions on the extremities and the back. Students should be able to assess relations between the anatomical structures in topographical regions of the extremities and back including their organization from superficial to deep layers.

Syllabus

1. Locomotor system in imaging techniques.
2. Topographical anatomy of the back, and extremities.

Literature

recommended literature

- PÁČ, Libor, Ladislava HORÁČKOVÁ and Hana NECHUTOVÁ. Anatomy of human locomotor system. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2019, 119 pp. ISBN 978-80-210-5258-1.
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- GILROY, Anne Marie. Atlas of anatomy.?, 2016. ISBN 9781626232525.
- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012, 123 s. ISBN 9788024621159. info
- not specified
- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák – Jan Balko – Simona Felšőová – Šárka Zaváza. 1st edition. Praha: Triton, 2015, xvii, 610. ISBN 9788073879501. info
- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák – Jan Balko – Simona Felšőová – Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

Teaching methods

Practical class using simulations

Assessment methods

Credit

Language of instruction

English

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aVLBF011c Biophysics – practice

Faculty of Medicine
autumn

Extent and Intensity

60 hrs of practical classes

Type of Completion: z (credit)

4 ECTS

Taught in person

Guaranteed by

prof. RNDr. Vojtěch Mornstein, CSc.

Department of Biophysics - Theoretical Departments - Faculty of Medicine

Contact Person: prof. RNDr. Vojtěch Mornstein, CSc.

Course objectives

At the end of the course students should be able: understand and explain biophysical principles and laws; operate basic biophysical devices; evaluate obtained data by the basic biophysical methods in light of a scientific, effective, safe and efficient attitude to their use; understand principles of the more complex therapeutical and diagnostical medical devices; describe possible usage of the biophysical techniques and medical devices in practice;

At the end of this course, the student will also have to demonstrate basic skills and habits in data handling and processing of health-related data, information and concepts, and the ability to make reasoned decisions as defined in the following paragraphs:

1. Searching, retrieval, storage, use of data, information and knowledge in medical decision making in diagnostics, treatment.
2. Improvement of skills in critical thinking especially in the area of Evidence-Based Medicine.
3. Understanding the logic of the health and health care environment, communication with professionals and lay community.
4. Gaining initial insight in the core areas of health care informatics competencies (possibilities, limitations and risks) in use of information and communication technologies in a medical environment. This is not a course in computer literacy (working with software programs).

Learning outcomes

After finishing the course the student will be able to:

- explain biophysical principles and laws necessary to operate basic measuring instruments;
- evaluate obtained data by the basic biophysical methods; understand principles underlying the complex therapeutical and diagnostical medical devices;
- substantiate possible usage of the biophysical techniques and medical devices in practice;
- to independently and actively seek and use tools, procedures and processes facilitating the correct use of information society environment for the more effective study of medicine and more efficient provision of medical services in individual medical specialties;
- to understand the possibilities and risks of digitization and use of digital information and communication tools in the process of providing medical services; The student will get a general overview of the benefits of the information society in the medical domain and will acquire basic behavioral habits in this field.

Syllabus

Practical exercises on biophysics

- 1. Introduction, regulations of practical exercises, laboratory safety rules etc. An introduction to the theory of measurement.
- 2. Information (overview and evolution). Medical informatics (definitions, the subject). Information technologies (hardware, software, OS, LAN, WAN).
- 3. Information resources (data mining - data warehousing). Information systems (HIS, expert systems, AI, CME).
- 4. Measurement of liquid viscosity. Measurement of surface tension of liquids
- 5. Eosin absorption curve. Spectrophotometrical determination of concentration of eosin. Refractometric determination of NaCl concentration. Polarimetry.
- 6. Audiometry. Measurement of the blood presure. Ergometry.
- 7. Temperature measurement with a thermocouple. Measuring surface skin temperature with a thermistor. Measuring enviromental parameters (noise).
- 8. Haemolysis of erythrocyte suspension by therapeutic ultrasound. Measuring ionising radiation absorption.
- 9. Measuring the voltage and frequency of electric signals by the oscilloscope. Measuring skin resistance. Measuring tissue model impedance. Analysis of acoustic elements of human voice.
- 10. Electromagnetic radiation. Measuring the cooling effect of the environment. Catathermometry. Measuring the illuminance, Luxmeter.
- 11. Contact and contactless thermography. Thermocamera and thermovision. Physiotherapy.
- 12. Electrodiagnostic, electrotherapeutic methods. Individual measuring of the ECG. Electrical excitability. Effect of the direct and alternating currents.

- 13. Advanced imaging methods. Ultasound – diagnostic and therapeutic usage. Doppler measuring of the velocity of the blood flow. X-rays and Tomography. NMR.
- 14. Knowledge test.

Literature

- HRAZDIRA, Ivo, Vojtěch MORNSTEIN, Aleš BOUREK and Jiřina ŠKORPÍKOVÁ. Fundamentals of biophysics and medical technology. Edited by Vojtěch Mornstein. 3. dotisk 2., přeprac. vyd. Brno: Masarykova univerzita, 2017. 325 pp. ISBN 978-80-210-5758-6.

Teaching methods

Practical exercises

Assessment methods

Basic requirement is the full atendance in the lessons. Theoretical knowledges of the principles used methods are continuously controled by oral examination, in case of fundamental ignorance, student can be excluded from a lesson. For all tasks students must elaborate comprehensive and unique report, these are graded. If are two or more reports graded as "unsuccessful", student cannot write a closing test. Course is finished by the multiple choice test consisting usually 20 questions, evaluated by 20 points. For successfully mastered test student need at least 10 points.

Language of instruction

English

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aVLBF011p Biophysics – lecture

Faculty of Medicine

autumn

Extent and Intensity

45 hrs of theoretical classes

6 ECTS

Type of Completion: zk (examination)

Taught in person

Guaranteed by

prof. RNDr. Vojtěch Mornstein, CSc.

Department of Biophysics – Theoretical Departments – Faculty of Medicine

Contact Person: prof. RNDr. Vojtěch Mornstein, CSc.

Supplier department: Department of Biophysics – Theoretical Departments – Faculty of Medicine

Course objectives

At the end of the course students will understand and explain biophysical principles and laws; understand biophysical principles of the main devices; evaluate data obtained by the basic biophysical methods in light of a scientific, effective, safe and efficient attitude to their use; understand possible usage of the biophysical techniques and medical devices in practice; explain basic principles of the so-called physiological biophysics and (in certain extent) the theory and methods of molecular biophysics.

Learning outcomes

After finishing the course students will:
- understand and explain biophysical principles and laws important for medicine;
- understand biophysical principles of the main medical devices; understand possible usage of biophysical techniques and medical devices in common practice;
- explain basic principles of the so-called physiological biophysics and basic ideas the theory and methods of molecular biophysics.

Syllabus

Introduction into medical biophysics.

- 1. Introduction. Biophysical view on structure of matter.
- 2. Biological effects of ionising radiation.
- 3. Thermodynamic principles and entropy.
- 4. Thermodynamic processes in living organisms.
- 5. Introduction into molecular biophysics I (subject of study).
- 6. Introduction into molecular biophysics II (methods of study).
- 7. Biophysics of biomembranes. Bioelectric phenomena.
- 8. Biophysics of cardiovascular system.
- 9. Biophysics of respiratory system.
- 10. Biophysical function of sensory receptors. Biophysics of hearing.
- 11. Biophysics of vision.
- 12. Effects of mechanical forces and acoustic fields on the living organisms.
- 13. Biological effects of electromagnetic fields and non-ionising radiation.
- 14. Introduction into biocybernetics and modelling.
- 15. Free theme.

Physical principles of medical technology.

- 1. Medicine and technology. Biosignals and their processing.
- 2. Conventional X-ray imaging methods.
- 3. Modern tomographic methods (CT, MRI).
- 4. Radionuclide diagnostics.

- 5. Methods and instruments for ionising radiation therapy.
- 6. Measurement and registration of temperature.
- 7. Optical laboratory instruments.
- 8. Optical diagnostic instruments.
- 9. Electrodiagnostic methods.
- 10. Ultrasound imaging.
- 11. Ultrasound Doppler and duplex methods.
- 12. Measurement and registration of mechanical quantities.
- 13. Methods and instruments used in physiotherapy.
- 14. Modern physical methods in surgery. Lithotripsy.
- 15. Artificial body organs. Nanotechnology in medicine.

Literature

recommended literature

- HRAZDIRA, Ivo, Vojtěch MORNSTEIN, Aleš BOUREK and Jiřina ŠKORPÍKOVÁ. *Fundamentals of biophysics and medical technology*. Edited by Vojtěch Mornstein. 3. dotisk 2., přeprac. vyd. Brno: Masarykova univerzita, 2017. 325 pp. ISBN 978-80-210-5758-6.

Teaching methods

lectures

Assessment methods

The exam has theoretical character but can be done only with the credits gained for practicals. The exam consists of written test consisting of 25 questions and oral part, which can be done only when the number of correctly answered test questions is 14 or more. This limit is lowered to 11 in the last exam resit. The oral part consists of 2 questions as a rule. They are chosen from the list which is available in department web page. The examined student has to be able to explain the problems and characterise their possible clinical importance.

Language of instruction

English

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aVLBI0121c Medical Biology I – practice

Faculty of Medicine
autumn

Extent and Intensity

45 hrs of practical classes 3 ECTS

Type of Completion: z (credit) Taught in person

Guaranteed by

prof. RNDr. Ondřej Slabý, Ph.D.

Department of Biology – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Lívia Eiselleová, Ph.D.

Supplier department: Department of Biology – Theoretical Departments – Faculty of Medicine

Course objectives

- The main objectives of the course are:
  learning to operate the light microscope while observing prokaryotic and eukaryotic cells and various cell structures and processes
- understanding the methods of risk evaluation for monogenic hereditary diseases with autosomal inheritance in patients based on family anamneses

Learning outcomes

After completing the course, the student will be able to:

- operate the light microscope
- perform some of the basic cytochemical staining techniques in observation of bacterial and human cells
- explain the basic principles and use of electron microscopy
- describe the basic techniques and applications of tissue and cell cultures
- deduce the impact of selected DNA mutations on the primary structure of proteins
- explain the methodology of assembling and examining the karyotype and its use, and evaluate basic numerical and structural aberrations in assigned human karyotypes
- evaluate the risk of numerical and structural aberrations resulting from meiotic non-disjunction and chromosomal translocations
- evaluate the risk of monogenic hereditary diseases with autosomal inheritance in patients based on assigned family anamneses of the diseases

Syllabus

- Week 1: Instructions. Non-cellular organisms and infectious agents
- Week 2: Prokaryotic cells, basics of light microscopy
- Week 3: Microscopic observation of eukaryotic cells
- Week 4: Principles of electron microscopy and cellular ultrastructure
- Week 5: Study of DNA damage
- **Week 6: Control test 1 (knowledge of the weeks 1 to 5 - from practices and lectures)**
- Week 7: Human karyotype and chromosomal aberrations
- Week 8: DNA structure, gene expression and DNA replication
- Week 9: In vitro culture of human cells
- Week 10: Methods of cell cycle studying
- Week 11: Mitosis observation under a light microscope
- Week 12: Biological significance of meiosis – gametogenesis
- **Week 13: Control test 2 (knowledge of the weeks 7 to 12 - from practices and lectures)**

- Week 14: no practice – dissection week

Literature

required literature

- Actual protocols for practices are provided in electronic form in the Information System of the Masaryk University (IS): Study Materials of the course aVLBI0121c

Teaching methods

laboratory practice, class discussion

Assessment methods

Requirements for course completion: full attendance in the practices (1 absence, excused or unexcused, is allowed); all protocols completed (also for missed lessons) and checked and signed by appropriate teachers; successfully passed two written control tests during the semester. In case you do not pass the control tests, you can do a re-sit.

In case of a student's late arrival to the practice or poor activity at the practice, the student is required to write an essay the length of 2 pages on a given topic. Same for the case of 2nd and any additional absence in practices (excused or unexcused). Find the instructions for essay writing in the Course-related instructions in the IS.

In case of 3 absences (or more than 3 absences all excused by the Office for Studies within five days from the beginning of the absence and introduced to the Information System), it is addressed individually.

Course-unit credit is not awarded in the case of 4 or more unexcused absences.

Language of instruction

English

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aVLBI0121p Medical Biology I – lecture

Faculty of Medicine
autumn

Extent and Intensity

30 hrs of theoretical classes

1 ECTS

Type of Completion: z (credit)

Taught in person

Guaranteed by

prof. RNDr. Ondřej Slabý, Ph.D.

Department of Biology – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Lívia Eiselleová, Ph.D.

Supplier department: Department of Biology – Theoretical Departments – Faculty of Medicine

Course objectives

The main objectives of the course are:

- understanding the elementary cellular processes and the principle of intercellular communication
- understanding the principle of developing bacterial, viral and genetically determined diseases

Learning outcomes

After completing the course the student will be able to:

- explain elementary processes taking place in cells and human body (gene expression, intercellular communication, cell differentiation, cell division, cell death) and their purposes
- express the basic coherence between malfunctioning cellular processes and development of diseases
- explain the general mechanism of pathogenesis in bacterial and viral diseases
- explain the general mechanism of pathogenesis of gene mutations and chromosome aberrations in humans, and illustrate it with examples
- explain the effects of therapies interacting with cellular processes; explain the principles of anti-bacterial, anti-viral and anti-mitotic treatment

Syllabus

- Introduction to medical biology – from understanding the cellular principle to modern biomedicine
- Bacteria and viruses – characteristics, reproduction strategies and principles of treatment
- Structure, functions and function anomalies of eukaryotic cells
- Cell signalling and the principle of cell differentiation
- Cells in the context of the entire organism – principles of cell adhesion and intercellular communication
- The importance of genetic information – the journey from a gene to protein; DNA replication
- Cell cycle – molecular mechanisms of regulation and significance for oncology
- Mitotic division in normal and cancer cells
- Meiosis and the principle of genetic variability
- The basics of genetics, the nature of dominance and recessivity
- Genetics of human diseases – molecular principles of genetically determined disorders
- Cell death – mechanisms and regulation of apoptosis and its significance for medicine
- Epigenetics – the link between genes and environment

Literature

required literature

- ALBERTS, Bruce. *Essential cell biology*. 4th edition. New York, N.Y.: Garland Science, 2014. xxiii, 726. ISBN 9780815344551.
- *Medical genetics at a glance*. Edited by D. J. Pritchard - Bruce R. Korf. 3rd ed. Chichester, England: Wiley-Blackwell, 2013. 1 online r. ISBN 9781118689028.

Teaching methods

lecture every week

Assessment methods

Lecture attendance is optional. Without examination - Biology I is continued with Biology II which is completed with a written examination test based on knowledge of all topics from both semesters (lectures, seminars, practices).

Language of instruction

English

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aVLOZ0141c Public Health I – practice

Faculty of Medicine
autumn

Extent and Intensity

15 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

Mgr. Bc. Michal Koščík, Ph.D.

Department of Public Health – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Veronika Išová

Supplier department: Department of Public Health – Theoretical Departments – Faculty of Medicine

Course objectives
The course of Public Health I – practice aims to provide first-year medical students with a foundational understanding of critical concepts in epidemiology and public health. Furthermore, one of the notable advantages of this course is that it is meticulously designed to align with the United States Medical Licensing Examination (USMLE). Upon successful completion of this course, students will not only have developed the skills and knowledge necessary to define health, comprehend theories of disease etiology, analyze disease's natural history, apply measures of disease frequency, explore levels of disease prevention, understand diagnostic accuracy, master various study designs in epidemiology, navigate medical statistics, and practice evidence-based medicine, but they will also

be well-prepared to excel in the USMLE Part I, specifically in the section of Biostatistics, Epidemiology/Population Health, & Interpretation of the Medical Literature.

Additionally, it's worth noting that the course materials are based on the United Kingdom Faculty of Public Health (UK-FPH) examination preparation materials, known as the Public Health Textbook®. This comprehensive training sets the stage for the academic and professional pursuits of our students in the field of public health and medicine, ensuring they are equipped with the essential knowledge to excel on an international scale.

Learning outcomes

By the end of this course, students will be able to:
■ Define health, disease, and key theories of disease causation.
■ Calculate measures of disease frequency including incidence and prevalence.
■ Differentiate levels of preventive medicine and apply concepts related to screening and diagnosis.
■ Compare epidemiologic study designs and identify their strengths, limitations, and biases.
■ Apply concepts of hypothesis testing, probability, variables, and statistical tests.
■ Formulate clinical questions, search literature, and critically appraise evidence.
■ Interpret statistical analyses including measures of association and forest plots.
■ Evaluate evidence for causality using criteria such as Hill's guidelines.

Syllabus

1. Health and Disease.
2. Preventive Medicine.
3. Epidemiologic Methodology.
4. Medical Statistics.
5. Evidence-based Medicine (EBM).
6. Causality in Epidemiology.

Literature

required literature

- FLETCHER, Grant. Clinical Epidemiology: The Essentials. 6th ed. Wolters Kluwer Health, 2020, 288 pp. ISBN 978-1-9751-0955-4. info
- FPH, Faculty of Public Health. Public Health Textbook. London: Faculty of Public Health (FPH), 2023. Public Health Textbook info

Teaching methods
Seminars/practices and class discussion.

Reading and studying all required literature.

Assessment methods

■ Evaluation System

The subject of *Public Health I* is divided into two collateral courses; **aVLOZ0141p** (for theoretical lectures) and **aVLOZ0141c** (for practical seminars), that took place simultaneously during the 1st semester (1st year) of the General Medicine study program. Students are entitled to acquire 2 ECTS (European Credit Transfer and Accumulation System) credits upon successful completion of the course.
The two courses of *Public Health I* are mutually dependent, which means that the student has to

acquire the 1 ECTS credit of the seminars (aVLOZ0141c) to be qualified for the final (written) exam, which will award them the second 1 ECTS credit.
The evaluation system of the seminars (aVLOZ0141c) consists of **18 points** that are claimable through attending (and active participation in) the seminars and successful fulfilment of the seminars assignments.
Attendance (and active participation) of each seminar will award the student 1 point (x6 points), and successful fulfilment of each ROPOT assignment will award the student 1 point (x6 points). In addition, students are entitled to gain 2 points from ROPOT assignments of the lectures.
The final group project can award the student up to 4 points, and the project will be presented in the last week of the course.
Students are entitled to sit for the final exam if they achieve **14 out of 18 points**.

■ Attendance

You are expected to attend all the seminars on time.

Late coming is defined as the arrival to the seminar room 5 minutes later than the scheduled time of the seminar. Latecomers are not entitled to enter the seminar room without a prospective excuse. On extraordinary occasions, latecomers without prospective apologies may enter the seminar room, and such permission is up to the discretion of the seminar tutor on a case-by-case basis.

The location of your seminar room is precisely mentioned in your academic timetable.

■ ROPOT Assignments

The assignments aim to provide a self-assessment tool for the students to evaluate their performance in studying modules content. Therefore, the students are highly encouraged to resolve assignments honestly and after preparing properly for them.
A total of 8 ROPOT assignments (6 seminar ROPOTs + 2 lecture ROPOTs) will be released throughout the semester. Each assignment contains 20-30 multiple-choice questions (MCQ) with a single correct answer.
The students will have one week to submit their assignments after the day of its release. If the student does not achieve the passing score of the ROPOT assignment (70 %), they will be entitled to retake it in the following week. If the students do not submit their assignments on time, there will be no chance of re-taking the assignment in the second week. Please note that the assignment application (ROPOT) is a single log-in application; therefore, you will be required to finish your assignment once you open the application.

Language of instruction

English

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aVLOZ0141p Public Health I – lecture

Faculty of Medicine
autumn

Extent and Intensity

15 hrs of theoretical classes

Type of Completion: k (colloquium)

1 ECTS

Taught in person

Guaranteed by

Mgr. Bc. Michal Koščík, Ph.D.

Department of Public Health – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Veronika Išová

Supplier department: Department of Public Health – Theoretical Departments – Faculty of Medicine

Course objectives

In the course *Public Health I – lecture*, our primary objective is to provide students with a comprehensive understanding of the principles and practices of public health. This course is thoughtfully designed to align with international standards, ensuring that students gain knowledge and skills that are globally relevant. Students will explore the impact of social determinants on health outcomes, equipping them with a deeper understanding of healthcare disparities on a global scale. They will also develop proficiency in utilizing demographic data for assessing and addressing population health trends, a fundamental skill for effective healthcare planning.
Furthermore, this course places a strong emphasis on evidence-based medicine, preparing students for clinical decision-making and success in examinations such as the **United States Medical Licensing Examination (USMLE) Part I**. It also delves into healthcare policy development, fostering a broad perspective on healthcare systems and their implications.
In addition to these objectives, students will gain a global perspective on public health challenges and international healthcare practices, aligning them with the ever-evolving landscape of global health standards. Ethical considerations in healthcare and public health will also be explored, emphasizing the importance of ethical healthcare practices.
Both *Public Health I - lecture* and its companion course, *Public Health I - practice*, are meticulously designed to provide students with equivalent knowledge and skills to excel in the USMLE Part I. These courses are inspired by the **United Kingdom Faculty of Public Health (UK-FPH)** textbook, ensuring that our students receive a well-rounded and internationally recognized education in public health and healthcare practices.

Learning outcomes

By the end of this course, students will be able to:
■ Develop a comprehensive understanding of the foundational principles and practices of public health, preparing students for a career in healthcare and public health.
■ Analyze the multifaceted impact of social determinants of health on healthcare outcomes, enabling students to address health disparities effectively.
■ Acquire proficiency in using demographic data to assess and strategize for population health trends, a vital skill for healthcare planning and decision-making.
■ Master the concepts and applications of evidence-based medicine, empowering students to make informed clinical decisions and excel in USMLE Part I, particularly the 'Biostatistics, Epidemiology/Population Health, & Interpretation of the Medical Literature' section.
■ Gain a global perspective on public health challenges and international healthcare practices, equipping students to navigate the complexities of global health standards and contribute to the improvement of healthcare systems worldwide.

Syllabus

1. Introduction to Public Health & Determinants of Health
2. Health Demographics
3. Evidence-based Medicine (EBM)
4. Health Policy & Financing
5. Global Health
6. Boimedical Ethics

Literature

required literature

- FLETCHER, Grant. *Clinical Epidemiology: The Essentials*. 6th ed. Wolters Kluwer Health, 2020, 288 pp. ISBN 978-1-9751-0955-4.
- FPH, Faculty of Public Health. *Public Health Textbook*. London: Faculty of Public Health (FPH), 2023.

recommended literature

- Bonita R, Beaglehole R, Kjellström: Basic epidemiology. 2nd edition. Geneva - Switzerland: World Health Organization; 2006. 212 pages. ISBN 978-92-4-154707-9.
- U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES: Principles of Epidemiology in Public Health Practice: Third Edition. An Introduction to Applied Epidemiology and Biostatistics. October 2006 - Updated May 2012. SELF-STUDY Course SS1978
- Ray M. Merrill: Principles of Epidemiology Workbook: Exercises and Activities. Jones & Bartlett Learning, 2011, ISBN 9781284177374, 1284177378
- Noel S. Weiss: Exercises in Epidemiology 2nd Edition Applying Principles and Methods. Oxford University Press. ISBN 9780190651534, 0190651539

Teaching methods
Lectures.

Reading and studying all required literature.

Assessment methods

■ Evaluation System

The subject of *Public Health I* is divided into two collateral courses; **aVLOZ0141p** (for theoretical lectures) and **aVLOZ0141c** (for practical seminars), that took place simultaneously during the 1st semester (1st year) of the General Medicine study program. Students are entitled to acquire 2 ECTS (European Credit Transfer and Accumulation System) credits upon successful completion of the course.
The two courses of *Public Health I* are mutually dependent, which means that the student has to acquire the 1 ECTS credit of the seminars (aVLOZ0141c) to be qualified for the final (written) exam, which will award them the second 1 ECTS credit.
The evaluation system of the seminars (aVLOZ0141c) consists of **18 points** that are claimable through attending (and active participation in) the seminars and successful fulfilment of the seminars assignments.
Attendance (and active participation) of each seminar will award the student 1 point (x6 points), and

successful fulfilment of each ROPOT assignment will award the student 1 point (x6 points). In addition, students are entitled to gain 2 points from ROPOT assignments of the lectures.
The final group project can award the student up to 4 points, and the project will be presented in the last week of the course.
Students are entitled to sit for the final exam if they achieve **14 out of 18 points**.

■ Attendance

You are expected to attend all the seminars on time.
Late coming is defined as the arrival to the seminar room 5 minutes later than the scheduled time of the seminar. Latecomers are not entitled to enter the seminar room without a prospective excuse.
On extraordinary occasions, latecomers without prospective apologies may enter the seminar room, and such permission is up to the discretion of the seminar tutor on a case-by-case basis.
The location of your seminar room is precisely mentioned in your academic time

■ Assignments

The assignments aim to provide a self-assessment tool for the students to evaluate their performance in studying modules content. Therefore, the students are highly encouraged to resolve assignments trustworthily and after preparing sufficiently for them.

Each assignment contains 20-30 multiple choice questions (MCQ) with a single correct answer. The questions cover the part that had been discussed during the seminar with the tutor and the part that had been denoted for self-study.

The students will have one week to submit their assignments. If the student did not achieve the passing score of the assignment (70%), they will be entitled to re-take it in December. If the students did not submit their assignment on time, they will still be able to submit it one week after the original deadline, but they will not have an opportunity to re-take the assignment in case of failure. Please note that the assignment application (ROPOT) is a single log-in application; therefore, you will be required to finish your assignment once you open the application.

■ ROPOT Assignment

The assignments aim to provide a self-assessment tool for the students to evaluate their performance in studying modules content. Therefore, the students are highly encouraged to resolve assignments honestly and after preparing properly for them.
A total of 8 ROPOT assignments (6 seminar ROPOTs + 2 lecture ROPOTs) will be released throughout the semester. Each assignment contains 20-30 multiple-choice questions (MCQ) with a single correct answer.
The students will have one week to submit their assignments after the day of its release. If the student does not achieve the passing score of the ROPOT assignment (70%), they will be entitled to retake it in the following week. If the students do not submit their assignments on time, there will be no chance of re-taking the assignment in the second week. Please note that the assignment application (ROPOT) is a single log-in application; therefore, you will be required to finish your assignment once you open the application.

■ Final Exam Instructions

The final exam of Public Health I will take place during January and February 2023 (the final schedule will be released later). The exam consists of 30 multiple-choice questions (MCQs) with single correct answers, and its duration is 45 minutes.

The specific instructions for the final exam will be released in December 2022.

Language of instruction

English

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aVLLT0121s Basic Medical Terminology I – seminar

Faculty of Medicine
autumn

Extent and Intensity

2 hrs of practical classes

Type of Completion: z (credit)

2 ECTS

Taught in person

Guaranteed by

Mgr. Natália Gachallová, Ph.D.

Language Centre, Faculty of Medicine Division – Faculty Branches of University Departments - Faculty of Medicine

Contact Person: Mgr. Libor Švanda, Ph.D.

Supplier department: Language Centre, Faculty of Medicine Division – Language Centre

Course objectives

Greek-Latin medical terminology is essential means for understanding the professional medical terminology. The curriculum conveys both theoretical and practical concepts used in medical documentation and is conceived as a preparatory course sui generis, introducing the students into the study of medicine by means of its language. In the first semester, the focus is put on the understanding of anatomical nomecature and simple authentic diagnoses, mostly from traumatology.
The content of the course is fully derived from the actual needs of the professional practice. In the first place, it provides students with instruction on how to apply Latin and/or Greek quickly and purposefully, ie. the student are required to master the semantic aspect of terms, the grammatical forms and their functions. It also systematically develops student´s ability to indepedently analyze medical terms, solve terminological problems, and form medical terms. Last but not least, the course also introduces the wider historical and linguistic foundations of medical terminology as well as its general theoretical contexts.

Learning outcomes

At the end of the course students will be able to:

- apply relevant Latin (and Greek) medical terms and expressions correctly and with understanding;
- recognize and explain grammatical concepts and categories relevant to the acquisition of Greek-Latin medical terminology;

- explain syntactic structure of complex terms;
- recognize the semantic structure of selected anatomical and clinical one-word terms;
- derive adjectives from nouns and vice-versa using common suffixes;
- form simple compound words denoting inflammatory and non-infammatory diseases, as well as the basic types of tumours (-itis, -osis, -oma)
- translate anatomical terms and simple clinical diagnoses (with focus put on fractures and basic types of injuries, ie. traumatology.

Syllabus

- *1st week:* Introduction to the study of the subject. Specifics of Latin pronunciation.
- *2nd week:* Using the Latin terms denoting basic body parts, bones and organs in context. The basic forms of anatomical terms – focus on the use of Genitive and 1st declension nouns. Syntactic relations among constituents of multiple terms : noun in apposition and prepositional phrase.
- *3rd week:* Noun + adjective terms in anatomy: agreed attribute. Focus on skeletal system.
- *4th week:* Latin terms of 2nd declension. Focus on muscular system.
- *5th week:* Specifics of Greek terms of 2nd declension. Latin in medical documentation, basic structure of a medical diagnose.
- *6th week:* Progress test I. Specifics of the consonant stems of Latin 3rd declension - recognizing Genitive stem and its importance. Agreed attribute of Latin nouns of 3rd declension and Adjectives of 1st and 2nd declensions.
- *7th week:* Discussing common mistakes in the progress test I. Specifics of the i-stems of Latin 3rd declension. Medical terms denoting most common types of injuries (vulnus ---; -io).
- *8th week:* Greek terms of 3rd declension: paradigm dosis. Analysis of authentic medical reports from traumatology.
- *9th week:* Progress test II. Specfics of 4th and 5th declension. Differentiating the declension of -us ending nouns.
- *10th week:* The most frequently used medical terms of 4th and 5th declension. Common features of particular cases throughout all declensions.
- *11th week:* Introduction to adjectives of 3rd declension and their specifics: three types of adjectives based on the number of endings in Nominative. Basic types of fractures. How to write a medical report - order of information according to their importance, locating the fracture properly.
- *12th week:* Adjective-forming suffixes: -alis, e; -aris, e; -icus, a, um; eus, a, um. The parallels between Latin and English adjectives used in medical terminology.
- *13th week:* Final revision. Woring with authentic medical material.
- *14th week:* Dissections.

Literature

recommended literature

- PRUCKLOVÁ, Renata a Marta SEVEROVÁ. Introduction to Latin and Greek Terminology in Medicine. 4th rev. ed. Praha: KLP, 2016. x, 117. ISBN9788087773413.
- EHRLICH, Ann and Carol L. SCHROEDER. *Medical terminology for health professions*. 6th ed. Clifton Park, NY: Delmar, Cegage Learning, 2009. xxvi, 582. ISBN 9781418072520.

Teaching methods

lectures, presentations, translation and grammar exercises, drills, group activities, authentic diagnoses

Assessment methods

Requirements for gaining the credit: regular class attendance, active participation in class, preparation for classes, passing the credit test (60-70% based on the passing/failing the progress tests) - see the guarantee´s instructions. Only one unexcused absence will be tolerated; further absences must be properly excused (i.e. via the Study Department of the Faculty of Medicine).

Language of instruction

English

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aVLPO011c First Aid – practice

Faculty of Medicine
autumn

Extent and Intensity

15 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

prof. MUDr. Petr Štourač, Ph.D., MBA, FESAIC

Department of Paediatric Anaesthesiology and Intensive Care Medicine – Institutions shared with the Faculty Hospital Brno (paediatric medicine) - Faculty of Medicine

Contact Person: MUDr. Václav Vafek

Supplier department: Department of Anesthesiology and Intensive Care – Institutions shared with St. Anne's Faculty Hospital – Faculty of Medicine (33,34 %), Department of Anaestesiology and Intensive Care Medicine – Joint workplaces with the University Hospital Brno – workplaces of the Bohunice and Mater. Hospital – Faculty of Medicine (33,33 %), Department of Paediatric Anaesthesiology and Intensive Care Medicine – Institutions shared with the Faculty Hospital Brno (paediatric medicine) - Faculty of Medicine (33,33 %)

Course objectives

Theoretical e-learning familiarization of students with recommended procedures for providing first aid. Teaching practical skills and practising first aid procedures through simulation.

Learning outcomes

Student knows the theory of the approach to the unresponsive patient. Student handles the technique of the approach to the unresponsive patient. Student can open the airway and evaluate breathing of the unresponsive patient. Student handles the technique of cardiopulmonary resuscitation (CPR) in an adult. Student knows how to use an automated external defibrillator (AED) in an adult. Student knows the theory of the approach to the unresponsive child. Student can open the airway and evaluate breathing of the unresponsive child. Student manages the correct technique of CPR in children. Student can recognise serious airway obstruction. Student can provide first aid in airway obstruction. Student can treat massive bleeding. Student can perform direct pressure on the wound. Student can load a pressure bandage. Student can load a tourniquet. Student can perform Rautek manoeuvre. Student can turn the unconscious from the abdomen to the back. Student knows the manifestations of allergic reactions and anaphylaxis and can use an autoinjector. Student knows the symptoms of a stroke and knows how to provide first aid to the patient. Student knows the symptoms and possible causes of seizures and knows how to provide first aid to the patient. Student knows the rules of conduct at the scene of the accident and can ensure their safety at the scene.

Syllabus

1. Approach to the unresponsive patient
2. Basic life support and AED in adult
3. Basic life support in children, foreign body airway obstruction
4. Management of the bleeding, basics of the bandaging
5. Fractures, immobilization, moving an unresponsive patient
6. Other life-threatening conditions
7. Consultation

Literature

Required literature

- First aid e-learning (https://is.muni.cz/auth/do/med/el/prvni_pomoc/index_en.html)

Recommended literature

- European Resuscitation Council Guidelines 2021 (https://cprguidelines.eu/assets/guidelines/European-Resuscitation-Council-Guidelines-2021-Ba.pdf https://cprguidelines.eu/assets/guidelines/European-Resuscitation-Council-Guidelines-2021-Fi.pdf)

Teaching methods

Detailed and up-to-date information is available under Instructions for Teaching First Aid in e-learning first aid (https://is.muni.cz/auth/do/med/el/prvni_pomoc/index_en.html) Teaching first aid will follow the principles of simulation. As a part of their home preparation before the practice, students will study the lesson in e-learning first aid. Each e-learning lesson ends with a test. Students must pass the test prior to their coming to the practice otherwise they will not be admitted to the class. During the practice, individual techniques and procedures will be drilled in short simulations, followed by a structured debriefing and further training. After completing each unit of practice, students are obliged to fill in a feedback questionnaire and post test.

Assessment methods

Attendance at practices is 100 % mandatory. Prior to each practice, students must fill in the entrance test otherwise they will not be admitted to the class. Students choose the best correct answer. To pass the test, it is necessary to have no fewer than 80 % of correct answers. The number of repetitions of the admission test is not limited. The course ends with a colloquium consisting of a practical and a theoretical part. Theoretical part will be a test. Students could do this test after 7th practise. In the practical part, students must pass one simulation successfully. Evaluation will follow a standardized checklist – OSCE (Objective Structured Clinical Evaluation).

Language of instruction

English

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aVLPO011p First Aid – lecture

Faculty of Medicine
autumn

Extent and Intensity

15 hrs of theoretical classes

Type of Completion: k (colloquium)

2 ECTS

Taught online

Guaranteed by

prof. MUDr. Petr Štourač, Ph.D., MBA, FESAIC

Department of Paediatric Anaesthesiology and Intensive Care Medicine – Institutions shared with the Faculty Hospital Brno (paediatric medicine) - Faculty of Medicine

Contact Person: MUDr. Václav Vafek

Supplier department: Department of Anesthesiology and Intensive Care – Institutions shared with St. Anne's Faculty Hospital – Faculty of Medicine (34,00 %), Department of Anaestesiology and Intensive Care Medicine – Joint workplaces with the University Hospital Brno – workplaces of the Bohunice and Mater. Hospital – Faculty of Medicine (33,00 %), Department of Paediatric Anaesthesiology and Intensive Care Medicine – Institutions shared with the Faculty Hospital Brno (paediatric medicine) - Faculty of Medicine (33,00 %)

Course objectives

Theoretical e-learning and video-lecture familiarization of students with recommended procedures for providing first aid.

Learning outcomes

- The student knows the theory necessary to solve acute conditions in the range of basic life support.
- The student masters the algorithm of access to the unconscious.

- The student can describe how to open airway and evaluate breathing in an unresponsive patient.
- The student can discuss the topic of cardiopulmonary resuscitation.
- The student controls the algorithm of approach to an unresponsive child.
- The student can describe how to open airway and evaluate breathing in an unresponsive child.
- The student can discuss the topic of cardiopulmonary resuscitation of a child.
- The student can describe the first aid algorithm for airway obstruction.
- The student can list the steps of the algorithm for stopping massive bleeding.
- The student can name the layers of a pressure bandage.
- The student knows the indications of loading the tourniquet.
- The student knows the symptoms of allergic reactions and anaphylaxis and knows how to use an autoinjector.
- The student knows the symptoms of a stroke and knows how to provide first aid.
- The student knows the symptoms and possible causes of convulsions and knows how to provide first aid to the patient.
- The student knows the rules of conduct at the scene of a car accident and can ensure their safety.
- The student can discuss injuries to the head, cervical spine, chest, abdomen and limbs.
- The student can discuss the topic of severe complications of diabetes.
- The student can discuss the topic of accidents in nature.
- The student can discuss the topic of injuries caused by cold, heat, electric current.
- The student can discuss the topic of abdominal pain, chest pain.
- The student can discuss meningitis, laryngitis, epiglottitis.
- The student can discuss the topic of childbirth in the field.
- The student can discuss the topic of acute poisoning.

Syllabus

Videolectures topics: • Shock • Bleeding I • Internal bleeding • Limb injuries I • Limb injuries II • First aid in car accident • Vital signs, their normal values and deviations • Approach to an unresponsive victim • Basic pathophysiology of sudden cardiac arrest • CPR in adult and AED • Allergic reactions, anaphylaxis • Stroke • Approach to an unresponsive child • Paediatric CPR including newborn life support • Airway obstruction • Rautek manoeuvre, recovery position • Convulsion, epilepsy • Syncope • First aid for drowning • Specifics of electric injury • Chest pain • First aid for hanging • First aid for eye injury • Accidents in nature, first aid • Burns • Heatstroke, sunburn • Frostbites • Accidental hypothermia • Cervical spine injury • First aid in case of suspected thoracic trauma • Suspected abdominal injury • First aid basics for field delivery • CPR in pregnancy • First aid considering head injury • Abdominal pain • First aid for poisoning • Laryngitis and epiglottitis in children • Meningitis • Diabetes mellitus, diabetic emergencies

Literature

required literature

E-learning first aid (https://is.muni.cz/auth/do/med/el/prvni_pomoc/index_en.html)

recommended literature

European Resuscitation Council Guidelines 2021
(https://cprguidelines.eu/assets/guidelines/European-Resuscitation-Council-Guidelines-2021-Ba.pdf
https://cprguidelines.eu/assets/guidelines/European-Resuscitation-Council-Guidelines-2021-Fi.pdf)
not specified

Teaching methods

Students can view in the form of videos that are available in e-learning, as well as pre-reading for practice. However, they do not take place face-to-face and are available without a time limit. Therefore, studying these lectures is necessary for successfully passing the colloquium.

Assessment methods

First Aid ends with a colloquium consisting of two parts: • On-line test after 7th practise • Practical part – 1 simulation focused on the access to the unconscious and CPR of an adult or child; the evaluation of the simulation follows a standardized checklist – OSCE (Objective Structured Clinical Evaluation); the course is basically no different from what students will get used to in Practice.

Language of instruction

English

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aVLCJ0181 Czech Language for Foreigners I – practice

Faculty of Medicine
autumn

Extent and Intensity

45 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

PhDr. Ivana Rešková, Ph.D.

Language Centre, Faculty of Medicine Division – Faculty Branches of University Departments – Faculty of Medicine

Contact Person: PhDr. Ivana Rešková, Ph.D.

Supplier department: Language Centre, Faculty of Medicine Division – Language Centre

Course objectives

The main aim of the course Czech for Foreigners is to teach students to communicate with patients in Czech without any help of English speaking doctors or interpreters and independently take case history. Successful communication in Czech is required by all medical universities during their practical training at Czech hospitals. The aim of the Czech I course is working knowledge of the Czech language on the A1 level of the "Common European Framework of Reference" (CEFR/Independent User) checked by an examination.

Learning outcomes

After first year students can:

- understand vocabulary and basic phrases related to students, their families, and their immediate specific surrounding, provided people speak clearly and at a slow rate.

- communicate in common routine tasks, such as shopping, accommodation, using public transport, orientation in the city, asking the way, being able to describe their place of living and people they know by simple phrases and sentences.

- fill in forms with personal data, such as name, nationality and address when applying for residence accommodation.

Emphasis put on knowledge of parts of body and basic useful phrases in medical communication.

Syllabus

- 1st week: LEKCE 1/1: Communicative Competency: Introduction, Greetings. Phrases in the classroom. Instructions. Where are you from? What do you do? Grammar: Czech alphabet. Pronunciation. Vowels, diphthongs. Consonants, assimilation of consonants in groups. Personal pronouns. The verb "být". The numbers 1–10.
- 2nd week: LEKCE 1/2: Communicative Competency: What do you do in Brno? Grammar: Who is it? What is it? Natural genders in Czech. Adressing people. Verb conjugation I (-at, -et/ět/-it, -ovat). The verb "mít".
- 3rd week: LEKCE 2/1: Communicative Competency: Where is it? Locations. How can I get there? Grammar: Grammatical genders I. Nominative sg. Ten, ta, to. Adjectives: hard and soft. Adverbs of direction and location.
- 4th week: PROGRESS TEST 1. LEKCE 2/2: Communicative Competency: Asking for and giving directions. Jedu autem etc. Writing e-mails. Grammar: The verbs jít versus jet. Líbí se mi, chutná mi. The numbers 11-1000. Project 1: Mail kamarádovi/kamarádce.
- 5th week: LEKCE 3/1: Communicative Competency: Food and drink. In a restaurant. Grammar: Genders II (revision). Conjugation -u. The verbs chtít, jíst and mít rád/a.
- 6th week: LEKCE 3/2: Communicative Competency: Invitation. Grammar: The accusative singular I. Expressions with the verb mít.
- 7th week: PROGRESS TEST 2. LEKCE 4/1. Communicative Competency: My family. How old are you? Grammar: Possessive pronouns. Jaký, -á, -é?
- 8th weeks: LEKCE 4/2. Communicative Competency: Petr's family. Grammar: Revision of the accusative. Accusative sg of Ma. Questions KOHO, CO? Verbs and basic prepositions with accusative. The numbers 1000-10 000. Project 2: Moje rodina.
- 9th week: PROGRESS TEST 3. LEKCE 5/1. Communicative Competency: REVISION: Formal and informal dialogues (Introduction, In a restaurant, Invitation, Your family). Grammar: When is it? What time is it? Times of the day.
- 10th week: LEKCE 5/2: Communicative Competency: Marina's day. Daily routine. Grammar: What time is it? Talking about time (revision). Modal verbs I. Days of the week.
- 11th week: PROGRESS TEST 4 (ORAL TEST).
- 12th week: REVISION TEST 5 (UNITS 1-5). LEKCE 5/3. Communicative Competency: When will we meet? Marina's week. Grammar: Modal verbs II. The expression rád/a/i. Prepositions od-do. PROJECT 3: Můj den.
- 13th week: FINAL TEST (PRE-TERM) FOR ALL GROUPS.

- 14th week: DISSECTION PRACTICE.

Literature

required literature

- HOLÁ, Lída. Česky krok za krokem 1. Praha: Akropolis 2016. 260 s. ISBN 978-80-7470-129-0.
- HOLÁ, Lída a kol. Česky krok za krokem 1. Pracovní sešit (Lekce 1-12). Praha: Akropolis 2016. 160 s. ISBN 978-80-7470-133-7.

Teaching methods

The tuition is realised in the form of practical courses. The following teaching methods are used: class discussion, roleplay, work in groups, reading, listening, writing HW (including Projects), word study. Emphasis put on selfstudy!

Assessment methods

The tuition is realised in the form of practical courses. The students' presence in these courses is strictly required; a maximum of two unexcused absences is tolerated. Students are allowed to substitute a maximum of TWO classes with another group. Substitutions are not possible in the weeks when Progress Tests take place. Students must inform the teacher of the group in which they intend to substitute their missed class in writing in advance. If they fail to do so, they will not be allowed to attend the class. The substitution of two missed classes is not allowed within one week. If a student has more than two unexcused absences, they will not be allowed to take the Final test. The tuition is finished by a course-unit credit given on the basis of the students' presence, preparation for classes, sitting Progress Tests and their successful passing of a credit test. The basic limit for passing all tests is 70 %. There will be five progress tests (4 written, 1 oral), each for 30 points (altogether 150 points). In case of passing five Progress tests (passmark for each test is 21/30 points) the basic limit in the credit test is reduced by 10 %. If students a) succesfully pass all progress tests (must be taken only during the test week), b) get at least 135 points in total (both conditions must be met), they do not have to take the Final test. Any copying, recording or leaking tests, use of unauthorized tools, aids and communication devices, or other disruptions of objectivity of exams will be considered non-compliance with the conditions for course completion as well as a severe violation of the study rules. Consequently, the teacher will finish the exam by awarding grade "N" in the Information System, and the Dean will initiate disciplinary proceedings that may result in study termination.

Language of instruction

English

YEAR 1 / SEMESTER 2

aVLAN0222c Anatomy II - dissection

Faculty of Medicine
spring

Extent and Intensity

40,5 hrs of practical classes | Type of Completion: z (credit)

2 ECTS | Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of this course are:

- acquire basic abilities for tissue preparation
- find anatomical structures on the head, neck, thorax, abdomen and pelvis including internal organs using anatomical dissection
- connect theoretical knowledge of the structures on the head, neck, thorax, abdomen and pelvis with their real composition

Learning outcomes

At the end of the course students should be able to:

- Define topographical regions of the head, neck, thorax, abdomen, and pelvis
- Identify basic anatomical structures (bones, joints, viscera, vessels, and nerves) in the regions of the head, neck, thorax, abdomen, and pelvis
- Demonstrate practically particular organs of the head, neck, thorax, abdomen, and pelvis at the human cadaver
- Review arrangement of layers from the superficial to deep in all regions of the head, neck, thorax, abdomen, and pelvis
- Distinguish abnormalities of the prosections.

Syllabus

- Dissection of the head: parotideomasseteric region, anterior facial region, temporal region, occipitofrontal region, cranial cavity, dissection of the brain, pharynx, parapharyngeal space, soft palate, infratemporal fossa, larynx, nasal cavity, orbit, temporal bone.
- Dissection of the neck: skin incisions, subcutaneous tissue, infrahyoid muscles, carotid triangle, suprahyoid region, cervical and brachial plexuses, subclavian triangle.
- Dissection of the thorax: skin incisions, subcutaneous tissue, muscular layer, axillary fossa, intercostal spaces, thoracic cavity, pleura and lungs, pericardium and heart, mediastinum.
- Dissection of the abdomen: skin incisions, subcutaneous tissue, muscular layer, inguinal region, abdominal cavity, situs viscerum, removal of organs, branches of the abdominal aorta, retroperitoneal space.
- Dissection of the pelvis: perineal region, external genital organs, ischioanal fossa, pelvic floor, organs of the lesser pelvis, the wall of the pelvis.

Literature

required literature

- DUBOVÝ, Petr. Instructions for anatomical dissection course. 1. dotisk 3. vyd. Brno: Masarykova univerzita, 2016. 71 pp. ISBN 978-80-210-6202-3.
- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012. 123 s. ISBN 9788024621159.
- DUBOVÝ, Petr. Gross anatomy and structure of the human nervous system. Third edition. Brno: Masarykova univerzita, 2012. 90 stran. ISBN 9788021061255.

recommended literature

- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. *Gray's anatomy for students*. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- GILROY, Anne Marie. *Atlas of anatomy*., 2016. ISBN 9781626232525.
- KACHLÍK, David and Ondřej VOLNÝ. *Memorix anatomy: comprehensive book of human anatomy in English and Latin*. Illustrated by Radovan Hudák - Jan Balko - Simona Felšőová - Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

not specified

- Gosling, Harris, Humpherson, Whitmore & Willan. Human Anatomy, Color Atlas and Textbook, 6th Edition. Elsevier Books, 2016. ISBN 9780723438274

Teaching methods

Anatomical dissection of the human body

Assessment methods

Credit

Language of instruction

English

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aVLAN0222p Anatomy II – lecture

Faculty of Medicine
spring

Extent and Intensity

45 hrs of theoretical classes

Type of Completion: zk (examination)

5 ECTS

Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of the course are:

- to describe structures of the the digestive, respiratory, urinary, male and female genital system, cardiovascular, lymphatic and nervous system
- to understand topographic anatomy of the organ systems
- to realize the relation between structure and function of the organ systems

Learning outcomes

At the end of the course students will be able to:

1. Describe and explain the function of the digestive, respiratory, urinary, male and female genital and cardiovascular organs, organs of senses, peripheral and central nervous systems
2. Relate digestive, respiratory, urogenital and cardiovascular organs, organs of senses, peripheral and central nervous systems with respect to adjacent structures
3. Identify distribution and function of the sympathetic and parasympathetic components of the autonomic nervous system
4. Define topographical regions of the head, neck, thorax, abdomen, and pelvis
5. Identify basic anatomical structures (bones, joints, viscera, vessels, and nerves) in the regions of the head, neck, thorax, abdomen, and pelvis

Syllabus

1. Digestive system

2. Respiratory system, Heart

3. Overview of the arteries and veins, Lymphatic system

4. Male genital system, Urinary system

5. Female genital system, pelvic floor

6. Introduction to the nervous system, Spinal cord – gross anatomy and structure, spinal nerve

7. Gross anatomy and structure of the brainstem

8. Gross anatomy and structure of the cerebellum and diencephalon

9. Gross anatomy and structure of the telencephalon Ventricles, meninges and blood supply of the CNS

10. Cranial nerves (CN V, VII, IX, X, XI, XII)

11. Visual and auditory systems, cranial nerves III, IV, VI, VIII

12. Neural pathways; regional anatomy of the head and neck

13. Autonomic nervous system (ANS), regional anatomy of the chest, abdomen and pelvis

14.+15. Dissection

Literature

required literature

- DUBOVÝ, Petr. *Gross anatomy and structure of the human nervous system.* Third edition. Brno: Masarykova univerzita, 2012. 90 stran. ISBN 9788021061255.

recommended literature

- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Handbook of Splanchnology and Angiology. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2020. 154 pp. ISBN 978-80-210-6771-4.
- DUBOVÝ, Petr. Gross anatomy and structure of the human nervous system. Third edition. Brno: Masarykova univerzita, 2012. 90 stran. ISBN 9788021061255.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Peripheral Nervous System. 1. dotisk 1. vyd. Brno: Masarykova univerzita, 2020. ISBN 978-80-210-8993-8.

recommended literature

- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. Gray's anatomy for students. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- GILROY, Anne Marie. Atlas of anatomy.?, 2016. ISBN 9781626232525.
- KACHLÍK, David and Ondřej VOLNÝ. Memorix anatomy: comprehensive book of human anatomy in English and Latin. Illustrated by Radovan Hudák – Jan Balko – Simona Felšőová – Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

not specified

- Gosling, Harris, Humpherson, Whitmore & Willan. Human Anatomy, Color Atlas and Textbook, 6th Edition. Elsevier Books, 2016. ISBN 9780723438274

Teaching methods

lectures

Assessment methods

Final examination – combined form

Language of instruction

English

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aVLAN0222s Anatomy II – seminar

Faculty of Medicine
spring

Extent and Intensity

45 hrs of practical classes

3 ECTS

Type of Completion: z (credit)

Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of the course are:

- to describe structures of the digestive, respiratory, urinary, male and female genital system, cardiovascular, lymphatic and nervous system including sense organs
- to recognize anatomical structures of the organ systems on the cadaverous material
- to understand to topographic anatomy of the organ systems
- to realize the relation between structure and function of the organ systems

Learning outcomes

At the end of the course students should be able to:

1. Define organs of the digestive, respiratory, urinary system, male and female genital system, cardiovascular and lymphatic system, senses, and organs of peripheral and central nervous systems
2. Identify particular anatomical features of the cardiovascular system, eye, ear, central and peripheral nervous systems (i.e. brain, spinal cord, and peripheral nerves) including their blood supply
3. Characterize function of organs of the cardiovascular system, senses, peripheral and central nervous systems
4. Discuss the distribution and function of the sympathetic and parasympathetic nervous systems
5. Relate studied organs with respect to adjacent structures

Syllabus

1. Digestive system

2. Respiratory system, Heart

3. Overview of the arteries and veins, Lymphatic system

4. Male genital system, Urinary system

5. Female genital system, pelvic floor

6. Introduction to the nervous system, Spinal cord – gross anatomy and structure, spinal nerve

7. Gross anatomy and structure of the brainstem

8. Gross anatomy and structure of the cerebellum and diencephalon

9. Gross anatomy and structure of the telencephalon Ventricles, meninges and blood supply of the CNS

10. Cranial nerves (CN V, VII, IX, X, XI, XII)

11. Visual and auditory systems, cranial nerves III, IV, VI, VIII

12. Neural pathways; regional anatomy of the head and neck

13. Autonomic nervous system (ANS), regional anatomy of the chest, abdomen and pelvis

14. + 15. Dissection (head, neck, thorax, abdomen and pelvis)

Literature

required literature

- DUBOVÝ, Petr. *Gross anatomy and structure of the human nervous system.* Third edition. Brno: Masarykova univerzita, 2012. 90 stran. ISBN 9788021061255.

recommended literature

- DRAKE, Richard L., Wayne VOGL and Adam W. M. MITCHELL. *Gray's anatomy for students*. Third edition. Philadelphia, Pa.: Churchill Livingstone, 2015. xxv, 1161. ISBN 9780702051319.
- Gosling, Harris, Humpherson, Whitmore & Willan. Human Anatomy, Color Atlas and Textbook, 6th Edition. Elsevier Books, 2016. ISBN 9780723438274
- GILROY, Anne Marie. *Atlas of anatomy*. 2016. ISBN 9781626232525.
- KACHLÍK, David and Ondřej VOLNÝ. *Memorix anatomy: comprehensive book of human anatomy in English and Latin*. Illustrated by Radovan Hudák - Jan Balko - Simona Felšőová - Šárka Zaváza. 1st edition. Praha: Triton, 2015. xvii, 610. ISBN 9788073879501.

not specified

- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Handbook of Splanchnology and Angiology. 3. dotisk 1. vyd. Brno: Masarykova univerzita, 2020. 154 pp. ISBN 978-80-210-6771-4.
- HRADILOVÁ SVÍŽENSKÁ, Ivana, Michaela RAČANSKÁ and Petr DUBOVÝ. Anatomy. Peripheral Nervous System. 1. dotisk 1. vyd. Brno: Masarykova univerzita, 2020. ISBN 978-80-210-8993-8.

Teaching methods

Practice with the human anatomical specimens. Practical training (about 10 % of the total volume of teaching) is complemented by teaching in SIMU on dissection simulator.

Assessment methods

Credit

Language of instruction

English

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aVLAN0222t Anatomy II – practice

Faculty of Medicine
spring

Extent and Intensity

9 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

doc. MUDr. Marek Joukal, Ph.D.

Department of Anatomy – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Marek Joukal, Ph.D.

Supplier department: Department of Anatomy – Theoretical Departments – Faculty of Medicine

Course objectives

The main aims of the course are:

- to describe structures of the head, neck, chest, abdomen and pelvis on X-ray, CT and MRI images
- to identify and limit topographical regions on the head, neck, chest, abdomen and pelvis
- to assess relations between the anatomical structures in topographical regions of the head, neck, chest, abdomen and pelvis including their organization from superficial to deep layers

Learning outcomes

At the end of the course the student will able to recognize anatomical structures of the head, neck, chest, abdomen and pelvis on X-ray, CT and MRI images. Students will be able to identify and limit topographical regions on the head, neck, chest, abdomen and pelvis. Students should be able to assess relations between the anatomical structures in topographical regions of the head, neck, chest, abdomen and pelvis including their organization from superficial to deep layers.

Syllabus

1. Regional anatomy of the head. Head in imaging techniques.

2. Regional anatomy of the neck and chest. Neck and chest in imaging techniques.

3. Regional anatomy of the abdomen and pelvis. Abdomen and pelvis in imaging techniques.

Literature

required literature

- STINGL, Josef, Miloš GRIM and Rastislav DRUGA. Regional anatomy. 1. vyd. Praha: Galén, 2012, 123 s. ISBN 9788024621159.

recommended literature

- NEUWIRTH, Jiří. Anatomia Radiologica Thoracica Basalis. 1. vyd. Praha: Triton, 2007. 66 s. ISBN 807254831X.

- NEUWIRTH, Jiří. Anatomia neuro radiologica basalis. 1. vyd. Praha: Triton, 2006, 122 s. ISBN 8072548441.

not specified

- SVÍŽENSKÁ, Ivana and Vlastimil VÁLEK. Základy anatomie v zobrazovacích metodách. I. Skiaskopie a skiagrafie (Anatomy in image methods. I. Skiascopy and skiagraphy). První. Brno: IDVPZ Brno, MU Brno, Boston Scientific ČR s.r.o., 2001, 72 pp. ISBN 80-7013-334-1.
- ELLIS, Harold, B. M. LOGAN and Adrian K. DIXON. Human sectional anatomy: atlas of body section, CT and MRI imaging. 3rd ed. London: Hodder Arnold, 2007, xvii, 267. ISBN 9780340912225.
- ELLIS, Harold, B. M. LOGAN and Adrian K. DIXON. Human sectional anatomy : pocket atlas of body sections, CT and MRI images. 3rd ed. London: Hodder Arnold, 2009, xvii, 265. ISBN 9780340985168.
- HAAGA, John R. and Daniel T. BOLL. CT and MRI of the whole body. Sixth edition. Philadelphia, PA: Elsevier, 2017, xxii, 1191. ISBN 9780323113281.

Teaching methods

Practical class using simulators

Assessment methods

Credit

Language of instruction

English

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aVLBI0222c Medical Biology II – practice

Faculty of Medicine
spring

Extent and Intensity

45 hrs of practical classes

Type of Completion: z (credit)

3 ECTS

Taught in person

Guaranteed by

prof. RNDr. Ondřej Slabý, Ph.D.

Department of Biology – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Lívia Eiselleová, Ph.D.

Supplier department: Department of Biology – Theoretical Departments – Faculty of Medicine

Course objectives

The main objectives of the course are:

- learning the methods of risk evaluation for hereditary diseases of various molecular backgrounds in patients based on family anamneses
- understanding the basic principles of gene engineering
- understanding and practising selected molecular methods used for the examination of some cancers or hereditary and infectious diseases with regard to the selection of appropriate therapy

Learning outcomes

After completing the course, the student will be able to:

- evaluate the risk of hereditary diseases of various molecular backgrounds in patients based on assigned family anamneses of the diseases
- describes the basic principles of genetic prognosis and genetic counselling
- suggest and perform basic molecular-genetic diagnostic examinations of some hereditary, tumour and infectious diseases (PCR, restriction digest, gel electrophoresis) and interpret the obtained results
- explain selected basic techniques of gene engineering and their application in medicine, and, with knowledge of the used method, select the clones of cells with an inserted gene

Syllabus

- Week 1: Genetic disorders – autosomal inheritance
- Week 2: Genetic disorders – gonosomal inheritance
- Week 3: Extensions to basic genetics
- Week 4: Genetic prognosis and genetic counselling
- Week 5: Human population genetics
- Week 6: **Control test 3 (knowledge from week 1 to week 5 of the spring semester – lectures, practices)**
- Week 7: Molecular diagnostics of human pathogenic bacteria (1st half of the group)
- Week 8: Molecular diagnostics of human pathogenic bacteria (2nd half of the group)
- Week 9: Gene engineering – production of human proteins in bacterial cells (1st half of the group)
- Week 10: Gene engineering – production of human proteins in bacterial cells (2nd half of the group)
- Week 11: Molecular diagnostics of cancer (1st half of the group)
- Week 12: Molecular diagnostics of cancer (2nd half of the group)
- Week 13: **Control test 4 (knowledge from week 7 to week 12 of the spring semester – lectures, practices)**
- Week 14: no practices, **Re-sit test**
- Week 15: no practices, credit awarding

Literature

required literature

- Protocols for practices are provided in electronic form in the Information System of the Masaryk University in the Study Materials of the course aVLBI0222c

Teaching methods

laboratory practice, class discussion

Assessment methods

Practical classes are mandatory.

Requirements for course completion: full attendance in the practices (1 absence, excused or unexcused, is allowed); all protocols completed (also for missed lessons) and checked and signed by appropriate teachers; successfully passed 2 written control tests during the semester (knowledge from lectures and practices, 20 questions in each test, 1 answer correct to be chosen from 4 possibilities, student needs to reach at least 24 points out of 40 from both of the tests). In case you do not pass control tests (you have less than 24 points), you write a re-sit of the control test (knowledge from lectures and practices of the entire semester, 20 questions, 1 answer correct to be chosen from 4 possibilities, student needs to reach at least 12 points). If you do not pass the re-sit of the control test, you have to write the final test (Credit test) based on knowledge of the entire semester's lectures and practices. The credit test comprises 20 questions: 10 test questions (multiple answers can be correct, and negative marking is obtained for incorrect answers) + 10 given terms for a written explanation. At least 10 points out of 20 are needed to pass.

In case of a student’s late arrival to the practice or poor activity at the practice, the student must write an essay length of 2 pages on a given topic. Same for the case of two absences in practice (excused or unexcused). Find the instructions for essay writing in the Instructions for the course in the Interactive syllabus in the IS. Bring the essay printed to the teacher who specified the topic (after making an appointment during consulting hours), and be ready to answer the teacher's questions regarding the topic.

In case of 3 absences (excused or unexcused), (or more than 3 absences all excused by the Office for Studies within 5 days from the beginning of the absence and introduced to the Information System), it is addressed individually. Course-unit credit is awarded only after the proof of the student's knowledge of the entire semester's topics (Credit test, see above).

The course-unit credit is not awarded in the case of 4 or more unexcused absences.

Language of instruction

English

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aVLBI0222p Medical Biology II – lecture

Faculty of Medicine
spring

Extent and Intensity

30 hrs of theoretical classes

3 ECTS

Type of Completion: zk (examination)

Taught in person

Guaranteed by

prof. RNDr. Ondřej Slabý, Ph.D.

Department of Biology – Theoretical Departments – Faculty of Medicine

Contact Person: Ing. Lívia Eiselleová, Ph.D.

Supplier department: Department of Biology – Theoretical Departments – Faculty of Medicine

Course objectives

The main objectives of the course are:

- understanding of the basic principles of human genetics
- understanding of the mechanisms of cancer development
- acquaintance with the basics of genomics, immunogenetics, epigenetics, gene therapy, tissue engineering and evolutionary biology

Learning outcomes

After completing the course, the student will be able to:

- explain and apply basic principles of human genetics
- explain the role of medical biology in the development of modern therapies (e.g. molecular therapies for cancer)
- explain the basic principles of current methods used in gene therapy and cell therapies
- understand the significance of the human microbiome in human health and disease
- be knowledgeable in basic modern approaches to studying various diseases and to personalised medicine (genomics)

Syllabus

- Introduction to Genetics I – Genetics in Medicine, Mendelian Inheritance, Autosomal and Gonosomal Inheritance, Chromosome Abnormalities
- Introduction to Genetics II – Multifactorial Inheritance, Genetic Linkage, Population Genetics
- Human Genome
- Epigenetics – Interaction of Genes and Environment
- Immunogenetics
- Cancer Biology I – Carcinogenesis, Hallmarks of Cancer
- Cancer Biology II – Application of Cancer Biology into Cancer Diagnostics and Therapy
- Bacterial and Viral Genomics
- Gene Therapy
- Human Microbiome
- Stem Cells and Tissue Engineering
- Introduction to Human Ontogeny (Pre- and Postnatal Development)
- Evolutionary Biology

Literature

required literature

- ALBERTS, Bruce, Karen HOPKIN, Alexander JOHNSON, David Owen MORGAN, Martin C. RAFF, Keith ROBERTS and Peter WALTER. Essential cell biology. International student editio. New York: W.W Norton, 2019. xxxii, 734. ISBN 9780393680393.

- SNUSTAD, D. Peter and Michael J. SIMMONS. Principles of genetics. Sixth edition. Hoboken: John Wiley & Sons, 2012. xviii, 766. ISBN 9780470903599.

Teaching methods

lecture every week

Assessment methods

The course of Medical Biology II builds on the knowledge gained from Medical Biology I and is completed with an oral exam (knowledge of both semesters).

Language of instruction

English

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aVLHE0221c Histology and Embryology I - practice

Faculty of Medicine
spring

Extent and Intensity

45 hrs of practical classes

Type of Completion: z (credit)

2 ECTS

Taught in person

Guaranteed by

doc. MVDr. Aleš Hampl, CSc.

Department of Histology and Embryology – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Miroslava Sedláčková, CSc.

Supplier department: Department of Histology and Embryology – Theoretical Departments – Faculty of Medicine

Course objectives

At the end of the course students should be able to:

1. Describe tissue processing for light and electron microscopy.
2. Understand and explain the structure of a cell, basic structural principles and function of connective tissues, features of epithelial tissue, the structure of different types of muscle tissue, structure and function of nervous tissue.
3. Identify tissue types in histologic slides.
4. Characterize the microscopic structure of some organs of the human body and explain correlations of tissues within organs.
5. Describe gamete development, explain the principle of meiosis and regulation of gametogenesis.
6. Define the early embryonic development as well as the development of fetal membranes, placenta and umbilical cord.

7. Characterize stages of embryonic development.

Learning outcomes

At the end of the course students should be able to:

1. Describe tissue processing for light and electron microscopy.
2. Understand and explain the structure of a cell, basic structural principles and function of connective tissues, features of epithelial tissue, the structure of different types of muscle tissue, structure and function of nervous tissue.
3. Identify tissue types in histologic slides.
4. Characterize the microscopic structure of some organs of the human body and explain the correlations of tissues within organs.
5. Describe gamete development, explain the principle of meiosis and the regulation of gametogenesis.
6. Define the early embryonic development as well as the development of fetal membranes, placenta and umbilical cord.
7. Characterize stages of embryonic development.

Syllabus

1. Introduction, organization of practicals, teaching aids. Overview of histological methods. Tissue processing for light and electron microscopy – explanation and film. Basic histochemistry and immunocytochemistry.
2. **Cytology:** Ultrastructure of the cell nucleus during interphase. Ultrastructure of cell organelles I (mitochondria, the Golgi apparatus, the endoplasmic reticulum, ribosomes, lysosomes).
3. Ultrastructure of cell organelles II (peroxisomes, and the centriol). Cell inclusions. The arrangement of cell surfaces: apical, lateral, and basal ones. Intercellular junctions: adhering, occluding, and communicating ones.
4. General embryology I. Aids: Set of embryological schemes and pictures (I).
5. General embryology II. Aids: Set of embryological schemes and pictures (II).
6. **General histology**: Use of the light microscope, common faults in microscopy. Results of basic staining methods in histology: Hematoxylin-eosine /HE/ (hepar), hematoxylin–eosine-saffron /HES/ (esophagus), AZAN (prostate), impregnation (cerebellum). Connective tissue proper – classification and examples. Slides: Funiculus umbilicalis, Esophagus, Posterior segment of the eye, Lien, Aorta.
7. Supporting tissues: cartilage and bone. Histogenesis of the bone tissue (ossification). Slides: Trachea, Auricula, Elastic cartilage, Lamellar bone, Chondrogenic ossification.
8. Epithelial tissue: epithelial membranes (covering epithelia) and glandular epithelium. Slides: Ren, Vesica fellea, Trachea, Esophagus, Ureter, Palpebra, Skin from the finger tip.
9. Glandular epithelium. Skides: Intestinum tenue, Glandula parotis, Glandula submandibularis.
10. Nerve tissue. Slides: Cortex cerebri, Cerebellum, Medulla spinalis, Ganglion spinale, Peripheral nerve, Motor end plate.
11. Muscle tissue. Slides: Apex linguae, Cardiac muscle tissue Intestinum tenue.
12. Blood cells: Preparation of blood smears and their staining. Cytology of formed elements of blood. Differential white cell count (dWCC) - average values, abnormities and terminology of dWCC. Slide: A smear of peripheral blood stained by Pappenheim's method. Credits.

Literature

recommended literature

- VAŇHARA, Petr, Miroslava SEDLÁČKOVÁ, Irena LAUSCHOVÁ, Svatopluk ČECH and Aleš HAMPL. *Guide to General Histology and Microscopic Anatomy*. 1. vyd. Brno: Masarykova univerzita, 2017. ISBN 978-80-210-8453-7.
- MESCHER, Anthony L. *Junqueira's basic histology: text and atlas*. 13th ed. New York: McGraw-Hill Medical, 2013. xi, 544. ISBN 9781259072321.

not specified

- EROSCHENKO, Victor P. *Di Fiore's atlas of histology with functional correlations*. 9th ed. Philadelphia: Lippincott Williams-Wilkins, 2000. xv, 363. ISBN 0683307495.

Teaching methods

Content of this course includes study of slides and electron micrographs in microscopic hall as well as class discussion on the base of materials in the text book. Electronic textbooks are presented also in: http://www.med.muni.cz/histol/atlas.htm

Assessment methods

Testing of knowledge: Students must prove a sufficient level of knowledge by written test examination. Each student completes 4 partial tests during the semester. Tests are evaluated by point for a correct answer. More than half the number of correct answers (points) is evaluated as "Passed". All of these tests must be successful. In case of failure, only 1 resit is possible. There is condition 4 from 4 (ie. 4 P / 4 regular tests) or 4 from 5 (ie. 3 P / 4 regular tests + 1 P / 1 resit). If a student does not fulfill this condition, the credit test follows in the relevant exam period. This test covers all topics studied during the semester. In case of failure in credit test, a credit will not be given and student **must enroll the course again**.

Conditions for obtaining credit:

1. Attendance at all practical exercises (100 % participation, all absences must be regularly excused (in IS) and substituted).

2. Successful completion of all tests.

3. Submission of all protocols (correctly completed forms of protocols signed by the teacher).

Language of instruction

English

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aVLHE0221p Histology and Embryology I - lecture

Faculty of Medicine
spring

Extent and Intensity

30 hrs of theoretical classes 2 ECTS

Type of Completion: z (credit) Taught in person

Guaranteed by

doc. MVDr. Aleš Hampl, CSc.

Department of Histology and Embryology – Theoretical Departments – Faculty of Medicine

Contact Person: doc. MUDr. Miroslava Sedláčková, CSc.

Supplier department: Department of Histology and Embryology – Theoretical Departments – Faculty of Medicine

Course objectives

Course objectives

At the end of the course students should be able to:

1. Understand and explain the structure of a cell, basic structural principles and function of connective tissues, features of epithelial tissue, structure of different types of muscle tissue, structure and function of nervous tissue.
2. Identify tissue types in histologic slides.
3. Characterize microscopic structure of individual organs of human body and explain correlations of tissues within organs.
4. Describe gamete development, explain principle of meiosis and regulation of gametogenesis.
5. Define the early embryonic development as well as development of fetal membranes, placenta and umbilical cord.
6. Characterize stages of embryonic development, describe the development of individual organ systems of human body.
7. Explain the mechanism of the origin of some developmental anomalies.

Learning outcomes

At the end of the course students should be able to:

1. Describe tissue processing for light and electron microscopy.
2. Understand and explain the structure of a cell, basic structural principles and function of connective tissues, features of epithelial tissue, structure of different types of muscle tissue, structure and function of nervous tissue.
3. Identify tissue types in histologic slides.
4. Characterize microscopic structure of some organs of human body and explain correlations of tissues within organs.
5. Describe gamete development, explain principle of meiosis and regulation of gametogenesis.
6. Define the early embryonic development as well as development of fetal membranes, placenta and umbilical cord.
7. Characterize stages of embryonic development.

Syllabus

1. Introduction. The object and significance of histology. Relevance of histology to other biomedical disciplines. History, current state, and future of histology. Methodologies to study a structure of cells and tissues. Cytology: The cell – definition, characteristics,

compartmentalization. Cell nucleus – ultrastructure and function, chromosomes, nucleolus. Introduction

2. Organelles – structure, localization, and function. Cell inclusions and pigments. Cytoskeleton – microfilaments, intermediate filaments and microtubules. Cell surface structures and intercellular bonds. Cell division cycle. Cell differentiation, cell migration, organization of cells into tissues and organs – general aspects.
3. General embryology. Definition. The object and significance of embryology. Overview of the early human development: The phases of the human ontogeny. Human gametes – their structure, physiology and origin (gametogenesis). Differences between spermatogenesis and oogenesis. Transport of gametes. Sperm capacitation. Fertilization and cleavage. Activation of the embryonal genome. Nuclear transfer. Morula and blastocyst. Embryonic stem cells. Outline of the implantation. Abnormal sites of implantation (extrauterine pregnancies).
4. The development of the germ disc: origin of the intraembryonic mesoderm and notogenesis (development of the chorda dorsalis). Somites and their derivatives. Outline of the development of fetal membranes: amniotic sac, chorion, and placenta. Function of the placenta. The umbilical cord. Anomalies of the placenta and umbilical cord. Development of external shape of the embryo and fetus. The rule of Hasse. Uterine growth during pregnancy. Parturition. Marks of the mature and full-term fetus. Position, posture and presentation of the fetus. Multiple pregnancy: mono– and dizygotic twins; arrangement of fetal membranes in twins.
5. General histology. Tissues – definition, their origin, and classification. Connective and supporting tissue – general characteristics, their components and classification. The connective tissue proper – types, main distribution, and function.
6. Supporting tissues – cartilage and bone – types, main distribution, and function. Histogenesis and regeneration of connective tissues.
7. Epithelial tissue – definition, classification, and histogenesis. Epithelial membranes and glandular epithelium – an overview. Characteristics of glandular cells. Absorptive, respiratory, and sensory epithelia.
8. Neural tissue – general characteristics and classification. Neurons – structure and function. Synapse. Neuroglial cells – types and function. Sheaths of nerve fibres. Conduction of nerve impulses. Histogenesis and regeneration of the neural tissue.
9. Muscle tissue – general characteristics and classification. Smooth muscle tissue. Skeletal muscle tissue. Ultrastructure of the myofibrils. Mechanism of the muscle contraction. Cardiac muscle tissue. Inervation and vascularization of the muscle. Muscle histogenesis and regeneration.
10. Blood cell morphology: Erythrocytes, leukocytes and thrombocytes. Differential white cell count. Prenatal and postnatal hematopoiesis. Erythropoiesis, granulopoiesis, thrombopoiesis.
11. Microscopic anatomy and special embryology. Cardiovascular system. Microscopic structure of the heart, excitomotoric system – its structural peculiarities. Blood vessels – arteries and veins – structural differences. Capillary bed. Lymph vessels and capillaries.
12. Development of the heart. Primitive blood circulation in the embryo. Fetal blood circulation.

Literature

recommended literature

- MESCHER, Anthony L. *Junqueira's basic histology: text and atlas*. 13th ed. New York: McGraw-Hill Medical, 2013. xi, 544. ISBN 9781259072321.

- MOORE, Keith L., T. V. N. PERSAUD and Mark G. TORCHIA. *Before we are born : essentials of embryology and birth defects*. 9th edition. Philadelphia: Elsevier, 2016. xix, 361. ISBN 9780323313377.

not specified

- LOWE, James S. and Peter G. ANDERSON. *Stevens and Lowe´s Human Histology*. 4th. : Elsevier, 2015. ISBN 978-0-7234-3502-0.
- OVALLE, William K., Patrick C. NAHIRNEY and Frank H. NETTER. *Netter's essential histology*. 2nd ed. Philadelphia, PA: Elsevier/Saunders, 2013. xv, 517. ISBN 9781455706310.
- MOORE, Keith L., T. V. N. PERSAUD and Mark G. TORCHIA. *The developing human : clinically oriented embryology*. 9th ed. Philadelphia, PA: Saunders/Elsevier, 2013. xix, 540. ISBN 9781437720020.
- SADLER, T. W. *Langman's medical embryology*. 12th ed. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins, 2012. xiii, 384. ISBN 9781451144611.

Teaching methods

lecture

Assessment methods

Students will pass examination after finishing Histology and Embryology II - lecture. All informations about required knowledge and the course of examination are on web site: http://www.med.muni.cz/histology/education

Language of instruction

English

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aVLLT0222c Basic Medical Terminology II - practice

Faculty of Medicine
spring

Extent and Intensity

15 hrs of practical classes

Type of Completion: z (credit)

1 ECTS

Taught in person

Guaranteed by

Mgr. Natália Gachallová, Ph.D.

Language Centre, Faculty of Medicine Division – Language Centre

Contact Person: Mgr. Libor Švanda, Ph.D.

Supplier department: Language Centre, Faculty of Medicine Division – Language Centre

Course objectives

Greek-Latin medical terminology is essential means for understanding the professional medical terminology. The curriculum conveys both theoretical and practical concepts used in medical documentation and is conceived as a preparatory course sui generis, introducing the students into the study of medicine by means of its language. In the first semester, the focus is put on the understanding of clinical terminology, word compounding, and terms used in medical prescriptions.

The content of the course is fully derived from the actual needs of the professional practice. In the first place, it provides students with instruction on how to apply Latin and/or Greek quickly and purposefully, ie. the student are required to master the semantic aspect of terms, the grammatical forms and their functions. It also systematically develops student´s ability to indepedently analyze medical terms, solve terminological problems, and form medical terms. Last but not least, the course also introduces the wider historical and linguistic foundations of medical terminology as well as its general theoretical contexts.

Learning outcomes

At the end of the course students will be able to:

apply relevant Latin and Greek medical terms and expressions correctly and with understanding;

recognize and explain grammatical concepts and categories relevant to the acquisition of Greek-Latin medical terminology;

explain syntactic structure of complex terms;

recognize the semantic structure of selected anatomical and clinical compound terms;

form compound words applying the most used word-formation principles and guess the meanings of unknown terms based on the semantic, grammatical, and logical relations;

understand complex anatomical terms and clinical diagnoses;

write a medical report using common abbreviations and following the conventional structure;

write a medical prescription using conventional formulae, understand the function of basic types of medications based on the terminology.

Syllabus

- **Basic medical terminology - practice.** Syllabus.
- *1st week:* Revision of the 1st semester´s curriculum with focus on the adjectives of 3rd declension.
- *2nd week:* Comparison of adjectives. Dimminutive forms.
- *3rd week:* Basic word-formation principles. Expressing position in medical terminology.
- *4th week:* Numerals in clinical diagnose. Latin and Greek prefixes derived from prepositions.
- *5th week:* Greek roots referring to anatomical structures and bodily liquids.
- *6th week:* Progress test I. Greek roots referring to pathological states and diseases.
- *7th week:* Greek roots referring to medical interventions and examinations.

- *8th week:* Revision of compound words using Greek roots.
- *9th week:* Progress test II. Specific pathological states and terms related to them.
- *10th week:* Structure of Czech medical prescription. Most common formulae used in pharmacology.
- *11th week:* Revision of medical prescriptions. Forms of medications.
- *12th week:* Structure of dissection protocol. Final revision.
- *13th week:* Dissections.
- *14th week:* Dissections.

Literature

recommended literature

- PRUCKLOVÁ, Renata and Marta SEVEROVÁ. *Introduction to Latin and Greek terminology in medicine*. 3rd, rev. ed. Praha: KLP, 2012. xii, 115. ISBN 9788086791241.
- EHRLICH, Ann and Carol L. SCHROEDER. *Medical terminology for health professions*. 6th ed. Clifton Park, NY: Delmar, Cegage Learning, 2009. xxvi, 582. ISBN 9781418072520.

Teaching methods

lectures, presentations, translation and grammar exercises, drills, group activities, authentic diagnoses

Assessment methods

Requirements for gaining the credit: regular class attendance, active participation in class, preparation for classes, passing the credit test (60-70% based on the passing/failing the progress tests) - see the study requirements. Only one unexcused absence will be tolerated; further absences must be properly excused (i.e. via the Study Department of the Faculty of Medicine).

Language of instruction

English

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aVLLT0222s Basic Medical Terminology II - seminar

Faculty of Medicine
spring

Extent and Intensity

15 hrs of practical classes

4 ECTS

Type of Completion: zk (examination)

Taught in person

Guaranteed by

Mgr. Natália Gachallová, Ph.D.

Language Centre, Faculty of Medicine Division – Language Centre

Contact Person: Mgr. Libor Švanda, Ph.D.

Supplier department: Language Centre, Faculty of Medicine Division – Language Centre

Course objectives

Greek-Latin medical terminology is one of the relevant means for acquisition of the target knowledge of medical students. The tuition is of both theoretic and practical character, conceived as a preparatory course sui generis, introducing the students into the study of medicine by means of its language.

The content of tuition is, like the set of knowledge postulated in the examination, exclusively determined by the needs of the discipline and medical practice. In the first place it provides such knowledge of Latin and/or Greek as enables the student to master quickly and purposefully the semantic aspect of terms, their grammatical form, and word-forming structure. Simultaneously, it provides a systematic instruction to independent solution of current terminological problems consisting in understanding of the technical content of the terms and in the formation of medical terms. Besides, it opens a view of the wider historical and linguistic fundamentals of medical terminology as well as its general theoretical contexts.

Learning outcomes

At the end of the course students should be able to:

- use Latin and Greek-Latin medical terminology and expressions correctly and understand them;
- explain and apply grammatical devices and rules relevant for acquisition of Greek-Latin medical terminology;
- recognize the syntactic structure of complex terms;
- describe the semantic structure of one-word terms;
- form compound words applying the most used word-formation principles;
- translate selected expressions from anatomy, pre-clinical and clinical fields of study, medical prescriptions, and pharmacology;
- guess the meanings of unknown terms on the basis of semantic, grammatical and logical relations.

Syllabus

- **BASIC MEDICAL TERMINOLOGY - seminar.** Syllabus.
- *1st week:* Discussing common mistakes in the credit test. Practicing problematic issues.
- *2nd week:* Comparatives, superlatives, and dimminutive forms in anatomical nomenclature. Authentic diagnoses focused on fractures.
- *3rd week:* Medical terms referring to position: adjectives, Latin and Greek prefixes and suffixes, Latin comparatives and superlatives. Student presentation on position terminology.
- *4th week:* Muscle nomenclature. Student presentation on terms denoting facial expressions.

- *5th week:* Expressing resemblance in shape and form in anatomical nomenclature. Student presentation on colours in medical terminology.
- *6th week:* Progress test I. Terms specifying the progress of a disease.
- *7th week:* Diseases and the relevant medical interventions and examinations. Student presentation on the terms denoting inflammations and types of fever.
- *8th week:* Expressing extent and degree in medical terminology. Student presentation on terms related to particular ages of human life.
- *9th week:* Progress test II. Working with authentic medical reports containing compound words.
- *10th week:* How to write a medical prescription. Basic types of medications and their functions.
- *11th week:* Expressing quality and quantity in medical terminology. Student presentation on terms specifying types of pulses.
- *12th week:* Working wth an authentic dissection protocol. Student presentation on terms related to death.
- *13th week:* Dissections.
- *14th week:* Dissections.

Literature

recommended literature

- PRUCKLOVÁ, Renata and Marta SEVEROVÁ. *Introduction to Latin and Greek terminology in medicine*. 3rd, rev. ed. Praha: KLP, 2012. xii, 115. ISBN 9788086791241.
- EHRLICH, Ann and Carol L. SCHROEDER. *Medical terminology for health professions*. 6th ed. Clifton Park, NY: Delmar, Cegage Learning, 2009. xxvi, 582. ISBN 9781418072520.

Teaching methods

lectures, presentations, translation and grammar exercises, drills, group activities, authentic diagnoses

Assessment methods

Requirements for passing the course: 1) max. one unexcused absence 2) submitting an in-class interactive activity aimed at clarification of the terms related to selected topics 3) passing a written exam testing the grammatical phenomena used in medical terminology; the pass limit is 70% to 60%, depending on the results of progress tests. 4) passing the oral exam examining two aspects of medical terminology: a) pharmacological terms in medical prescription; b) clinical terms in medical documentation with emphasis on compound words of Greek origin. Students are admitted to oral exam only after passing the written exam. The final grade is based on making an average of the score in written exam and performance in oral exam. See the Course requirements in the Study materials of the course.

Language of instruction

English

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aVLCJ0282 Czech Language for Foreigners II - practice

Faculty of Medicine
spring

Extent and Intensity

45 hrs of practical classes

Type of Completion: zk (examination)

2 ECTS

Taught in person

Guaranteed by

PhDr. Ivana Rešková, Ph.D.

Language Centre, Faculty of Medicine Division – Faculty Branches of University Departments – Faculty of Medicine

Contact Person: Mgr. Veronika Dvořáčková, Ph.D.

Supplier department: Language Centre, Faculty of Medicine Division – Faculty Branches of University Departments – Faculty of Medicine

Course objectives

The aim of the tuition is working knowledge of the Czech language on the A2 level of the "Common European Framework of Reference" (CEFR) checked by an examination. Students will also learn the vocabulary and phrases from the healthcare at the level of A1 and A2 according to the CEFR. The main aim of the course Czech for Foreigners is to teach students to communicate with patients in Czech without any help from English speaking doctors or interpreters and independently write case history.

Learning outcomes

First year students:

- can understand vocabulary and basic phrases related to students, their families, and their immediate specific surrounding, provided people speak clearly and at a slow rate
- communicate in common routine tasks, such as shopping, accommodation, using public transport, orientation in the city, asking the way, being able to describe their place of living and people they know by simple phrases and sentences
- they should also be able to fill in forms with personal data, such as name, nationality and address when applying for residence accommodation
- know vocabulary (parts of body) and phrases from the healthcare at the level of A1 and A2 according to the CEFR

Syllabus

- **Syllabus of Czech for Foreigners II.**

- 1st week: REVISION LESSON. UNIT 6/1: Conversation: Daily routine. Talking about time. What did you do today? Grammar: Past tense I-regular forms.
- 2nd week: UNIT 6/2: Conversation: Where were you? Grammar: Past tense II (irregular forms). Reflexive verbs: ses, sis. The second position in Czech sentences. Locative singular.
- 3rd week: PROGRESS TEST 1 (UNITS 1-6). LESSON 6/3: Conversation: Do you know who it was? Grammar: Time expressions. Verbs ZNÁT a VĚDĚT. Countries and nationalities.
- 4th week: UNIT 7/1: Conversation: Houses and flats. Furniture. Grammar: Nominative and accusative plural (Mi, F, N).
- 5th week: UNIT 7/2: Conversation: Looking for accommodation. Grammar: Numerals dva-dvě. The date: ordinal numbers, months, seasons. Medical Czech: TM U1: Human body I (Head).
- 6th week: UNIT 8/1: Conversation: Planning our weekend. Grammar: The future tense. Medical Czech: Human body II (Neck and Trunk).
- 7th week: PROGRESS TEST 2. UNIT 8/2: Conversation: Free time activities. Grammar: KAM? Expressing directions. Prepositions NA-DO-K/KE). Medical Czech: Human body III (Internal and genital organs).
- 8th week: REVISION Units 6-8. Conversation: What did you do yersterday? Plan your future. Grammar: Revision. Medical Czech: Human body IV (Extremities).
- 9th week: PROGRESS TEST 3 (VIDEO). UNIT 9/1: Conversation: Describing of Human body. What do we look like? Grammar: Nominative plural of body parts. Personal pronouns in the accusative and dative (Bolí/bolelo mě, je mi dobře/špatně.) Medical Czech: Human body V (Skeleton).
- 10th week: UNIT 9/2: Conversation: At the doctor's. At the pharmacy. Grammar: Accusative object-centered constructions. Prepositions with the accusative (na, pro, za, o). Medical Czech: Symptoms of diseases I (TM U4).
- 11th week: UNIT 10/1: Conversation: The place where we live. Grammar: The genitive singular (nouns). Basic prepositions with the genitive. Medical Czech: Symptoms of diseases II (TM U4).
- 12th week: PROGRESS TEST 4 (ORAL). Conversation: Kde jsi byl? Kam půjdeš/pojedeš? U lékaře. Grammar: Revision. Medical Czech: TM U1 and U4.
- 13th week: Mock test. Revision.
- FINAL WRITTEN EXAM (Pre-term May, 12).

Literature

required literature

- HOLÁ, Lída. Česky krok za krokem 1. Praha: Akropolis 2016. 260 s. ISBN 978-80-7470-129-0.
- HOLÁ, Lída a kol. Česky krok za krokem 1. Pracovní sešit (Lekce 1-12). Praha: Akropolis 2016. 160 s. ISBN 978-80-7470-133-7.
- ČERMÁKOVÁ, Iveta. *Talking medicine : Czech for medical students*. 3., rev. English ed. Prague: Karolinum Press, 2012. 261 s. ISBN 9788024621043.

recommended literature

- GRUNDOVÁ, Dominika. *Needs of Patients. Czech-English Phrasebook for Beginners.* 2., revid. vyd. Praha: Eurolex Bohemia, 2004. 104 pp. ISBN 80-86432-86-6.

Teaching methods

The tuition is realised in the form of practical courses. The following teaching methods are used: class discussion, roleplay, work in groups, reading, listening, writing HW (including Projects), word study.

Assessment methods

The tuition is realised in the form of practical courses. The students' presence in these courses is strictly required; a maximum of two unexcused absences is tolerated. Students are allowed to substitute a maximum of TWO classes with another group. Substitutions are not possible in the weeks when Progress Test take place. Students must inform the teacher of the group in which they intend to substitute their missed class in writing in advance. If they fail to do so, they will not be allowed to attend the class. A student is obliged to provide a written excuse letter to the faculty Office for Studies justifying his/her absence within five workdays of the teaching activity he/she was absent from. If a student has more than two unexcused absences, they will not be allowed to take the Final test. The tuition is finished by an end-of-term examination (ETE) consisting of a WRITTEN and an ORAL part. Passing the examination is conditioned by proper attendance, active participation in practical courses, sitting for Progress Tests and successful passing of written and oral exams. The basic limit for passing all tests is 70 %. There will be four progress tests (2 written, 2 oral). In case of passing four Progress tests (passmark for each test is 70 %) the basic limit in the credit test is reduced by 10 %. If students a) succesfully pass all progress tests (must be taken only during the test week), b) get at least 90 % in total (both conditions must be met), they do not have to take the written part of Final test. Without successful passing the written exam students will not be allowed to sit for the oral part. Any copying, recording or leaking tests, use of unauthorized tools, aids and communication devices, or other disruptions of objectivity of exams (credit tests) will be considered non-compliance with the conditions for course completion as well as a severe violation of the study rules. Consequently, the teacher will finish the exam by awarding grade "F" in the Information System.

Language of instruction

English
