Semester 2, 2021/2022

Programme of lectures and practicals in histology and embryology for the 1st year of General medicine (aVL)

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Lectures	Practice
1. **14. 2. – 18. 2. 2022** **Introduction:** Histology – definition, classification and significance. **Cytology I:** The cell – definition and general characteristics. Concept of the unit membrane.	1. **14. 2. – 18. 2. 2022** Introduction, organization of practicals. **Introduction into histological technique.** Tissue processing for light and electron microscopy.
2. **21. 2. – 25. 2. 2022** **Cytology II:** Plasma membrane. Cell surfaces and intercellular junctions. Cell cycle, cell division and cell differentiation.	2. **21. 2. – 25. 2. 2022** **Cytology I.** The cell nucleus and cell organelles (mitochondria, Golgi apparatus, endoplasmic reticulum, ribosomes, lysosomes, peroxisomes). Aids: Atlas of Cytology and Embryology
3. **28. 2. – 4. 3. 2022** **General embryology I:** Human gametes. Meiosis: spermatogenesis and oogenesis. Sperm capacitation and acrosome reaction. Fertilization and cleavage. Morula and blastocyst.	3. **28. 2. – 4. 3. 2022** **Cytology II.** Centriole and cytoskeleton (actin and intermediate filaments, microtubules). Cell inclusions. Cell surfaces and intercellular junctions. Aids: Atlas of Cytology and Embryology.
4. **7. 3. – 11. 3. 2022** **General embryology II:** Implantation. Differentiation of trophoblast and embryoblast during implantation. Development of fetal membranes: amnion, chorion. Development of placenta. Intraembryonic mesoderm and notochord.	4. **7. 3. – 11. 3. 2022** **General embryology I.** Aids: Set of embryological schemes and pictures (I). Aids: Atlas of Cytology and Embryology
5. **14. 3. – 18. 3. 2022** **General embryology III:** Embryoblast and germ disc. Stages of human embryonic and fetal development. Congenital malformations and prenatal diagnostics.	5. **14. 3. – 18. 3. 2022** **General embryology II.** Aids: Set of embryological schemes and pictures (II). Aids: Atlas of Cytology and Embryology
6. **21. 3. – 25. 3. 2022** **General histology:** Tissues – definition, origin and classification. Connective tissues. Connective tissue proper.	6. **21. 3. – 25. 3. 2022** **General histology.** Light microscopy. Basic staining methods in histology (HE, HES, AZAN, impregnation).
7. **28. 3. – 1. 4. 2022** Connective supporting tissues – cartilage and bone. Development of bone tissue (ossification).	7. **28. 3. – 1. 4. 2022** Connective tissue proper. Slides: Funiculus umbilicalis, oesophagus, posterior segment of the eye, lien, aorta.
8. **4. 4. – 8. 4. 2022** Epithelial tissue. Covering and glandular epithelia. Absorptive, respiratory, and sensory epithelia.	8. **4. 4. – 8. 4. 2022** Supporting tissue: cartilage and bone. Histogenesis of bone tissue (ossification). Slides: Trachea, auricula, elastic cartilage, lamellar bone, chondrogenic ossification.

9. **11. 4. – 15. 4. 2022** Nervous tissue. Neuron and its processes, classification of neurons. Synapse. Neuroglial cells and sheaths of nerve fibers. Propagation of nerve impulses.	9. **11. 4. – 15. 4. 2022** **15.4. Good Fri** Covering epithelia. Slides: Ren, vesica fellea, trachea, oesophagus, ureter, palpebra, skin from the finger tip.
10. **18. 4. – 22. 4. 2022** Muscle tissue – smooth muscle tissue, skeletal muscle tissue, and cardiac muscle tissue. Myofibrils and mechanism of muscle contraction.	10. **18. 4. – 22. 4. 2022** **18.4. Easter Mo** Glandular epithelium. Slides: Intestinum tenue, pylorus, skin with hair, gl. parotis, gl. submandibularis.
11. **25. 4. – 29. 4. 2022** **Blood cell morphology:** Erythrocytes, leukocytes and thrombocytes. Differential white cell count. Prenatal and postnatal hematopoiesis. Erythropoiesis, granulopoiesis, thrombopoiesis.	11. **25. 4. – 29. 4. 2022** Nervous tissue: neuron, synapses; neuroglia. Slides: Cortex cerebri, cerebellum, medulla spinalis, ganglion spinale, peripheral nerve; motor end plate – demonstration.
12. **2. 5. – 6. 5. 2022** **Microscopic anatomy and embryology.** Microscopic structure of the heart and blood vessels.	12. **2. 5. – 6. 5. 2022** Muscle tissue. Slides: Apex linguae, intestinum crassum, myocardium. Repetition of tissues.
13. **9. 5. – 13. 5. 2022** Development of the heart, septation of the heart tube. Primitive blood circulation in the embryo. Fetal blood circulation.	13. **9. 5. – 13. 5. 2022** **Blood cells:** Erythrocytes, leukocytes. Differential White Cell Count (DWCC). Thrombocytes. Slide: A smear of peripheral blood. Development of blood cells (hematopoiesis) - by teacher´s presentation.
14. 16. 5. – 20. 5. 2022 dissections	14. 16. 5. – 20. 5. 2022 dissections
15. 23. 5. – 27. 5. 2022 dissections	15. 23. 5. – 27. 5. 2022 dissections
14. 16. 5. – 20. 5. 2022 Selected lecture	14. 16. 5. – 20. 5. 2022 Repetition, credit.
15. 23. 5. – 27. 5. 2022 dissections	15. 23. 5. – 27. 5. 2022 dissections

Conditions for obtaining credit:

1. *Attendence at all practices (100% participation, all absences must be properly excused in IS and substituted).*
2. *Submission of all protocols (correctly completed forms of protocols signed by teacher).*
3. *All tests successfully passed (4 partial tests, eventually 1 partial repetition test; in case of failing more partial tests, 2nd repetition test from all topics of that semester will be written at the end of the semester)*

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