

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

Programme of lectures and practicals in histology and embryology for the 1st year of Dentistry

Lectures

1. 18. 02. – 22. 02. 2019 Introduction: Histology – definition, classification and significance. Cytology I: The cell – definition and general characteristics. Concept of the unit membrane.
2. 25. 02. – 01. 03. 2019 Cytology II: Plasma membrane. Cell surfaces and intercellular junctions. Cell cycle, cell division and cell differentiation.
3. 04. 03. – 08. 03. 2019 General embryology I: Human gametes. Meiosis: spermatogenesis and oogenesis. Sperm capacitation and acrosome reaction. Fertilization and cleavage. Morula and blastocyst.
4. 11. 03. – 15. 03. 2019 General embryology II: Implantation. Differentiation of trophoblast and embryoblast during implantation. Development of fetal membranes: amnion, chorion. Development of placenta. Intraembryonic mesoderm and notochord.
5. 18. 03. – 22. 03. 2019 General embryology III: Embryoblast and germ disc. Stages of human embryonic and fetal development. Congenital malformations and prenatal diagnostics.
6. 25. 03. – 29. 03. 2019 General histology: Tissues – definition, origin and classification. Connective tissues. Connective tissue proper.
7. 01. 04. – 05. 04. 2019 Connective supporting tissues – cartilage and bone. Development of bone tissue (ossification).
8. 08. 04. – 12. 04. 2019 Epithelial tissue. Covering and glandular epithelia. Absorptive, respiratory, and sensory epithelia.

Practice

1. 18. 02. – 22. 02. 2019 Introduction, organization of practicals. Introduction into histological technique. Tissue processing for light and electron microscopy.
2. 25. 02. – 01. 03. 2019 Cytology I. The cell nucleus and cell organelles (mitochondria, Golgi apparatus, endoplasmic reticulum, ribosomes, lysosomes). <u>Aids:</u> Atlas of electron micrographs.
3. 04. 03. – 08. 03. 2019 Cytology II. Ultrastructure of the cell organelles (peroxisomes, centriole). Cell inclusions. Cell surfaces and intercellular junctions. <u>Aids:</u> Atlas of electron micrographs.
4. 11. 03. – 15. 03. 2019 General embryology I. <u>Aids:</u> Set of embryological schemes and pictures (I).
5. 18. 03. – 22. 03. 2019 General embryology II. <u>Aids:</u> Set of embryological schemes and pictures (II).
6. 25. 03. – 29. 03. 2019 General histology. Light microscopy. Basic staining methods in histology (HE, HES, AZAN, impregnation).
7. 01. 04. – 05. 04. 2019 Connective tissue <u>proper</u> . <u>Slides:</u> Funiculus umbilicalis, oesophagus, posterior segment of the eye, lien, aorta.
8. 08. 04. – 12. 04. 2019 Supporting tissue: cartilage and bone. Histogenesis of bone tissue (ossification). <u>Slides:</u> Trachea, auricula, elastic cartilage, lamellar bone, chondrogenic ossification.

9. 15. 04. – 19. 04. 2019 Nervous tissue. Neuron and its processes, classification of neurons. Synapse. Neuroglial cells and sheaths of nerve fibers. Propagation of nerve impulses.	9. 15. 04. – 19. 04. 2019 Covering epithelia. <u>Slides:</u> Ren, vesica fellea, trachea, oesophagus, ureter, palpebra, skin from the finger tip.
10. 22. 04. – 26. 04. 2019 Muscle tissue – smooth muscle tissue, skeletal muscle tissue, and cardiac muscle tissue. Myofibrils and mechanism of muscle contraction.	10. 22. 04. – 26. 04. 2019 Glandular epithelium. <u>Slides:</u> Intestinum tenue, gl. parotis, gl. submandibularis.
11. 29. 04. – 03. 05. 2019 Blood cell morphology: Erythrocytes, leukocytes and thrombocytes. Differential white cell count. Prenatal and postnatal hematopoiesis. Erythropoiesis, granulopoiesis, thrombopoiesis.	11. 29. 04. – 03. 05. 2019 Nervous tissue: neuron, synapses; neuroglia. <u>Slides:</u> Cortex cerebri, cerebellum, medulla spinalis, ganglion spinale, peripheral nerve; motor end plate – demonstration.
12. 06. 05. – 10. 05. 2019 Microscopic anatomy and embryology. Microscopic structure of the heart and blood vessels.	12. 06. 05. – 10. 05. 2019 Muscle tissue. <u>Slides:</u> Apex linguae, intestinum crassum, myokardium. Repetition of tissues.
13. 13. 05. – 17. 05. 2019 Development of the heart, septation of the heart tube. Primitive blood circulation in the embryo. Fetal blood circulation.	13. 13. 05. – 17. 05. 2019 Blood cells: Erythrocytes, leukocytes. Differential White Cell Count (DWCC). Thrombocytes. <u>Slide:</u> A smear of peripheral blood. Development of blood cells (hematopoiesis) - by teacher's presentation.
14. 20. 05. – 24. 05. 2019 dissections	14. 20. 05. – 24. 05. 2019 dissections
15. 27. 05. – 31. 05. 2018 dissections	15. 27. 05. – 31. 05. 2018 dissections
14. 20. 05. – 24. 05. 2019 selected lecture	14. 20. 05. – 24. 05. 2019 Repetition
15. 27. 05. – 31. 05. 2019 selected lecture	15. 27. 05. – 31. 06. 2019 Substitution

Student must prove sufficient level of knowledge by written test examination. The tests are prepared for each practice, and comprise questions from the topics of the last and actual practice.

Each student completes 4 partial tests during semester. Tests are evaluated by point for correct answer. More than half number of correct answers (points) is evaluated as „passed“ (P), failing that the result is signed as „not passed“ (N). 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 from 4 regular tests) or 4 from 5 (ie. 3 P from 4 regular tests and 1 P resit 1 resit).

If student does not fulfill this condition, credit test follows in the relevant exam period. This test covers all topics studied during semester. In case of failure in credit test, credit will not be given and student must enroll the course again.

Conditions for obtaining credit:

- 1. Attendance at all practices (100% participation, all absences must be properly excused in IS and substituted). In IS unexcused absences are the reason for not giving credit. If the excused absence is > 30%, ie 5 exercises / semester (15 weeks), the student must pass credit test.*
- 2. Successful completion of all tests.*
- 3. Submission of all protocols (correctly completed forms of protocols signed by teacher).*

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