

Academic Year 2023/2024
Faculty of Dentistry
ED II. Microscopic Anatomy and Embryology II.

Weeks	Lectures <i>Tuesdays 10.00 - 11.45</i>	Lecturer	Histology laboratory <i>Tuesdays 15.00-16.30</i>
Week 1 09. 4-8.	1. Blood, corpuscular elements of blood. Bone marrow, erythropoiesis, leukopoiesis 2. Cellular components of lymphatic tissue. Thymus, tonsils, MALT	1 Puskár 2 Puskár	Blood Lymphatic system I. – tonsils
Week 2 09. 11-15.	3. Structure and circulation of lymph nodes and spleen 4. Nerve tissue: neurons and glial cells, synapses, receptors and effectors	3 Puskár 4 Vereczki	Lymphatic system II. - thymus, lymph node, spleen
Week 3 09. 18-22.	5. Differentiation of the neural tube. Cranio-caudal and dorso-ventral differentiation. Differentiation of the brain vesicles 6. Formation and derivatives of the neural crest and placode ectoderm	5 Kozsurek 6 Minkó	Nerve tissue, PNS
Week 4 09. 25-29.	7. Microscopy of the CNS – Fine structure of the spinal cord. Spinal reflexes, receptors and effectors 8. Brain tracts, neurotransmitters, neuronal circuits, “connectomics” Structure of the cerebral cortex	7 Gerber 8 Székely	<i>Microscopy of the CNS – consultation I.</i> <i>Spinal reflexes, development of the spinal cord + slides</i>
Week 5 10. 2-6.	9. Central autonomic nervous system. Monoaminergic and cholinergic neurones and pathways. „Ascending Reticular Activating System” (ARAS) 10. Somato- and viscerosensory systems. Sensory pathways	9 Kozsurek 10	Nerve tissue, CNS (slides) Brodmann areas
Week 6 10. 9-13.	11. Functional connectivity of the sensory cortex, thalamus and insula. Somato- and viscerosensory innervation of the head-and neck region (trigeminal system) 12. Neuroanatomy of pain.	11 Shahbazi 12 Gerber	<i>Microscopy of the CNS – consultation II.</i> <i>Sensory pathways</i> <i>Development of the telencephalon</i> <i>+ slides</i>
Week 7 10. 16-20.	13. Neuroanatomy of movements/locomotion I. Somatomotor cortical tracts. Visceromotor system, control of micturition 14. Structure of the cerebellum, cerebellar connections	13 14 Tóth	<i>Microscopy of the CNS – consultation III.</i> <i>Motor systems</i> <i>Structure, connectivity and development of the cerebellum</i>
Week 8 10. 23-27. <i>Oct.23. is a National Holiday</i>	15. Neuroanatomy of movements/locomotion II. Planning /programming of and eliciting movements. Gait control mechanism. The role of cerebellum and basal ganglia 16. External ear, middle ear.	15 16 Székely	Midterm test 1 Blood, lymphatic organs, microscopy of the CNS
Week 9 10. 30. - 11. 3. <i>Nov. 1 is a National Holiday</i>	17. Inner ear. Bony and membranous labyrinth. Development of the organ of hearing. 18. Control of balance / posture together with the movements of the eye and head. Perception of spatial position	17 Tóth 18 Tóth	Organ of hearing and equilibrium (slides) <i>External ocular muscles (revision)</i>
Week 10 11. 6-10.	19. Spiral organ of Corti. Auditory pathway. Neuroanatomy of hearing, understanding and control of speech. 20. Fibrous and vascular coats of the eyeball. Lacrimal gland, lacrimal apparatus.	19 Puskár 20 Barna	Organ of vision I. <i>Innervation of the lacrimal gland</i>
Week 11 11. 13-17.	21. Inner coat of the eyeball, retina. Development of the eye 22. Neuroanatomy of vision. Visual pathway, visual recognition, orientation in space.	21 Lendvai 22 Lendvai	Organ of vision II.
Week 12 11. 20-24.	23. Circadian rythm, sleep/wake cycle; neuroanatomy of resting state and activation. 24. Endocrine system: Hypothalamus, the hypothalamo-hypophysial system, epiphysis	23 Gerber 24 Tóth	Endocrine organs I.
Week 13 11. 27 - 12. 1.	25. Taste sensation and olfaction. Limbic system. 26. Neuroanatomy of energy metabolism, food intake, hedonism and addiction	25 Gallatz 26 Gerber	Midterm test 2 Endocrine organs I. Organs of special senses
Week 14 12. 4-8.	27. Neuroanatomy of emotions, motivation, agression, empathy and behaviour. The reward system. 28. Neuroanatomy of stress, fear, anxiety and depression. Determination, alertedness, personality, consiousness, well-being.	27 28 Gerber	Endocrine organs II Skin as a sensory organ

**List of slides (FOK series)
2023/2024 1st semester**

Weeks	Histology laboratory <i>Tuesdays 15.00-16.30</i>
Week 1 09. 4-8.	Blood 52. Blood smear (MGG) Lymphatic system I. 47. Palatine tonsil (HE) <i>DEM</i> <i>ÁOK 42. Palatine tonsil (T/B cell IHC)</i> 48. Lingual tonsil (HE) <i>ÁOK 48. Pharyngeal tonsil (HE)</i>
Week 2 09. 11-15.	Lymphatic system II. 49. Thymus (HE) 44. Lymph node (HE) 45. Spleen (HE) <i>DEM</i> <i>ÁOK 1.a, b Spleen (T/B cell IHC)</i>
Week 3 09. 18-22.	Histology of the peripheral nervous system 36. Peripheral nerve (cross section, HE) <i>DEM</i> <i>Peripheral nerve (OsO4 impregnation)</i> 37. Pseudounipolar neurones (DRG, HE) <i>6. nerves in the skin(HE)</i> 38. Multipolar neurones (autonomic ggl, AgNO3 impregnation) 43. Motor end plate (striated muscle, ACh esterase histochemistry)
Week 4 09. 25 - 29.	Microscopy of the CNS – consultation I. Spinal reflexes, development of the spinal cord 39. Spinal cord (multipolar neurones, Nissl) & Autonomic ganglia in hollow organs
Week 5 10. 2-6.	Histology of the central nervous system + major Brodmann areas 40. Cerebral cortex (pyramidal neurones, Bielschowsky) 42. Cerebral cortex (pyramidal neurones, Golgi) 94. Hippocampus (HE)
Week 6 10. 9-13.	Microscopy of the CNS – consultation II. Sensory pathways & Development of the telencephalon 99. Mesencephalon (Luxol fast blue + Nissl) 100. medulla oblongata (Luxol fast blue + Nissl)
Week 7 10. 16-20.	Microscopy of the CNS – consultation III. Motor systems & Structure, connectivity and development of the cerebellum 95. Cerebellar cortex (HE) 41. Cerebellar cortex (GFAP ICC)
Week 8 10. 23-27. <i>Oct.23. is a National Holiday</i>	<u>Midterm test 1</u> <i>Blood, lymphatic organs, microscopy of the CNS</i>
Week 9 10. 30. - 11. 3. <i>Nov. 1 is a National Holiday</i>	Histology of the organ of hearing & equilibrium 98. Cochlea (semithin section, toluidine blue) <i>External ocular muscles (revision)</i> Macula (semithin section, toluidine blue) Ear lobe (Verhoeff's stain)
Week 10 11. 6-10.	Histology of the organ of vision I. 96. Eye bulb (HE) 33. Lacrimal gland (HE)
Week 11 11. 13-17.	Histology of the organ of vision II. 97. Retina (semithin section, toluidine blue) 9. Pigment epithelium (unstained)
Week 12 11. 20-24.	Endocrine system I. <i>DEM</i> <i>74. Leydig cells, testicle (HE)</i> 90. Epiphysis/ pineal body (HE) <i>78. Ovarian follicles (HE)</i> 86. Hypophysis/ pituitary gland (HE) <i>79. Corpus luteum (HE)</i> 87. Hypophysis/ pituitary gland (chrom–hematoxyline-phloxin/Gömöri)
Week 13 11. 27 - 12. 1.	<u>Midterm test 2</u> <i>Endocrine organs I. & Organs of special senses</i>
Week 14 12. 4-8.	Endocrine system II. <i>DEM</i> <i>70. Islets of Langerhans, pancreas (HE)</i> 88. Thyroid gland (HE) 89. Parathyroid gland (HE) 92. Adrenal/suprarenal gland (HE) Histology of the skin 6. Palm skin (HE) 11. Scalp/hairy skin (HE)