**T.C.**

**ATILIM UNIVERSITY FACULTY OF MEDICINE**

**EDUCATION IN 2023-2024 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Individual cranial bones neurocranium and viscerocranium (1-hour, Dr. Öktem& Brohi)
2. The whole of the skull (1-hour, Dr. Öktem& Brohi)
3. Central nervous system (1-hour, Dr. Aykanat& Süzer)
4. Spinal cord, Brain stem and cerebellum (1-hour, Dr. Öktem& Brohi)
5. Cranial nerves (1-hour, Dr. Öktem& Brohi)
6. Diencephalon, the basal ganglia (1-hour, Dr. Öktem& Brohi)
7. Cerebral hemispheres (1-hour, Dr. Öktem& Brohi)
8. Tension reflexes (Dr. Dursun)
9. Vessels of the central nervous system, The meninges and sinuses of the brain (1-hour, Dr. Öktem& Brohi)
10. The orbit and its contents and the eyeball (1-hour, Dr. Öktem& Brohi)
11. Visual field, visual acuity and color vision, accommodation and pupil reflex (1-hour, Dr. Dursun)
12. The ear (1-hour, Dr. Öktem& Brohi)
13. Eye and Ear Histology (1-hour, Dr. Aykanat& Süzer)
14. Hearing tests (1-hour, Dr. Dursun)
15. Pathology of CNS (1-hour, Dr. Yurdakan Özyardımcı)

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| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 201** | 18.09.2023 | 26.10.2023 |
| **MED 203** | 30.10.2023 | 05.01.2024 |

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|  | **MED 201** | **MED 202** | **MED 203** | **MED 204** |
| **COMMITTEE EXAM-1** |  |  | 27.11.2023 |  |
| **ANATOMY PRACTICAL EXAM DATE** |  |  | 04.01.2024 |  |
| **COMMITTEE EXAM DATE** |  |  | 05.01.2024 |  |

**MED 203 COMMITTEE**

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| **PHASE II COORDINATOR** | Assoc. Prof. Dr. Hale ÖKTEM |
| **CHAIRMAN OF THE MED 203 COMMITTEE** | Asst. Prof. Dr. Recep Ali BROHİ |
| **MED 203 COMMITTEE DATE RANGE** | 30.10.2023 – 05.01.2023 |
| **ACADEMIC STAFF AT THE MED 203 COMMITTEE** | Prof. Dr. Necla TÜLEK- Medical MicrobiologyProf. Dr. Yekbun AdıgüzelProf. Dr. Nedret KILIÇ- Medical BiochemistryProf. Dr. Gamze YURDAKAN ÖZYARDIMCI- Medical PathologyAssoc. Prof. Dr. Hale ÖKTEM – AnatomyAsst. Prof. Dr. Gökşen ÖZ- PharmacologyAsstt. Prof. Dr. Ali Doğan DURSUN– PhysiologyAsst. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology and EmbryologyAsst. Prof. Dr. Ayşegül Süzer- Histology and EmbryologyAsst. Prof. Dr. Fatma YERLİKAYA ÖZKURT - BiostatisticsAsst. Prof. Dr. Recep Ali BROHİ– Anatomy |
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**ACADEMIC STAFF** | **TEORETHICAL LECTURE TIME** | **PRACTICAL LECTURE TIME** | **INTERACTIVE EDUCATION****TIME** | **TOTAL TIME** |
| **Anatomy** | 47 | 9 | 5 (2 hours flip class, 3 hours TBL) | 61 |
| **Histology and Embryology** | 8 | 2 | - | 10 |
| **Medical Microbiology** | 21 | - | 4 (2+2 hours case based learning) | 25 |
| **Medical Pharmacology** | 13 | - | - | 13 |
| **Medical Biochemistry** | 3 | - | - | 3 |
| **Medical Pathology** | 10 | 1 | - | 11 |
| **Physiology** | 30 | 3 | - | 33 |
| **Biostatistics** | 2 | - | - | 2 |
| **Biophysics** | 9 | - | - | 9 |
| **TOTAL** | 143 | 14 | 9 | 167 |

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| **Office Hour** |  |

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| **CONTENT OF THE MED 203 COMMITTEE**  |
| Central nervous system; spinal cord: general topography and internal structure; the central nervous system: afferent pathways, the central nervous system: efferent pathways; medulla oblongata; pons; mesencephalon; cerebellum; cranial nerves; the sympathetic and parasympathetic nervous system; thalamus; hypothalamus; autonomic nervous system; cranial nerves; vessels of central nervous system; limbic system; ventricles and cerebrospinal fluid; orbit and its contents; eyeball; ear; vestibular system; auditory pathways; visual pathways; clinical anatomy; sectional anatomy of central nervous system; injuries of central nervous system; fine structure and development of central nervous system organs, histology of central nervous system; pathology of central nervous system organs; drugs used in central nervous system pathologies; infectious diseases of central nervous system; physiology of central nervous system; diagnosis and surgical approaches to intracranial hemorrhages; vestibular tests; hearing tests; tumors of central nervous system; biochemistry of hormonal systems |
| **MED 203 COMMITTEE AIM** |
| To understand the structural and biochemical properties of the nervous system and to interpret the functions of the nervous system with the perspective of basic principles of physics; interpret the cells and structures of the nervous system at the microscopic level; to evaluate the physiology of the nervous system and related systems; to be able to distinguish the symptoms, diagnosis and treatment of neurological diseases, to evaluate the effects and use of neurological system targeted drugs with a pharmacology perspective. |
| **MED 203 COMMITTEE LEARNING OBJECTIVES** |
| The students who succeeded in this course;1. Describes the anatomy of structures related to central nervous system and recognizes them on models.
2. Describes the anatomy of cranial bones and recognizes them on models.
3. Explains the anatomy of structures related to sensory organs and recognizes them on models.
4. Describes the functional anatomy of the anatomical structures included to central nervous system
5. Describes the functional anatomy of the anatomical structures included to sensory organs
6. Explains the afferent and efferent pathways and clinical conditions related with their injuries
7. Defines the clinical anatomy of cranial nerves
8. Describes the visual pathways, auditory pathways and vestibular system
9. Explains the central structures related to the nervous system and the functions of these structures, interprets the functional losses
10. Defines the sensory receptors and explains their properties
11. Defines somatic senses, knows the differences, explains the ways of conduction to the central nervous system
12. Explains how motor and sensory functions of the nervous system are performed at the level of the medulla spinalis, brain stem and cortex
13. Explains the interaction between the structures that take part in the formation of voluntary movement and the interaction
14. Explains the centers and cycles that manage vegetative functions.
15. Explains function of the limbic system,
16. Describes the high functions of the nervous system such as conditional reflex, learning and memory by physiological mechanisms
17. Explains the centers and processes that manage cognitive and cognitive functions.
18. Explains the formation, related structures and functions of special senses (sight, hearing, balance, smell, taste), superficial senses and deep senses,
19. Explains the physiological mechanisms of vision and hearing
20. Explains the structures, CSF construction, components and functions that protect the Central Nervous System
21. Explains the structure and functions of the autonomic nervous system.
22. Interpret the physiopathology of neurodegenerative diseases.
23. Explains the high functions of the brain and the neuronal basis of the resulting defects,
24. Defines electroencephalography method, calculates frequency and amplitude.
25. Measures EEG, interprets the results
26. Defines the reflex arc of the deep tendon reflexes, performs a reflex examination and interprets the results
27. Performs a hearing test, revealing the difference between conductive and sensory-neural hearing loss.
28. Defines and measures the field of vision
29. Defines and measures visual acuity
30. Defines and measures the light and accommodation reflex
31. Explains the physiology and interactions between central nervous system, peripheral nervous system and related sensory organs. Students will be able to perform EEG, stretch reflexes, hearing, vision and reflex tests in order to gain the ability to make attempts for patients.
32. Explains the biochemistry of hormonal systems stimulated by brain regions.
33. Recognizes the symptoms and pathological findings of neurological diseases.
34. Explains the analgesic and antipyretic drugs acting on nervous system, related agonists and antagonists, sedative and hypnotic drugs and neuroleptics in detail.
35. Evaluates multiple sclerosis, stroke and Alzheimer’s diseases with a neurological approach.
36. Describes the fine structure of central nervous system organs and structural components of it and the fine structure of eye and ear. Describes the embryological development of these organs.
37. Describes the microscopic characteristics of hypophysis and epiphysis. Knows the embryological development of these organs.
38. Differentiates meningitis from encephalitis
39. Describes the pathophysiology of subacute sclerosing panencephalitis SSPE and progressive multifocal leukoencephalopathy
40. Defines prion disease
41. Explains the features of neuronal injury
42. Describes the pathogenesis of the cerebrovascular diseases
43. Explains morphologic changes & their consequences in CNS trauma
44. Describes congenital malformations of different types; neural tube defects, forebrain malformations, posterior fossa abnormalities
45. Explains perinatal brain injury
46. Describes diseases of myelin
47. Explains neurodegenerative diseases generally
48. Describes pathogenesis & morphologic changes in Alzheimer’s disease
49. Describes pathogenesis & morphologic changes in Frontotemporal Lobar Degeneration
50. Explains pathogenesis & morphologic changes in Parkinson Disease
51. Describes pathogenesis & morphologic changes Huntington Disease
52. Explains pathogenesis & morphologic changes in Spinocerebellar Ataxias
53. Describes pathogenesis & morphologic changes Amyotrophic Lateral Sclerosis
54. Describes & discuss CNS benign & malignant neoplasms
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| **RECOMMENDED BOOKS**1. Lippincott® Illustrated Reviews: Pharmacology 7th Ed. Wolters Kluwer 20192. Braddom's Physical Medicine and Rehabilitation (5th Edition); David X. Cifu MD; Elsevier, Philadelphia, 2016.3. Gray’s Anatomy for Students (3rd Edition); Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell; Churchill Livingston Elsevier, Philadelphia, 2015.4. Guyton and Hall Textbook of Medical Physiology (13th Edition); John E. Hall; Elsevier, Philadelphia, 2016.5. Histology and Cell Biology: An Introduction to Pathology (4th Edition); Abraham L. Kierszenbaum, Laura L. Tres; Elsevier Saunders, Philadelphia, 2015.6. Medical Microbiology (7th Edition); Patrick Murray, Ken Rosenthal, Michael Pfaller; Elsevier Saunders, Philadelphia, 2013.7. Molecular and Cellular Biophysics; Meyer B. Jackson; Cambridge University Press, Cambridge, 2006.8. Rheumatology Textbook (5th Edition); Marc Hochberg, Alan J. Silman, Joseph Smolen, Michael Weinblatt, Michael Weisman; Mosby Elsevier, Philadelphia, 2011.9. Robbins Basic Pathology (10th Edition); Vinay Kumar, Abul K. Abbas, Jon C. Aster; Elsevier Saunders, Philadelphia, 2018. 10. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.11. Textbook of Biochemistry with Clinical Correlations (7th Edition); Thomas M. Devlin; John Wiley & Sons, 201012. Cell and molecular biology (2th edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.13. Molecular cell biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.14. Molecular biology of the cell (6th edition); Bruce Alberts, W. W. Norton & Company,2015.15. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, 2019, McGraw-Hill Education16. Medical Microbiology 8th Edition . Murray . Rosenthal, . Pfaller, ,201617. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 9th Edition, Bennett, JE, Dolin R, Blaser MJ. Elsevier, 201918. Basic Immunology: Functions and Disorders of the Immune System, 5e, Abbas, Lichmann, Pillai, Elsevier, 201619. Gray’s Anatomy. Editor: Susan Standring, 41st Edition, 2015, Elsevier20. Moore Clinically Oriented Anatomy. Authors: Keith L. Moore, Anne M. R. Agur, Arthur F. Dalley. 7th Edition, 2013, Lippincott Williams Wilkins 21. Sobotta Atlas of Human Anatomy. English: Musculoskeletal system, internal organs, head, neck, neuroanatomy by Friedrich Paulsen (Author), Jens Waschke (Author), Sabine Hombach-Klonisch (Translator), Thomas Klonisch (Translator). 15th Edition, 2013, Urban and Fischer, Elsevier22. Atlas of Human Anatomy (Netter Basic Science). Author: Frank H. Netter. 7th Edition, 2019, Elsevier23. Medical Physiology 3rd Edition by Boron MD PhD, Walter F, Boulpaep MD, Emile L. (2017) 24. Physiology 6th Edition by Costanzo PhD, Linda S. (2017)25. Principles of Neural Science, Fifth Edition (Principles of Neural Science (Kandel)) 5th Edition by Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum, A. J. Hudspeth. (2013)26. Bertram G. Katzung, Todd W. Vanderah - Basic & Clinical Pharmacology, 15th Ed., McGraw-Hill Education (2020)27. Rang and Dale’s Pharmacology, Elsevier Ltd, 9th Ed. 202028. Katzung & Trevor’svPharmacologyExamination & Board Review. LANGE medical book 12th Ed. 2019 |
| **MED 203 COMMITTEE EXAM WEEK** |
| **DATE** | **EXAM NAME** | **EXAM HOURS** |
| 27.11.2023 | COMMITTEE EXAM-1 | 09:30-12:20 |
| 04.01.2024 | Anatomy Practical Examination | 13:30-16:20 |
| 05.01.2024 | MED 203 Committee Exam | 09:30-12:20 |
| **Teaching Methods and Techniques** |

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| [x]  Lecture | [x]  Case based learning | [ ] Case discussion | [ ] Student presentation |
| [x]  Discussion | [ ]  Problem based learning | [ ] Project | [ ] Homework |
| [ ] Role playing | [x]  Experiment | [ ] Report prepearing | [x]  Self Learning |
| [x] Laboratory practice | [x]  Team Based Learning | [x] Flipped class |  |

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| **Evaluation Method** | Committee Exam-I (25%), Committee Theoretical Exam- II (55%), Anatomy Practical exam: (12%) ,Flipped Class: (2%), TBL(6%) |
| **Language of lectures, practicals and all other applications** | English |