**T.C.**

**ATILIM UNIVERSITY FACULTY OF MEDICINE**

**EDUCATION IN 2024-2025 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Individual cranial bones neurocranium (1-hour, Dr. Öktem& Brohi)
2. Individual cranial bones viscerocranium (1-hour, Dr. Öktem& Brohi)
3. The whole of the skull (1-hour, Dr. Öktem& Brohi)
4. Central nervous system (1-hour, Dr. Aykanat)
5. Spinal cord (1-hour, Dr. Öktem& Brohi)
6. Brain stem and Cerebellum (1-hour, Dr. Öktem& Brohi)
7. Cranial nerves (1-6) (1-hour, Dr. Öktem& Brohi)
8. Cranial nerves (7-12) (1-hour, Dr. Öktem& Brohi)
9. Diencephalon, hypophysis and the basal ganglia (1-hour, Dr. Öktem& Brohi)
10. Cerebral hemispheres (1-hour, Dr. Öktem& Brohi)
11. Tension reflexes (Dr. Dursun & Dr. Sarıkaya)
12. The meninges and sinuses of the brain (1-hour, Dr. Öktem& Brohi)
13. Electroencephalography (1-Hour, Dr. Dursun& Dr. Sarıkaya)
14. Lab: CNS and peripheral nerve sheats tumors (1-hour Dr.Yurdakan Özyardımcı)
15. The orbit and its contents and the eyeball (1-hour, Dr. Öktem& Brohi)
16. Visual field, visual acuity and color vision, accommodation and pupil reflex (1-hour, Dr. Dursun & Dr. Sarıkaya)
17. The ear (1-hour, Dr. Öktem& Brohi)
18. Eye and Ear Histology (1-hour, Dr. Aykanat)
19. Hearing tests (1-hour, Dr. Dursun & Dr. Sarıkaya)

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| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 203** | 4.11.2024 | 10.01.2025 |

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|  | **MED 201** | **MED 202** | **MED 203** | **MED 204** |
| **ANATOMY PRACTICAL EXAM DATE** |  |  | 10.01.2025 |  |
| **COMMITTEE EXAM-1** |  |  | 02.12.2024 |  |
| **COMMITTEE EXAM**  |  |  | 09.01.2025 |  |

**MED 203 COMMITTEE**

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| **PHASE II COORDINATOR** | Asst. Prof. Dr. Badegül SARIKAYA |
| **CHAIRMAN OF THE MED 203 COMMITTEE** |  Asst. Prof. Dr. Recep Ali BROHİ |
| **MED 203 COMMITTEE DATE RANGE** | 04.11.2024 – 10.01.2024 |
| **ACADEMIC STAFF AT THE MED 203 COMMITTEE** | Prof. Dr. Necla TÜLEK- Medical MicrobiologyAssoc. Prof. Dr. Selma USLUCA- Medical MicrobiologyAssoc. Prof. Dr. Çiğdem Erol- Infectious Disease and Clinical MicrobiologyProf. Dr. Yekbun Adıgüzel-BiophysicsProf. Dr. Nedret KILIÇ- Medical BiochemistryProf. Dr. Gamze YURDAKAN - Medical PathologyAssoc. Prof. Dr. Hale ÖKTEM – AnatomyAsst. Prof. Dr. Recep Ali BROHİ– AnatomyAsst. Prof. Dr. Sami Eren- PharmacologyAsst. Prof. Dr. Badegül SARIKAYA – PhysiologyAssoc. Prof. Dr. Ali Doğan DURSUN – PhysiologyAssoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology and EmbryologyAsst. Prof. Dr. Fatma YERLİKAYA ÖZKURT - Biostatistics |
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**ACADEMIC STAFF** | **TEORETHICAL LECTURE TIME** | **PRACTICAL LECTURE TIME** | **INTERACTIVE EDUCATION****TIME** | **TOTAL TIME** |
| **Anatomy** | 41 | 12 | 4 (2 hours flip class+2 hours discussion) | 57 |
| **Histology and Embryology** | 8 | 2 | - | 10 |
| **Medical Microbiology** | 20 | - | - | 20 |
| **Medical Pharmacology** | 20 | - | - | 20 |
| **Medical Biochemistry** | 3 | - | - | 3 |
| **Medical Pathology** | 9 | 1 | - | 10 |
| **Physiology** | 34 | 4 | - | 37 |
| **Biostatistics** | 2 | - | - | 2 |
| **Biophysics** | 14 | - | - | 14 |
| **PBL** | - | - | 6 | 6 |
| **TOTAL** | 151 | 19 | 10 | 180 |

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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. Evaluates multiple sclerosis, stroke and Alzheimer’s diseases with a neurological approach.
35. 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.
36. Describes the microscopic characteristics of hypophysis and epiphysis. Knows the embryological development of these organs.
37. Differentiates meningitis from encephalitis
38. Describes the pathophysiology of subacute sclerosing panencephalitis SSPE and progressive multifocal leukoencephalopathy
39. Defines prion disease
40. Explains the features of neuronal injury
41. Describes the central nervous system response to hypoxia and ischemia from a pathophysiological perspective.
42. Explain acquired metabolic and toxic disturbances of CNS
43. Describes the pathogenesis of the cerebrovascular diseases
44. Explains morphologic changes & their consequences in CNS trauma
45. Explains perinatal brain injury
46. Describes diseases of myelin
47. Explains neurodegenerative diseases generally
48. Describes & discuss CNS benign & malignant neoplasms
49. Knows, describes and explains the drugs related autonomic nervous system.
50. Knows, describes and explains the drugs related central nervous system (sedatives and hypnotics, antipsychotics, antidepressants, opioid analgesics, anti-seizure drugs, anti-parkinsonian agents, general and local anaesthetics, skeletal muscle relaxants)
51. Describe and discuss CNS neoplasms and peripheral nerve sheath tumors
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| **RECOMMENDED BOOKS**1. Braddom's Physical Medicine and Rehabilitation (5th Edition); David X. Cifu MD; Elsevier, Philadelphia, 2016.
2. Gray’s Anatomy for Students (3rd Edition); Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell; Churchill Livingston Elsevier, Philadelphia, 2015.
3. Guyton and Hall Textbook of Medical Physiology (13th Edition); John E. Hall; Elsevier, Philadelphia, 2016.
4. Histology and Cell Biology: An Introduction to Pathology (4th Edition); Abraham L. Kierszenbaum, Laura L. Tres; Elsevier Saunders, Philadelphia, 2015.
5. Medical Microbiology (7th Edition); Patrick Murray, Ken Rosenthal, Michael Pfaller; Elsevier Saunders, Philadelphia, 2013.
6. Molecular and Cellular Biophysics; Meyer B. Jackson; Cambridge University Press, Cambridge, 2006.
7. Rheumatology Textbook (5th Edition); Marc Hochberg, Alan J. Silman, Joseph Smolen, Michael Weinblatt, Michael Weisman; Mosby Elsevier, Philadelphia, 2011.
8. Robbins Basic Pathology (10th Edition); Vinay Kumar, Abul K. Abbas, Jon C. Aster; Elsevier Saunders, Philadelphia, 2018.
9. Understanding Pathophysiology First canadian Ed. 2018 by Elsevier Inc. Sue Huether; Kelly PowerKean; Mohamed ElHussein.
10. Pathophysiology of Diseases: An introduction in clinical medicine 8 ed. 2019 by McGraw-Hill Education; Lange Inc. Gary D. Hammer, MD, PhD Stephen J. McPhee, MD.
11. Pathophysiology: The biologic basis for diseases in adults and children 8th ed. 2019 by Elsevier Inc. Kathryn L. McCance, MS, PhD Sue E. Huether, MS, PhD Valentına L. Brashers, Neal S. Rote, PhD.
12. Rapid Review Pathology, Fifth Edition 2019 by Elsevier, Inc. Edward F. Goljan, MD.
13. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.
14. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.
15. Textbook of Biochemistry with Clinical Correlations (7th Edition); Thomas M. Devlin; John Wiley & Sons, 2010
16. Cell and molecular biology (2th edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.
17. Molecular cell biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.
18. Molecular biology of the cell (6th edition); Bruce Alberts, W. W. Norton & Company,2015.
19. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, 2019, McGraw-Hill Education
20. Medical Microbiology 8th Edition. Murray . Rosenthal, . Pfaller, ,2016
21. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 9th Edition, Bennett, JE, Dolin R, Blaser MJ. Elsevier, 2019
22. Basic Immunology: Functions and Disorders of the Immune System, 5e, Abbas, Lichmann, Pillai, Elsevier, 2016
23. Gray’s Anatomy. Editor: Susan Standring, 41st Edition, 2015, Elsevier
24. Moore Clinically Oriented Anatomy. Authors: Keith L. Moore, Anne M. R. Agur, Arthur F. Dalley. 7th Edition, 2013, Lippincott Williams Wilkins
25. 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, Elsevier
26. Atlas of Human Anatomy (Netter Basic Science). Author: Frank H. Netter. 7th Edition, 2019, Elsevier
27. Medical Physiology 3rd Edition by Boron MD PhD, Walter F, Boulpaep MD, Emile L. (2017)
28. Physiology 6th Edition by Costanzo PhD, Linda S. (2017)
29. 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)
30. Katzung's Basic and Clinical Pharmacology (Ed. Todd W. Vanderah),16th Edition, McGraw Hill Lange, 2023.
31. Katzung & Trevor's Pharmacology Examination and Board Review (Ed. B.G. Katzung, M. Kruidering-Hall, A.J. Trevor) ,12th Edition, McGraw-Hill Education, 2019.
32. Goodman and Gilman's The Pharmacological Basis of Therapeutics (Eds: L. Brunton,‎ B. Knollmann), 14th Edition, McGraw Hill, 2022.
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| **MED 203 COMMITTEE EXAM WEEK** |
| **DATE** | **EXAM NAME** | **EXAM HOURS** |
| 10.01.2025 | Anatomy Practical Examination | 09:30-12:20 |
| 02.12.2024 | MED 203 Committee Exam-1 | 09:30-12:20 |
| 09.01.2025 | MED 203 Committee Exam-2 | 09:30-12:20 |
| **Teaching Methods and Techniques** |

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

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| **Evaluation Method** | Theoretical exam-1 (30%), Theoretical exam-2 (40%) Anatomy, Practical exam (22%), Problem Based Learning (5%), Flipped Class (2%), Quiz (1% + 1%) |
| **Language of lectures, practicals and all other applications** | English |