T.C.

ATILIM UNIVERSITY FACULTY OF MEDICINE

EDUCATION IN 2025-2026 ACADEMIC YEAR

ACADEMIC CALENDAR

Laboratory Lessons:

1. Neurocranium (1-hour, Dr. Öktem)
2. Viscerocranium (1-hour, Dr. Öktem)
3. The whole of the skull (1-hour, Dr. Öktem)
4. Central nervous system (1-hour, Dr. Aykanat)
5. Spinal cord (1-hour, Dr. Öktem)
6. Brain stem and Cerebellum (1-hour, Dr. Öktem)
7. Cranial nerves (1-6) (1-hour, Dr. Öktem)
8. Cranial nerves (7-12) (1-hour, Dr. Öktem)
9. Diencephalon, hypophysis and the basal ganglia (1-hour, Dr. Öktem)
10. Cerebral hemispheres (1-hour, Dr. Öktem)
11. Tension reflexes (1-hour, Dr. Dursun/Dr. Sarıkaya)
12. The meninges and sinuses of the brain (1-hour, Dr. Öktem)
13. Vessels of the central nervous system (1-hour, Dr. Öktem)
14. The orbit and its contents and the eyeball (1-hour, Dr. Öktem)
15. Visual field, visual acuity and color vision, accommodation and pupil reflex (1-hour, Dr. Dursun/Dr. Sarıkaya)
16. The ear (1-hour, Dr. Öktem)
17. Eye and Ear Histology (1-hour, Dr. Aykanat)
18. Hearing tests (1-hour, Dr. Dursun/Dr. Sarıkaya)
19. Clinicall Skill: IM IV SC Administration Practices(1-hour, Dr. Berikol)

COMMITTEE NAME	STARTING DATE	COMPLETION DATE
MED 203	03.11.2025	09.01.2026

	MED 201	MED 202	MED 203	MED 204
COMMITTEE EXAM-1			01.12.2025	
COMMITTEE EXAM -2			08.01.2026	
CLINICALL SKILL EXAM			08.01.2026	
ANATOMY PRACTICAL EXAM DATE			08.01.2026	

MED 203 COMMITTEE

PHASE II COORDINATOR	Asst. Prof. Dr. Badegül SARIKAYA			
CHAIRMAN OF THE MED 203 COMMITTEE	Asst. Prof. Dr. Hale ÖKTEM			
MED 203 COMMITTEE DATE RANGE	03.11.2025 – 09.01.2026			
ACADEMIC STAFF AT THE MED 203 COMMITTEE	Prof. Dr. Necla TÜLEK- Medical Microbiology Assoc. Prof. Dr. Selma USLUCA- Medical Microbiology Assoc. Prof. Dr. Çiğdem EROL- Infectious Disease and Clinical Microbiology Prof. Dr. Yekbun ADIGÜZEL-Biophysics Prof. Dr. Nedret KILIÇ- Medical Biochemistry Asst. Prof. Dr. Özge BOYACIOĞLU- Medical Biochemistry Prof. Dr. N. Engin AYDIN- Medical Pathology Assoc. Prof. Dr. Hale ÖKTEM – Anatomy Asst. Prof. Dr. Sami EREN- Pharmacology Asst. Prof. Dr. Badegül SARIKAYA – Physiology Assoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology and Embryology Assoc. Prof. Dr. Göksu BOZDERELİ BERİKOL- Biostatistics Assoc. Prof.Dr. Ali Doğan DURSUN-Physiology Dr. Özge Selin ÖZEN SEKMEK- Psychiatry			
ACADEMIC STAFF	**TEORETHICAL LECTURE TIME**	**PRACTICAL LECTURE TIME**	**INTERACTIVE EDUCATION TIME**	**TOTAL TIME**
Anatomy	43	13	4 (2 hours flip class+2 hours discussion)	56
Histology and Embryology	8	2	-	10
Medical Microbiology	21	-	-	21
Pharmacology	16	-	-	16
Medical Biochemistry	3	-	-	3
Medical Pathology	6	-	-	6
Physiology	32	3	-	35
Medical Informatics	2	1(Clinical Skill)	-	3
Biophysics	14	-	-	14
Psychiatry	2	-	-	2
PBL	-	-	6	6
TOTAL				

Advisor Visit	4 Hours

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; vestibular tests; hearing tests; tumors of central nervous system; biochemistry of hormonal systems, neuropharmacology.
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 uses of drugs targeting the neurological system.
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. Describe the general steps of neurotransmitter metabolism, including synthesis, release, receptor binding, and inactivation.
33. Explain the synthesis and degradation pathways of major neurotransmitters, such as acetylcholine, catecholamines (dopamine, norepinephrine, epinephrine), serotonin, and GABA.
34. Discuss the clinical significance of these pathways and how their disruption can lead to neurological disorders.
35. Describe the formation and circulation of cerebrospinal fluid (CSF).
36. Explain the functions of CSF.
37. Summarize the normal biochemical composition of CSF, including typical levels of glucose, protein, and lactate.
38. Interpret changes in CSF biochemistry to help diagnose central nervous system diseases.
39. Recognizes the symptoms and pathological findings of neurological diseases.
40. Evaluates multiple sclerosis, stroke and Alzheimer's diseases with a neurological approach.
41. 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.
42. Describes the microscopic characteristics of hypophysis and epiphysis. Knows the embryological development of these organs.
43. Differentiates meningitis from encephalitis
44. Describes the pathophysiology of subacute sclerosing panencephalitis SSPE and progressive multifocal leukoencephalopathy
45. Defines prion disease
46. Explains the features of neuronal injury
47. Describes the central nervous system response to hypoxia and ischemia from a pathophysiological perspective.
48. Explains acquired metabolic and toxic disturbances of CNS
49. Describes the pathogenesis of the cerebrovascular diseases
50. Explains morphologic changes & their consequences in CNS trauma
51. Explains perinatal brain injury
52. Describes diseases of myelin
53. Explains neurodegenerative diseases generally

54. Describes & discuss CNS benign & malignant neoplasms
55. Knows, describes and explains the drugs related autonomic nervous system.
56. Knows, describes, and explains the pharmacological agents affecting the central nervous system (autonomic nervous system drugs, sedatives and hypnotics, antipsychotics, antidepressants, opioid analgesics, anti-seizure drugs, anti-parkinsonian agents, general and local anaesthetics, skeletal muscle relaxants)
57. Describes and discuss CNS neoplasms and peripheral nerve sheath tumors
58. Explain the fundamental concepts of virtual reality (VR), augmented reality (AR), and mixed reality (MR) and differences between them.
59. Identify and describe the examples of using VR in medical education

RECOMMENDED BOOKS

1. Braddom's Physical Medicine and Rehabilitation (5th Edition); David X. Cifu MD; Elsevier, Philadelphia, 2016.
2. Snell's Clinical Neuroanatomy (8th Edition), Wolters Kluwe, 2019
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. Understanding Pathophysiology First canadian Ed. 2018 by Elsevier Inc. Sue Huether; Kelly PowerKean; Mohamed ElHussein.
11. 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.
12. 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.
13. Rapid Review Pathology, Fifth Edition 2019 by Elsevier, Inc. Edward F. Goljan, MD.
14. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.
15. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.
16. Lehninger Principles of Biochemistry, 8th Edition, David L. Nelson, Michael M. Cox. W.H. Freeman & Company, 2021.
17. Lippincott® Illustrated Reviews: Biochemistry, 9th Edition, North American Edition. Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Dr. Susan M. Viselli, 2025.
18. Peter J. Kennelly, Kathleen M. Botham, Owen McGuinness, Victor W. Rodwell, P. Anthony Weil - Harper's Illustrated Biochemistry-McGraw Hill, 2022.
19. John W. Baynes PhD, Marek H. Dominiczak Dr Hab Med FRCPath (Editor), Medical Biochemistry, 6th Edition, Elsevier, 2022.
20. Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics (Tietz Textbook of Clinical

Chemistry and Molecular Diagnostics) 9th Edition, Nader Rifai PhD (Editor), 2023.
21. Cell and molecular biology (2th edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.
22. Molecular cell biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.
23. Molecular biology of the cell (6th edition); Bruce Alberts, W. W. Norton & Company,2015.
24. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, 2019, McGraw-Hill Education
25. Medical Microbiology 8th Edition. Murray . Rosenthal, . Pfaller, ,2016
26. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 9th Edition, Bennett, JE, Dolin R, Blaser MJ. Elsevier, 2019
27. Basic Immunology: Functions and Disorders of the Immune System, 5e, Abbas, Lichmann, Pillai, Elsevier, 2016
28. Gray's Anatomy. Editor: Susan Standring, 41st Edition, 2015, Elsevier
29. Moore Clinically Oriented Anatomy. Authors: Keith L. Moore, Anne M. R. Agur, Arthur F. Dalley. 7th Edition, 2013, Lippincott Williams Wilkins
30. 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
31. Atlas of Human Anatomy (Netter Basic Science). Author: Frank H. Netter. 7th Edition, 2019, Elsevier
32. Medical Physiology 3rd Edition by Boron MD PhD, Walter F, Boulpaep MD, Emile L. (2017)
33. Physiology 6th Edition by Costanzo PhD, Linda S. (2017)
34. 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)
35. Katzung's Basic and Clinical Pharmacology (Ed. Todd W. Vanderah),16th Edition, McGraw Hill Lange, 2023.
36. Basic and Clinical Pharmacology (Ed. Katzung BG, Masters SB, Trevor AJ), 12th Edition, McGraw Hill Lange, 2012.
37. Goodman and Gilman's The Pharmacological Basis of Therapeutics (Eds: L. Brunton, B. Knollmann), 14th Edition, McGraw Hill, 2022.
38. Goodman & Gillman's The Pharmacological Basis of Therapeutics (Ed. Brunton LL, Hilal-Dandan R, Knollmann BC), 13th Edition, McGraw-Hill Education, 2018.
39. Malik, Reena, Ambuj Sharma, and Prashant Chaudhary, eds. Transforming education with virtual reality. John Wiley & Sons, 2024.

MED 203 COMMITTEE EXAM WEEK

DATE	EXAM NAME	EXAM HOURS
01.12.2025	MED 203 Committee Exam-1	09:30-12:20
08.01.2026	MED 203 Committee Exam-2	09:30-12:20
08.01.2026	Anatomy Practical Examination	13:30-16:20
08.01.2026	Clinicall Skill Exam	13:30-16:20

Teaching Methods and Techniques

☒ Lecture	☐ Case based learning	☐ Case discussion	☐ Student presentation
☒ Discussion	☒ Problem based learning	☐ Project	☐ Homework
☐ Role playing	☐ Experiment	☐ Report prepearing	☒ Self Learning

	☒ Laboratory practice ☐ Team Based Learning ☒ Flipped class ☒ Quiz
Evaluation Method	Theoretical exam-1 (30%), Theoretical exam-2 (40%) Anatomy, Practical Exam (16%), Problem Based Learning (5%), Flipped Class (2%), Clinical Skill Exam (%5) Quiz (Anatomy 1% + Pysiology 1%),
Language of lectures, practicals and all other applications	English