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| **Course title** | **Code** | **Semester** | **Type of course** | **Course volume (Contact hours)** | **ECTS** |
| **Nervous System** | **MED****1006** | **II** | **Mandatory** | **54** | **6** |
| **Faculty, the educational program and level of education** | * School of Medicine and Health Sciences
* Higher Medical Educational Program “Medicine”
* One cycle 6-year
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| **Learning Course Content** |
| * **Embryology** Development of central nervous system. Birth defect of brain. embryonic development of nervous system, spinal cord and formation of spinal nerves.
* **Histology** Microscopic organization of peripheral nerves and ganglions
* **Anatomy** Introduction to nervous system; Spinal cord, formation of spinal nerves. Phlexuses (Cervical, Brachial, Lumbar and Sacral).
* **Physiology** General organisation of nervous system, Sensory receptors and receptor potentials.CSF production and flow
* **Biochemistry** Blood-brain barrier. Transport through blood brain barrier.
* **Medical Biology/Medical Genetics** genetic changeability and modifications.
* **Biophysics** Electrical and Chemical Synapses and Snaptic transmission and Neurotransmitters; Synaptic Transmission and Integration of Post-synaptic Potentials; Biophysical principles of electroencephalogram (EEG); Information in Biological systems;Action Potential of Neurons
* **PBL**
* **Anatomy** Brain Stem (Medulla oblongata, pons and midbrain); Cerebellum. Dienceohalon (thalamus, subthalamus, epithalamus, hypothalamus). Cerbrum: lobes, sulci and gyri. Cerebral cortex and cerebral associating areas.
* Cadaver LAB Nervous system
* **Radiologic Anatomy**
* **Physiology** Somatic Sensations, sense of Touch, Preprioception. Sensation of Pain, Thermoreceptiuon. Ascending pathways, Organization of Cerebral Cortex; Lab: Sense of Touch, two point discrimination test.
* **Biophysics** Ion channels and voltage-clamp method. Brain connectivity and activity visualization.
* **Med. Microbiology** Microbial Genetics and Genetic Engineering.
* **Histology** Histology Lab
* **Anatomy** Meninges of the brain; vessels and nerves; dural venous sinuses; ventricular system of the brain( 2 lateral, 3rd and 4th)
* **Cadaver LAB** Nervous system
* **Radiologic Anatomy**
* **Biochemistry** Fuels of brain,glucose trasnport in brain
* **Clinical Visits** Collection of clinical cases
* **Embryology** Development of peripheral nervous system, clinically oriented problems
* **Anatomy** Ascending tracts of central nervous system Descending tracts of cenral nervous system, extrapyramidal system.
* **Cadaver LAB** Nervous system
* **Physiology** Functions of cerebellum, Basal nuclei, Control of body movements, Balance and gait. Sleep, What is Consciousness? Neurobiology of Consciousness, Limbic system, Autonomic Nervous System and Central Organization of Visceral Functions
* **Clinical Visits** Collection of clinical cases
* **Histology** Histology of the nervous system
* **Anatomy** Introduction to autonomic nervous system and divisions of sympathetic nervous system. Parasympathetic nervous system and its parts.
* **Cadaver LAB** Nervous system
* **Physiology High** cognitive functions (attention, memory, language), Electroencephalography; Lab: Electroencephalography, recording alphs waves, observe "alpha blockage",
* **Biochemistry** Neurotransmitters,general Features of Neurotransmitter Metabolism
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| **Textbooks and Materials** |
| * Anatomy
* Human Anatomy, author: Elaine N. Marieb; Patricia Brady Wilhelm;Jon B. Mallatt
* 8th ed 2017;
* Sobotta Atlas of Human Anatomy.Tables of Muscles, Joints,and NervesEd: F.Paulsen;J.Waschke. Urban & Fischer. 16st. edition; 2018.
* Rad. Anatomy
* Learning Radiology: Recognizing the Basics (With Student Consult Online Access), William Herring. Saunders; 2nd ed. 2011;
* Biochemistry
* Lehninger Principles of Biochemistry- David L. Nelson and Michael M. Cox (sevenths edition 2017)
* Lippincott illustrated reviews:Biochemistry- Ferrier, Denise R. 7th ed.2017
* Cytology
* Abraham L.Kierszenbaum, Laura L.Tres - Histology and Cell Biology, Elsevier Saunders, 2012;
* Embryology
* The Developing Human Clinically Oriented Embryology - Keith Moore L; Persaud T.V.N;Mark G Torchia.. Elsevier Saunders. 11th ed. 2020;
* Microbiology
* 1.Lippincott’s Illustrated Reviews. Richard A.Harvey. “Microbiology”. 4 th.ed. 2020
* 2.Review of Medical Microbiology and Immunology-Levinson, Warren; 17th ed. 2022;
* Biophysics
* Tamar Sanikidze. Biological and Medical Physics V-1/ V-2. 2016
* Molecular Biology/Genetics
* Molecular Biology of the Cell - Bruce Alberts, Alexander Johnson, Julian Levis, Martin Raff Keith. Roberts Peter Walter -, Garland Science Taylor & Francis Group,7th ed. 2022;
* Evidence Based Medicine-EBM
* The Philosophy of Evidence-Based Medicine- Jeremy, Howick. 2011
* Histology
* Junqueira's Basic Histology : Text and Atlas- Anthony L. Mescher .16th Ed. 2021;
* Physiology
* guyton and hall textbook of medical physiology-. John E.Hall, 14th.ed. 2021;
* Neurology
* Adams and Victor's principles of Neurology. Allan H. Ropper;MArtin A.Samuels;Joshua P. Klein
* Lehninger principles of biochemistry, David L.Nelson;Michael M.Cox, Freeman, 2013, MacMillan. Higher education, International edition, VI Edition.
* Mark's basic medical biochemistry: a clinical approach (2012)
* Biochemistry, Lippincott's illustrated Reviews: (2013)
* Medical Microbiology , “Jawetz, Melnick, Adelberg’s”. Geo F. Brooks, Karen C. Carrol, Janet S. Butel, Stephen A. Morse, Timothy A. Mietzner. 26th edition. 2010.
* Physics in Biology and Medicine, Pual Davidovits. Academic Press. Elsevier, 2013
* Problem-Based Physiology 1st Edition Robert G. Carroll (2009)
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