UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Neuroanatomy I

2122-4-H4102D028-H4102D101M

Aims

The objectives of the course are to provide expertise in normal anatomy, embryology of the nervous system. Teaching will include reference to topographic, radiologic, and clinical anatomy. Practical activities using models (also virtual 3D) and clinical case simulations will be used to reach the teaching objectives.

Contents

The goal of the course is to provide a detailed knowledge of anatomy of the nervous system required for a correct physical examination and understanding of the diseases pathogenesis.

Detailed program

Neuroanatomy I (2nd term of 4th year, 30 hours).

Development of the nervous system: neurulation, neural crest formation and differentiation, primary and secondary brain vesicles and their development, formation of midline structures, development of the spinal cord. Neural tube defects and major disorder of brain development.

Introduction to the study of the nervous system: general organization of the central nervous system.

Central nervous system:

1. External and internal structure of spinal cord, brainstem, cerebellum, diencephalon and telencephalon.

2. Brainstem: medulla, pons and mesencephalon; nuclei of cranial nerves and other major nuclei; reticular formation.

3. Tectum mesencephali.

4. Diencephalon: thalamus, hypothalamus, subthalamus, epithalamus

5. Telencephalon: cerebral cortex, cortical areas, localization of functions; basal ganglia.

6. The limbic system.

7. Blood supply of the brain and spinal cord.

8. Ventricular system and cerebrospinal fluid.

9. Coverings of the brain and spinal cord (meninges).

10. The major pathways: spinal and medial lemniscal tracts; spinocerebellar tracts; lateral and medial descending motor systems; cerebellar and basal ganglia motor control; visual, auditory and vestibular system.

Prerequisites

Knowledge acquired during the 1st year in the “Fundamentals of Human morphology” course.

Teaching form

Frontal lessons are given mainly *in Neuroanatomy I course* to reach a comprehensive knowledge of neuroanatomy. Small groups activities will be also assigned to consolidate knowledge. Students will consolidate knowledge through small groups activities solving clinical cases.

Changes to activities, in accordance to future possibile indications by the University, will be promptly communicated.

Textbook and teaching resource

· Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41st Edition, by Susan Standring (Elsevier)

· Snell's Clinical Neuroanatomy, 8th Edition, by Ryan Splittgerber (Lippincott Williams & Wilkins)

· Clinical Neuroanatomy, 29th Edition, by Stephen Waxman (Mc Graw Hill)

· Fitzgerald's Clinical Neuroanatomy and Neuroscience, 7th or (the soon to be released 8th) Edition, by Estomih Mtui, Gregory Gruener, Peter Docker (Elsevier)

Semester

2nd term of 4th year.

Assessment method

Topics presented in Neuroanatomy I course will be verified with an oral examination; thie evaluation will be part of the general assessment of the Neuroscience Track I.

Office hours

Appointments will be given upon contacting by email the teaching staff.