

Name of the Course: RNP-5753-Brain and Mind:
Neuroanatomy, Neurophysiology, Integrated Neurosciences

60h; 4 credits, 3 weeks

Program

OBJECTIVES:

- Studying the cytoarchitecture of the brain cortex, the localization of elevated cortical functions, and the neural basis of the cognitive functions, such as the thought, conscience, memory and intelligence.
- Deepening the knowledge in neuroanatomy and neurosciences, discussing recent data presented in the literature and which complement and deepen the information given in the undergraduate course;
- Discussing modern techniques for the study of the brain activities and behavior.

JUSTIFICATION:

Currently, neurosciences have acquired a prodigious growth, due to the appearance of a new technology for studying the nervous system and the mind. The cultural collection launched in the literature makes us to be constantly recycling the knowledge. This course has the objective of reviewing important concepts in neurosciences, and discussing the most recent information on the study of the brain and the behavior. We will seek to always relate structure and function, not limiting us to a purely descriptive approach of the anatomy of the central nervous system. Besides, an attempt will be made in order to put in debate the neuroanatomic and neuropharmacologic basis of the mental activities.

CONTENT:

Day 1(Monday):

- Morning (from 9am to 11am) Speech: The brain (interactive use of CDROM *Sylvius Neuroanatomy*, CDROOM Inter BRAIN of surface and applied sectional neuroanatomy).
- Afternoon (2pm-4pm)- Practice: Topographic Anatomy of the Brain and Cerebellum.
(4pm-6pm): Seminar: Molecular Aspects of Synaptic Transmission.

Day 2 (Wednesday):

- Morning (from 8am to 12am) Seminar: fMRI Techniques for the Study of Cortical Functions.
- Afternoon (from 2pm to 4pm)- Theory: (CDROM *InterBRAIN*): Neural Hodology:
(4pm-6pm–Practice (LMD): Microscopy of the brain and cerebellum cortex, of the cephalic trunk and spinal column.

Day 3 (Friday):

- Morning (from 9am to 12am) Seminar: Multiple Intelligences.
- Afternoon (from 2pm to 4pm)- Seminar: Memory and Cognition.

Day 4 (Monday):

- Morning (from 8am to 12am) Seminar: Conscience.
- Afternoon (from 2pm to 5pm): – Seminar: Love is More than a just Kiss: A Neurobiological Perspective on Love and Affection (de Boer et al., 2012, review).

Day 5 (Wednesday):

- Morning (from 8am to 12am) – Speech: Reiki Fundamentals.
- Afternoon (from 2pm to 5pm): – Practice (free): Concentration Techniques (YOGA).

Day 6 (Friday):

–Morning (from 8am to 12am) – Speech: Acupuncture and Energy Meridians: Therapeutic Applications in Human Beings and Experimental Approaches in Laboratory Animals.
–Afternoon (from 2pm to 5pm): – Seminar: From the Interaction between the Nervous System and the Immunologic System and the Mental Diseases (literature to be provided).

Day 7 (Monday):

–Morning (from 8am to 12am) Seminar: Instinctive Behavior: Behavior Modulation of Multicellular Animals by Unicellular Organisms (A. Vyas et al, 2007).
–Afternoon (from 2pm to 5pm): –Debate: Theories on Corporal and Extracorporal Mind Organization.

Day 8 (Wednesday):

–Morning (from 8am to 12am) Seminar: Neurofeedback (E.S. Benoiudakis et al., 2016).

Themes for Seminars:

Plasmatic Membrane and Receptors

CLARITY Technique

Use of fMRI for studying Human Functional Neuroanatomy

Use of Tractography by Diffusion Tensor for Studying Human Cephalic Hodology

NOTE Evaluation Criteria:

Participation in classes and seminars;
Dissertation on the theme related to the course;
Practical classes report.