The Hebrew University of Jerusalem

Syllabus

FUNCTIONAL NEUROANATOMY - 51778

Last update 17-11-2016

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: psychology

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Dr. Tal Shany-Ur

Coordinator Email: shany-ur.tal@mail.huji.ac.il

Coordinator Office Hours: Tuesdays and Thursdays by appointment

Teaching Staff:

Dr. Tal Shany-Ur

Course/Module description:

The course familiarizes the students with the structure of the human brain as a basis for understanding principals of its functionality.
In the course we will go over the different functional systems that lay at the foundation of the brain's structure, we will survey the anatomical paths and structures in a clinical and research approach.

Course/Module aims:

Familiarization with the central nervous system in humans, its structure, function, and principals of action.

Learning outcomes - On successful completion of this module, students should be able to:

1. Understand basic principles of brain organization as the basis for human functioning.
2. Identify brain structures in the whole brain and its slices, and assign functions to structures.
3. Be familiar with different methods for studying brain structure and function, with an emphasis on imaging methods (such as MRI, fMRI, DTI) and explain which information could be extracted from each method.
4. Apply the information in order to understand the effect of neurological injuries on one's functioning.

Attendance requirements(%):

80%

Teaching arrangement and method of instruction: Frontal lectures with class participation, exercises for brain structure recognition, clinical case discussion, tests, lab lesson at the dissection class.

Course/Module Content:

- Human brain evolutionary development.
- General survey of the brain structure – functional differentiation, principles of organization and a forward to neuroradiology.
- The motor system – descending pathways and the spinal cord structure.
- The sensory system - sensory modalities, the spinal cord and cranial nerves.

- Feedback systems – Vision, Auditory, Basal Ganglia and Thalamus.
- Control and Modulation systems – The cerebellum, Brain stem and Hypothalamus.
- The limbic system – emotion and memory.
- The cortex and various cognitive systems – attention, language, memory, executive functions, .
- Blood supply to the brain, brain slices orientation.
- The entire brain as an integrated functional unit.

Required Reading:
Blumenfeld, H. (2010). Neuroanatomy Overview and Basic Definitions. In Blumenfeld, H. Neuroanatomy through clinical cases (pp. 14-46). Sunderland, Mass: Sinauer Associates.
Additional selected chapters from this book will be given for each topic.

Nolte, J. (2009). The human brain: an introduction to its functional anatomy. Selected chapters.

Additional Reading Material:
Neuroanatomy: An Atlas of Structures, Sections, and Systems, 7th/8th Edition. Duane E. Haines, PhD
Neuroanatomy an illustrated colour text. 4th edition Crossman, Alan R
Neuroanatomy : Draw It to Know It. Fisch, Adam. Oxford : Oxford Univ. Press. 2009
Clinical Neuroanatomy, 27e. Stephen G. Waxman

Course/Module evaluation:
End of year written/oral examination 80 %
Presentation 0 %
Participation in Tutorials 5 %
Project work 0 %
Assignments 5 %
Reports 0 %
Research project 0 %
Quizzes 10 %
Other 0 %

Additional information: