The Hebrew University of Jerusalem

Syllabus

Biological Basis of Behavior - 51106

Last update 24-10-2023

HU Credits: *4*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Psychology*

Academic year: *0*

Semester: *1st Semester*

Teaching Languages: *Hebrew*

Campus: *Mt. Scopus*

Course/Module Coordinator: *Prof. Ravid Doron*

Coordinator Email: *raviddor@gmail.com*

Coordinator Office Hours: *Sunday 15:30-16:30*

Teaching Staff:

Prof Ravid Doron,
Mr. Robinson Elad,
Mr. Eyal Dinur,
Ms. liat bergman

Course/Module description:

This introductory course will focus on the basic biological processes that underlie behavior and psychological processes. The topics that will be covered in the course include the structure and function of nerve cells, the basic units comprising the brain, and the electrical and chemical communication mechanisms between these cells, which underlie the integrative activity of the brain. The general structure of the brain and its components (neuroanatomy), as well as the effects of neuro-psychiatric drugs and drugs of abuse (neuropharmacology) will be presented. The various research methods used in brain research, including experiments in animals and methods for brain imaging in humans will be discussed. Finally, the basic principles underlying sensory systems, with detailed examples of normal and abnormal functioning of the visual system will be explained.

Course/Module aims:

This course is intended to introduce students to the basic concepts and principles that are necessary for understanding the structure and functioning of the human brain. The knowledge acquired in this course should lay the foundation upon which more advanced courses will build deeper understanding of more complex behavioral processes associated with perception, learning, motivation, emotions and abnormal behavior.

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

• Describe the basic molecular and cellular processes underlying brain activity, and explain how disturbances in these processes lead to impairments in brain functioning.
• Identify the various regions of the central nervous system, and assign to each region the basic function that it is involved in.
• Evaluate the behavioral/psychological effects of specific drugs based on knowledge and regarding the biological mechanism of action of these drugs.
• Identify, describe and compare between various research methods that are most appropriate for investigation of specific normal and pathological processes in the brain, and explain the meaning of the data/information obtained by using the these methods.
• To describe and explain the basic physiological processes at the sense organs (mainly eye) and the mechanisms by which sensations are transmitted to the brain. To identify and diagnose (in very basic terms) specific disturbances in the visual and auditory system based on the symptoms presented by virtual case reports.

Attendance requirements(%):

The students are expected to attend most of the lectures and tutoring hours, although attendance is not checked.

Teaching arrangement and method of instruction: Frontal lectures. Discussions and answers to questions during the tutoring hours

Course/Module Content:

(Parentheses Indicate the relevant chapter of the book)

- *Introduction to psychobiology (1)*
- *Structure and function of cells of the nervous system (2)*
- *Structure of the nervous system (3)*
- *Psychopharmacology (4)*
- *Methods and strategies of research (5)*
- *Vision (6)*

Required Reading:

Carlson, Neil, R.,Birkett, Melissa A. Physiology of Behavior, 12th edition, Pearson, 2017.

Additional Reading Material:

None

Grading Scheme:

Written / Oral / Practical Exam 80 %

Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 20 %

Additional information: