

The Hebrew University of Jerusalem

Syllabus

NEUROBIOLOGY AND BRAIN SCIENCES - 72369

Last update 05-08-2019

HU Credits: 5

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Life Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof Yosef Yarom

Coordinator Email: yarom@vms.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Yosef Yarom,
Prof Idan Segev,
Prof Yifat Prut,
Ms. Inbar Kotzer,
Ms. Mor Mrgolin

Course/Module description:

The course discusses the basic principles of the nervous system activity: cellular basis of nerve cells activity, Neuronal networks, Learning and sensing.

Course/Module aims:

Provide basic understanding of the nervous system activity

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

Critically read and evaluate scientific papers related to brain research

Attendance requirements(%):

None

Teaching arrangement and method of instruction: Lecture and exercise

Course/Module Content:

Structure and function of the cerebellum; Reflexes and VOR, classical conditioning
Introduction to computational neuroscience: simplified models of neurons. Concept neurons and the perceptron. Sustained activity in frontal cortex, recurrent networks, and Hopfield networks. Dopaminergic neurons and reinforcement learning.

Required Reading:

None

Additional Reading Material:

Textbook: Principles of Neuronal Science

Course/Module evaluation:

End of year written/oral examination 85 %
Presentation 0 %

Participation in Tutorials 0 %
Project work 0 %
Assignments 5 %
Reports 10 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
None