האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Cellular and molecular mechanisms of CNS diseases - 94815

Last update 09-02-2021

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Bio-Medical Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: Dr. Ayal Ben-Zvi

Coordinator Email: ayalb@ekmd.huji.ac.il

Coordinator Office Hours:

Teaching Staff:
Prof Oded Behar,
Dr. Ayal Ben-Zvi

Course/Module description:
In this course we will discuses cellular and molecular mechanisms of CNS diseases. We will do so trough reading and analyzing papers from the front of the scientific research community tackling the hottest and most intriguing questions regarding CNS diseases.

Course/Module aims:

Learning outcomes - On successful completion of this module, students should be able to:
The course objectives are to expose the students to the course topics through critical reading and understanding of both research approaches and scientific questions.

Attendance requirements(%):
80

Teaching arrangement and method of instruction:

Course/Module Content:
1. Brain development - cellular composition and diversity of astrocytes as a test case.
2. Brain Cancer - Glioma cells and neuronal activity.
3. Brain injury - Astrocyte activation is it good or bad?
4. ALS - Motor neurons non-autonomous cell death?
5. Blood Brain Barrier - vascular changes prior to motor neuron degeneration in ALS,

6. Microglia - synapse elimination and Alzheimer's,
7. Alzheimer's - neuro-vascular unit cellular and molecular involvement,
8. Neuro-inflalmation/neuroimmunological interplay,
9. Sickness behavior - systemic to brain signaling,
10. Brain glymphatics – brain waste removal?
11. Human pathologies vs. mouse models - 'making a smart mouse'.

Required Reading:
Will be given in the beginning of the course

Additional Reading Material:

Course/Module evaluation:
End of year written/oral examination 70 %
Presentation 0 %
Participation in Tutorials 30 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information: