The Hebrew University of Jerusalem

Syllabus

Selected Topics in Biomedicine - 1105

Last update 26-09-2024

HU Credits: *0*

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

Responsible Department: *Pre-Academic Preparation for Natural and Life Sciences - Advanced*

Academic year: *0*

Semester: *Yearly*

Teaching Languages: *Hebrew*

Campus: *Mt. Scopus*

Course/Module Coordinator: *Prof. Nissim Ben-Arie*

Coordinator Email: *nbenarie@gmail.com*

Coordinator Office Hours: *Thursday 16:00-17:00*

Teaching Staff:
Ms. revital YONAH

Course/Module description:
The BioMedicine course will discuss topics related to the biology of the human body, including cell biology, genetics and inheritance and systems in the human body. An additional cluster will be offered in brain and consciousness.

Course/Module aims:
Exposing students to extensive basic knowledge about the biology of the human body in health and disease.

Enable students to acquire familiarity with the basic principles of biology - with an emphasis on the human body.

Basic introduction to the nervous system and its interface with states of mind and consciousness.

Learning outcomes - On successful completion of this module, students should be able to:
At the end of the course, students will be able to understand basic processes in the biology of the human body, from the level of the single cell, through organs and systems and up to the level of consciousness.

Attendance requirements(%):
Above 80%

Teaching arrangement and method of instruction: Frontal lectures, videos, learning in small groups, student presentations, independent learning, exercises and questions in class.

Course/Module Content:
Central principles in biology

Biological levels of organization

The chemistry of life: Atoms and molecules

Cell Biology

Cellular division

Genetics and heredity

The digestive system

The respiratory system

Additional systems (by independent learning)

Psychobiology cluster:

Introduction to Psychology

The structure of the brain

Central and peripheral nervous system

The structure of nerve cells, supporting cells in the nervous system and communication between cells

The visual system

The auditory system

Abnormal psychology (psychiatric disorders) and their biological basis

Drugs: Mechanisms of action and addiction

Required Reading:
Materials in Moodle

Additional Reading Material:
Watson, J. D., & Crick, F. H. (1953, January). The structure of DNA. In Cold Spring Harbor symposia on quantitative biology (Vol. 18, pp. 123-131). Cold Spring Harbor Laboratory Press.

Gregor Mendel's 1865 paper (translated into English): https://cs.brown.edu/people/rblumber/MendelWeb/archive/Mendel.Experiments.html

Ada Yonath's Noble Lecture: https://www.weizmann.ac.il/csb/faculty_pages/Yonath/Yonath-2010ACIEE-OURS.pdf

Grading Scheme:

Written Exam % 40

Essay / Project / Final Assignment / Home Exam / Referat 15 %

Presentation / Poster Presentation / Lecture/ Seminar / Pro-seminar / Research proposal 15 %

Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 10 %

Mid-terms exams 20 %

Additional information:

Two exams - 20% each

Exercises (HW) - 10%

Quizzes - 20%

Short classroom presentation - 5%

Long classroom presentation - 10%

Paper assignment - 15%