האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Introduction to Cell Biology - 72153

Last update 25-12-2023

HU Credits: 4

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Life Sciences

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr. Tamar Avin-Wittenberg

Coordinator Email: tamar.avin-wittenberg@mail.huji.ac.il

Coordinator Office Hours: By appointment
upon reques

Teaching Staff:
Dr. Tamar Avin Wittenberg,
Dr. Eran Blacher,
Ms. Yarden Dan,
Ms. Yael Kaufman,
Mr. Nir Haritan

Course/Module description:
The course is designed to provide a basic understanding of cell biology and the basic tools used in cell biology research. The course refers to various cell types and organelles, and their role in cellular organization and in the dynamic processes occurring in the cell.

Course/Module aims:
Impart a basic understanding of cell biology and basic tools used in cell biology research.

Learning outcomes - On successful completion of this module, students should be able to:
Describe the cell structure (while comparing prokaryotic and eukaryotic cells and animal and plant cells) and explain the basics of cellular function. Use basic terminology in Life sciences

Attendance requirements(%):
None

Teaching arrangement and method of instruction: Lecture and exercise

Course/Module Content:
Dr. Tamar Avin-Wittenberg -
what is life?, The elements of life, The macromolecules of life: Proteins, The macromolecules of life: Sugars, DNA, fats &lipids, Cell types and cellular organization, methods in cell biology.
Dr. Eran Blacher - Central dogma, The plasma membrane and transmembrane proteins, Transport through the membrane, Cytoskeleton and microtubules, The endomembrane systems, Junctions between cells, Enzymes, Glycolysis, Cellular energy metabolism: Respiration, Apoptosis and cancer

Required Reading:

Selected chapters in the following books:
(1) Purves, B., Orians, G., Heller, C., Sadava, D. (2004) Life. The Science of Biology (7th 9th or 12th ed) Sinauer and Freeman.

(2) Campell, A. N., Reece, J.B., Urry, A.L., Cain, L.M., Wasserman, A.S., Minorsky, V. P., Jacson, B.R. Biology (9th ed or 12th ad, a global approach) Pearson International Edition.

(3) Alberts, Bray, Hopkin, Johnson, Lewis, Raff, Roberts, Walter (2010) Essential Cell Biology (ECB 3rd ed) Garland Science.

Additional Reading Material:
None

Grading Scheme:
Written / Oral / Practical Exam 60 %
Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 40 %

Additional information:
None