The Hebrew University of Jerusalem

Syllabus

BIOCHEMISTRY LAB - 71077

Last update 06-05-2024

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Biochemistry & Food Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Rehovot

Course/Module Coordinator: Dr. Aharon Helman

Coordinator Email: aharon.helman@mail.huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Dr. Ronny Helman,
Ms. Noga Korenfeld,
Mr. nitsan dallal,
Ms. dana Goldberg,
Mr. hadar king,
Ms. saar krell,
Ms. Diana Abuhalaka

Course/Module description:

Biochemistry lab course is done in parallel to the biochemistry course and complements it in terms of experience in practical laboratory methods pertaining to material studied in the classroom

Course/Module aims:

Practical and basic knowledge in biochemical methods - to design and conduct experiments, to describe and analyze the results.

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

At the end of the course the student will be able to:
1. Conduct a biochemical experiment by using a written protocol.
2. Use different methods for separation and quantification of proteins, carbohydrates and lipids.
3. Perform enzymatic reactions - determine the effect of several factors on enzymatic reaction.
4. Write a scientific report including: aims, introduction, materials and methods, results, discussion and conclusions.

Attendance requirements(%):

100

Teaching arrangement and method of instruction: 5 labs

Course/Module Content:

Methods of isolation and identification of proteins
Sumner method as a quantitative determination of % lactose in cheese water
Thin layer chromatography for identification of milk components
Isolation of lipids by Folch method
Determination of total protein by Bradford method

Kinetics of the enzyme trypsin
Effect of enzyme concentration on the rate of reaction
Effect of reaction time on the amount of product received
Effect of pH on the rate of the reaction
Effect of temperature on enzyme stability
Effect of substrate concentration
and various inhibitors on trypsin and chemotrypsin
Effect of substrate concentration
Effect of inhibitors on enzyme activity

Required Reading:
Laboratory booklet
Lehninger Principles of Biochemistry (Hebrew edition 201-2018)

Additional Reading Material:
See laboratory booklet

Grading Scheme:
Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 100 %

Additional information: