האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

CHROMATOGRAPHY OF MICRO AND MACROMOLECULES - 71211

Last update 03-11-2022

HU Credits: *4*

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

Responsible Department: *Plant Sciences in Agriculture -Special in Biotec*

Academic year: *0*

Semester: *1st Semester*

Teaching Languages: *Hebrew*

Campus: *Rehovot*

Course/Module Coordinator: *Zohar Kerem*

Coordinator Email: *zohar.kerem@mail.huji.ac.il*

Coordinator Office Hours: *By e-mail appointment*

Teaching Staff:

Course/Module description:

General knowledge of the theory behind chromatography. Study of methods for separation and analysis of small molecules (e.g., vitamins, lipids) and macromolecules (e.g., proteins), and their practice in wet lab or computer simulations

Course/Module aims:

General knowledge of the theories and applications behind chromatography. Study of methods for separation of small molecules (e.g., vitamins, lipids) and macromolecules (e.g., proteins).

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

Familar with chromatography methods
Plan an experiment using chromatography methods
Use the chromatography methods practiced in the lab
Select the best separation methods for their goals Analyze the results
Solve problems that rise when implementing the methods

Attendance requirements(%):

80% class/100% lab

Teaching arrangement and method of instruction: Frontal classes
Practice laboratory

Course/Module Content:

Principles of chromatography,chromatography of macromolecules: absorption,reverse-phase,ion exchange,gel filtration,affinity. Electrophoresis according to charge,molecular weight,iso-electrofocusing,Western,Northern,Southern blots,identification of molecules,modern spectral methods and their application in liquid and gas chromatography,detectors and principles of identification and quantity determination. Principles in selection of columns for the separation of natural products. Drugs and other small molecules.Separation and identification of molecules using mass spectoscopy and NMR

Required Reading:
Articles

Additional Reading Material:
Articles, Websites

Grading Scheme:

Additional information:
The laboratories will be integrated with the frontal lectures. In some cases a short quiz will be asked for prior to the lab.
The final exams are with open printed materials.
Lab evaluation 15% includes, participation in the labs, being on time, quiz scores, general activity.