

The Hebrew University of Jerusalem

Syllabus

BIOMEMBRANES - 71978

Last update 20-02-2015

<u>HU Credits:</u> 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Horticulture

<u>Academic year:</u> 1

<u>Semester:</u> 1st Semester

Teaching Languages: Hebrew

<u>Campus:</u> Rehovot

Course/Module Coordinator: vainstein

Coordinator Email: vain@agri.huji.ac.il

Coordinator Office Hours: by appointment

Teaching Staff:

Prof Alexander Vainstein Gozal Ben-Hayyim Einat Sadot

Course/Module description:

Studying the various terms related to membranes in plants and animals. The fluid mosaic model of cell membranes' structure. Methods for membrane isolations. Analytical methods for specific membranal parameters such as fluidity, permeability and conductivity. The importance of compartmentalization and target signals for specific compartments within the cell. The involvment of membranes in different cell processes (endocytosis; hormone reactions, etc). The importance of the membrane for bioenergetic processes. Biogenesis and membrane recycling. Interactions of membranes and membrane-containing organelles with the cytoskeleton. The involvement of the membrane in aging and stresses. Model systems and their use.

<u>Course/Module aims:</u> understanding membrane functions

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

research on topics dealing with membranes

Attendance requirements(%):

100

Teaching arrangement and method of instruction: lectures

Course/Module Content:

Studying the various terms related to membranes in plants and animals. The fluid mosaic model of cell membranes' structure. Methods for membrane isolations. Analytical methods for specific membranal parameters such as fluidity, permeability and conductivity. The importance of compartmentalization and target signals for specific compartments within the cell. The involvment of membranes in different cell processes (endocytosis; hormone reactions, etc). The importance of the membrane for bioenergetic processes. Biogenesis and membrane recycling. Interactions of membranes and membrane-containing organelles with the cytoskeleton. The involvement of the membrane in aging and stresses. Model systems and their use. Required Reading:

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Additional Reading Material:

<u>Course/Module evaluation:</u> End of year written/oral examination 100 % Presentation 0 % Participation in Tutorials 0 % Project work 0 % Assignments 0 % Reports 0 % Research project 0 % Quizzes 0 % Other 0 %

Additional information: