האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

INTRODUCTION TO PLANT SCIENCE-PLANT EVOLUTION - 71049

Last update 31-12-2023

HU Credits: *5*

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

Responsible Department: *Plant Science in Agriculture*

Academic year: *0*

Semester: *1st Semester*

Teaching Languages: *Hebrew*

Campus: *Rehovot*

Course/Module Coordinator: *Rivka Elbaum*

Coordinator Email: *rivka.elbaum@mail.huji.ac.il*

Coordinator Office Hours: *by appointment*

Teaching Staff:
Prof Rivka Elbaum,
Dr. Smadar Harpaz-Saad,
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Ms. Anat Idanmolaka,
Mr. ziv shloush,
Mr. aviv nachman,
Mr. Saar Elbar,
Mr. aviv krief

Course/Module description:
The course overviews the botanical world: cyanobacteria, algae, fungi, and land plants.
The evolutionary approach emphasizes the correlation between structure and function in view of the environmental requirements.
Please note: this year we will learn only introductory material about the fungi. dedicated recordings of this topic will be available for self learning.

Course/Module aims:
Introduction to the bio-diversity of the botanical world emphasizing feeding strategies and sexual reproduction

Learning outcomes - On successful completion of this module, students should be able to:
1) identify organisms belonging to the plant world (algae, fungi, plants) and sort them into the various groups according to their feeding methods.
*2) describe the asexual and sexual reproduction of certain algae, fungi *will NOT be taught this year*, and land plants.*
3) describe at least 5 strategies that evolved in land plants to cope with dry environment (as opposed to algae that subsist in the sea).
4)differentiate between the different functional parts of the flower, know their role in sexual reproduction, and assign them to organs of the fruit
5) identify tissues in the seed, and their roles during germination

Attendance requirements(%):
participation in the lab and submission of 4 homework tasks.
To pass the course you must get at least a score of 60 in the final exam.

Teaching arrangement and method of instruction: The study topics will be

introduced in the lessons, then demonstrated in the lab, and finally synthesized by the students during the preparation meetings before the four quizzes that will be conducted during the semester.
Before the weekly laboratory classes the students will have to answer a question in the course web site, in preparation to the lab work.

Course/Module Content:
The biodiversity
Growth, reproduction, and evolution as life characteristics
Life cycles
Feeding in the botanical world
Algae
*Fungi *will NOT be taught this year**
The conquest of land by plants
The mosses, liverworts, and hornworts
The ferns: the vascular system and the appearance of seeds
Gymnosperms
Angiosperms
Evolution of the life cycle of plants
Flowers
Fruits and seed dispersal
Flowers in grasses
Pollination, seed germination

Required Reading:
Biology of Plants
Raven P. H., Evert R. F., Eichhorn S. E.
7th edition, 2005.
W. H. Freeman and Company Publishers

Handbook for Biology of Plants by Dov Koller

Additional Reading Material:
Additional reading will be published weekly in the course web-site

Grading Scheme:
Written / Oral / Practical Exam 56 %
Active Participation / Team Assignment 2 %
Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 8 %
Mid-terms exams 24 %
Personal Guide / Tutor / Team Evaluation 10 %

Additional information:

Success in the course is dependent on attendance in all classes, serious studying for quizzes and active participation in the pre-quiz meetings and on reading the relevant chapters in the recommended book.

To pass the course you must get at least a score of 60 in the final exam.