האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

# *The Hebrew University of Jerusalem*

## *Syllabus*

# *INTRODUCTION TO PLANT SCIENCE-PLANT EVOLUTION - 71049*

*Last update 09-09-2021*

*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,*
*Prof Jaime Kigel,*
*Mr. Saar Elbar,*
*Ms. gabriela haint,*
*Mr. matan azar,*
*Ms. maya eisenstadt,*
*Ms. stav filipoviz,*
*Ms. Sivan Frankin,*
*Ms. Sivan David*

*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.*

*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, 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 quizzes*

*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*
*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*

*Course/Module evaluation:*

*End of year written/oral examination 60 %*
*Presentation 0 %*
*Participation in Tutorials 0 %*
*Project work 5 %*
*Assignments 2 %*
*Reports 13 %*
*Research project 0 %*
*Quizzes 20 %*
*Other 0 %*

*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.*

*Quizzes are compulsory.*
*They will comprise 20% of the final grade only if graded on average higher than your grade in the exam.*