האוניברסיטה העברית בירושלים THE HEBREW UNIVERSITY OF JERUSALEM



## The Hebrew University of Jerusalem

Syllabus

## INTRODUCTION TO PLANT SCIENCE - 72334

Last update 09-08-2018

<u>HU Credits:</u> 5

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Life Sciences

<u>Academic year:</u> 0

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

<u>Teaching Languages:</u> Hebrew

<u>Campus:</u> E. Safra

Course/Module Coordinator: Prof. Oren Ostersetzer-Biran

Coordinator Email: oren.ostersetzer@mail.huji.ac.il

<u>Coordinator Office Hours:</u> Please contact

Teaching Staff:

Prof Joseph Hirschberg Prof Oren Ostersetzer Mr. Gad Weiss Mr. Ms. Mr.

Course/Module description:

The course presents the following topics: Properties of land plants Survey of the plant kingdom Plant development and organs Photosynthesis Life of land plants and its challenges Environmental stress and stress response.

<u>Course/Module aims:</u>

The purpose of the course is to understand plant life at the level of the organism, and at the cellular and the molecular levels. The lectures will introduce anatomical, physiological, molecular, ecological and evolutionary principles.

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

1. Describe and explain plant development in space and time.

2. Describe and classify plant diversity.

*3. Describe and compare different biochemical pathways and analyse physiological responses.* 

4. Analyze and evaluate potentials of plant biotechnology.

<u>Attendance requirements(%):</u> 100% in labs, field tour and exercises

*Teaching arrangement and method of instruction: Class, exercises and laboratory work.* 

Course/Module Content:

- 1. Introduction to plants
- 2. Cells and tissues
- 3. Plant axis

- 4. Apical dominance and hormones
- 5. Photosynthesis light reactions.
- 6. Photosynthesis carbon reactions.
- 7. Primary metabolism.
- 8. Secondary metabolism.
- 9. Water transport.
- 10. Sugar transport.
- 11. Mineral nutrition.
- 12. Sexual reproduction.
- 13. Ecology.
- 14. Humanity & plants, Biotechnology.

<u>Required Reading:</u>

Biology of plants, 4th

eddition. Editors: Raven H.P., Evert R.F. and Eichhorn S.E. Worth Publishers, New York NY. Plant Physiology, Editors: Tiaz L. and Zeiger E. Sinauer Associates, Sunderland MA.

Additional Reading Material: Plant Anatomy, A. Fahn

<u>Course/Module evaluation:</u> End of year written/oral examination 70 % Presentation 0 % Participation in Tutorials 10 % Project work 0 % Assignments 0 % Reports 15 % Research project 0 % Quizzes 5 % Other 0 %

<u>Additional information:</u> see Hebrew site for more info