האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Environmental friendly weed management- principles and application - 71900

Last update 13-10-2021

HU Credits: *2*

Degree/Cycle: *2nd degree (Master)*

Responsible Department: *Field and Vegetable Crops*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *English*

Campus: *Rehovot*

Course/Module Coordinator: *Rivka Elbaum*

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

Coordinator Office Hours: *By appointment*

Teaching Staff:
Dr. Ran Lati

Course/Module description:
We will study the cell wall structure and biosynthesis, and elaborate on cell growth. We will then discuss the differences between primary and secondary cell walls, and examine the wall roles in functional tissues such as wood, fruit, and stem, in the context of field crops. During the course the students will be exposed to a variety of cell wall analitical tools. A tour to the correlative microscopy unit is planned.

Course/Module aims:
The aim of the course is to give students tools for learning the mechanical structure of plants. To do this we will examine the structure of grass straw in its roles as a carrier of the spike and as fodder. Special emphasis will be placed on analytical methods for studying cell walls.

Learning outcomes - On successful completion of this module, students should be able to:
1. Know how to name the wall components, describe the biological way of their production and functions, and explain the difference between different components in the primary and secondary wall
2. Know how to specify at least 3 different roles for the secondary wall, and link them to variations in composition and structure
3. Know how to adapt methods in the analysis of the composition and structure of the wall to a research question
4. Be able to explain why an analytical method was chosen and explain whether there is an alternative and what are the advantages and disadvantages of the alternative

Attendance requirements(%):
compulsory

Teaching arrangement and method of instruction: lectures and exercises

Course/Module Content:
Primary cell wall and cell growth
Secondary cell wall, lignin deposition, structure of wood and water conduction
Mechanical structure of stomata

Plant tissues as an energy source (bio-fuels and fodder)
Leaf minerals function in light perception and defense
Hygroscopic movement in seed dispersal
Fruit ripening / leaf senescence

Required Reading:
will be elaborated along the course

Additional Reading Material:

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 40 %
Assignments 60 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
The course will be given in English if one of the participants does not speak Hebrew