

223.3023, 221.4018
Plant Pathology
Semester A

Time: Thursday, 13:15-16:45, Seminar room, Institute of Evolution, Multi-purpose Building.

Instructor: Prof. Tzion Fahima, **Email:** tfahima@univ.haifa.ac.il.

Office Hours: Thursday, 11:00-12:00, Room 211, Multi-purpose Building, 054-2688300.

Teaching Assistants & Office Hours: Mrs. Liubov Govta – Thursday, 10:00-11:00, Room 211, Multi-purpose Building, **Email:** liubov@evo.haifa.ac.il.

Course Level: BA+MA

Course Type & Format: Elective, Lectures, exercises and a one-day field trip.

Number of Hours/Credits: 4.?

Prerequisites: Introduction to Microbiology.

Course Overview (Short Abstract):

The course examines the interactions between plants and microorganisms pathogenic to plants at the genetic, biochemical and molecular level emphasizing the evolutionary development of host-parasite relations.

Learning Outcomes (What are the skills, abilities, or major concepts a student is expected to acquire in this course?) – At the end of the course students will be acquire knowledge in:

The student will acquire basic knowledge in plant pathology, understand how pathogens attack plants and how plants defend themselves against pathogens. The student will become familiar with the literature in field of plant pathology and will present in class the disease cycle of a selected pathogen of his choice. Furthermore, the students will participate in a field trip to visit farms, meet with farmers, see diseases plants in the field, listen to explanations from experts and policy makers in agriculture and plant protection.

Assessment (Assessment Method and Grade Composition):

Required attendance (70% of classes)

Exam (60%)

Class presentations (40%).

Week-by-Week Content and Assignments:

Week #	Topic	Assignment
1	History of Plant diseases	



2	An introduction to plant pathology	
3	Disease cycles	
4	Life cycles of pathogens	
5	Selected plant pathogens: Biotrophs versus necrotrophs	
6	How pathogens attack plants.	
7	Symptoms and signs in disease development	
8	The effect of pathogens on plant physiological functions	
9	Dissemination of pathogens	
10	Disease resistance genes in cultivated plants and wild populations.	
11	Genetics of plant diseases.	
12	Biological control of plant diseases.	
13	Defense mechanisms of plants against pathogenic microorganisms	
14	Genetic engineering as a tool in plant pathology research and application	

Website: [\[Address\]](#)

Reading List:

1. *Agrios, G.N. 2005. Plant Pathology, 5th ed. Academic Press. 635 pp.
2. Bhale, U., Mishra, M., Kumar, S. and Gupta, O.M. 2015. Laboratory manual on plant pathology. Delhi : Satish Serial Publishing House 163pp
3. Punja, Z. K. 2004. Fungal disease resistance in plants: biochemistry, molecular biology, and genetic engineering. Food Products Press, NY. 266 pp.
4. Melvin, D. B. and Thomma, B. P. H. J. (Eds.) 2012. Plant fungal pathogens: methods and protocols. Humana Press, NY. 648 pp.
5. Lucas, J.A., 1998. Plant Pathology and Plant Pathogens, 3rd Ed. Blackwell Publishing, Oxford, UK. 274 pp.
6. רותם, י., פלטי, י. ובן יפת, י. (עורכים) 2000. מחלות צמחים בישראל. הוצאת המחלקה לפרסומים מדעיים, מרכז וולקני, בית דגן. 533 עמודים.

* Mandatory reading

1.