

## Course Syllabus No. 274251 Spring 2024

Name of the Course: Evolution ,Credit Points 2.0

### Course teaching staff

Course coordinator Ruth Hershberg

Contact Information [ruthersh@technion.ac.il](mailto:ruthersh@technion.ac.il)

Reception times \_\_\_\_\_

Additional lecturers in the course: Sophia Katz ([sophie.katz@gmail.com](mailto:sophie.katz@gmail.com)), Ido Solt ([i\\_solt@rambam.health.gov.il](mailto:i_solt@rambam.health.gov.il)), Ella Preger ([pregere@technion.ac.il](mailto:pregere@technion.ac.il))

### Course structure and times

Lecture Days and Hour: Thursdays 09:00-11:00

Lecture room Green Hall

### Exams

Exam Date Moed A 8.9.2024

Exam Date Moed B 27.9.2024

### Course attendance

Lecture attendance : Attendance in lectures is highly recommended

### pre-course requirements

Prerequisites for the Course: General Genetics 274165, 274243 Molecular Bio.and Regulatory Mechanisms

### Recommended resources for the course:

Overarching goal: Understanding the major evolutionary forces of mutation, selection, and stochastic forces such as genetic drift and learning about their influence on important medical phenomena

Details of the course objectives: The students will know to distinguish between the major evolutionary forces and will understand how they can act separately and in concert to affect patterns of variation and biological phenomena and in particular how they affect medically relevant biological phenomena such as the emergence of pathogens, development and spread of antibiotic resistance and cancer. The students will be exposed to central areas of research in evolutionary biology including the study of genome evolution, experimental evolution and evo-devo (evolution and development).

### The Lecture topics in the course according to the weeks of the semester

Date	Subject of the lecture	Name of lecturer	Chapters and pages in the course textbook
30/5	Introduction to population genetics	Sophia Katz	
6/6	The major evolutionary forces	Sophia Katz	
20/6	The major evolutionary forces (cont.)	Sophia Katz	
1/7 מתכונת יום ה' Thursday format	Genome evolution	Sophia Katz	
4/7	Experimental evolution	Sophia Katz	
11/7	Pathogen evolution	Sophia Katz	
18/7	Evolution of antibiotic resistance	Sophia Katz	
25/7	Cancer evolution	Sophia Katz	
1/8	Evolution and Obstetrics	Ido Solt	
8/8	Evolutionary developmental biology (Evo-devo) 1	Ella Pregger	
15/8	Evo-devo 2	Ella Pregger	

#### **Teaching methods (please leave the relevant)**

Frontal lecture

#### **Assessment tools: (leave the relevant one)**

Final exam

#### **Composition of Course Grade (leave the relevant ones)**

Final exam % grade 100

Exam format will be updated late

**Students must pass the final exam with a grade of 55 in order to receive a passing grade in the course**