

2022-2023

221.4453 – Genomic Mapping
Semester B

Time: Thursday 14:00-16:00, Multipurpose Building room 223

Instructor: Dr. Eyal Privman (eprivman@univ.haifa.ac.il)

Office Hours: appointment by email

Course Level: MA

Course Type & Format: Elective, Lecture

Number of Hours/Credits: 2

Prerequisites: Genetics

Course Overview (Short Abstract): Introduction to genomic mapping, including genetic and statistical aspects. Linkage testing, genetic distances between chromosomal markers, and construction of high density genomic maps. Quantitative trait locus (QTL) mapping. QTL mapping applications in genetics, medicine, breeding, ecology and evolution. Methods for increased efficiency of QTL mapping. Analysis of multiple loci and mapping of multiple traits. Genome-wide association studies (GWAS).

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 able to:

1. Theoretical understanding of genetic mapping methods
2. Application of genetic mapping methods for optimal resolution and accuracy

Assessment (Assessment Method and Grade Composition):

Final exam – 100%

Week-by-Week Content and Assignments:

Week #	Topic	Assignment
1	Overview	
2	Physical mapping	
3	Genetic distances	
4		
5		
6	Ordering markers	



7		
8	QTL mapping	
9		
10		
11	GWAS	
12	eQTL	
13	Hi-C	