

The Hebrew University of Jerusalem

Syllabus

MOLECULAR GENETICS - 71034

Last update 13-08-2018

HU Credits: 3

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Plant Science in Agriculture

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Rehovot

Course/Module Coordinator: Dr. Alon Samach

Coordinator Email: alon.samach@mail.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Alon Samach
Dr. Assaf Mosquna
Mr.
Ms.

Course/Module description:

Studying the information and methods in molecular genetics research, based on the information that students received in the introduction of Genetics and Molecular Biology. Epigenetics, Sex determination, alternative splicing, Genome content, Gene mapping, Reverse and Chemical Genetics.

Course/Module aims:

- Add knowledge and indicate on topics that are unresolved
- Encourage creative thinking
- Exposure to ground-breaking research

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

- Familiar with the basis of the information available methods and recent scientific articles in the field
- Introduce advanced courses in this field

Attendance requirements(%):

100

Teaching arrangement and method of instruction: Lectures, exercises

Course/Module Content:

Genome size
Transposable elements
Telomeres, centromeres satellites and tri-nucleotide repeats
RNA genes
Mitochondrial and Chloroplast genome
Gene structure and RNA editing
Transcription factors
Gene Families
Chromatin Modifications
Alternative splicing
DNA markers and segregation
Mapping human disease- then and now

Mapping mutations in plants
Reverse Genetics Yeast and Mice
Reverse Genetics in plants

Required Reading:

None

Additional Reading Material:

In the moodle site

Course/Module evaluation:

End of year written/oral examination 100 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information:

Electronic submission (by the date required) of at least 8 out of 11 exercises that you receive. Failure to fulfill the obligation - Download 10 points of the final grade.