האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

MOLECULAR BIOLOGY - 72332

Last update 07-04-2020

HU Credits: *5*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Life Sciences*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *E. Safra*

Course/Module Coordinator: *Prof Eran Meshorer*

Coordinator Email: *eran.meshorer@mail.huji.ac.il*

Coordinator Office Hours: *By appointment*

Teaching Staff:

Dr. Oren Ram
Dr. Tamar Avin Wittenberg
Prof Eran Meshorer
Ms.
Mr.
Ms.
Mr.
Ms.

Course/Module description:

The course discusses the structure of macro-molecules and DNA in particular; genome architecture; chromatin structure; functional/structure of the eukaryotic genome; transcription and regulation of transcription in prokaryotes and eukaryotes; transcriptional regulation; The structural basis for DNA recognition by transcription factors; RNA processing; translation; micro-RNAs; transgenic systems; recombinant DNA, and introduction to cellular differentiation. High-throughput methods: next generation sequencing and mass-spectrometry

Course/Module aims:

Acquire tools to analyze problems in molecular biology

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

Students will have acquired the ability to answer key questions in molecular biology

Attendance requirements(%):

Attendance is required in exercises

Teaching arrangement and method of instruction: Lecture and exercise

Course/Module Content:

1. Introduction (DNA, protein nature, Molecular Biology Dogma)

2. Structure of Macromolecules

3. Transcription I

4. Transcription II

5. Translation I

6. Translation II

7. Databases and software

8. RNA processing

9. Alternative splicing & RNA editing

10. RNA stability

11. Regulatory RNAs

12. Complexity

13. Transgenic engineering

Required Reading:
Selected chapters in: Mol Biol Cell, 6TH Ed.

Additional Reading Material:
-

Course/Module evaluation:
End of year written/oral examination 90 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 10 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
**In case an exam will not take place, a passing grade will be given to all students who submitted all five assignments and passed successfully at least four.*