



Syllabus

GENOME DIVERSITY & ANCIENT DNA - 94912

Last update 20-08-2020

HU Credits: 6

Responsible Department: Bio-Medical Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: Prof. Marina Faerman

Coordinator Email: marina.f@mail.huji.ac.il

Coordinator Office Hours: on appointment

Teaching Staff:

Prof Marina Faerman,
Prof Gila Kahila

Course/Module description:

The course includes laboratory experiments performed by the students, lectures and students' seminars. Duration - 2 weeks, 8 hours per day.

Course/Module aims:

To give the students a broad perspective on methods used to explore species' origins and biodiversity at present and in the past

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

- 1. to extract DNA from different sources (mouth swabs, hairs, fingerprints, blood spots and other tissues)*
- 2. to perform PCR amplification targeting a number of genes, mitochondrial and nuclear*
- 3. to analyze DNA sequences using BLAST alignment*
- 4. to draw conclusions regarding the species origin based on comparison to reference sequences from different databases*

Attendance requirements(%):

100

Teaching arrangement and method of instruction: Lectures, students' seminars, laboratory experiments

Course/Module Content:

- 1. Introduction*
- 2. Molecular archaeology of the Holy Land (Prof. C. Greenblatt)*
- 3. Visit to National Natural History Collections of HUJI (Dr. R. Rabinovich)*
- 4. Human genetic history based on DNA polymorphic markers*
- 5. Ancient DNA studies before the genomic era*
- 6. New developments in ancient genomics technologies*
- 7. Hemoglobinopathies in past and present human populations (Dr. D. Filon)*
- 8. Conservation genetics and wildlife in Israel*
- 9. Forensic anthropology (Dr. T. Kahana)*
- 10. Animal forensics*
- 11. Human evolution: fossil and genetic evidence*
- 12. Visit to MAZAP*

Required Reading:

to be given during the course

Additional Reading Material:
to be given during the course

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 30 %
Participation in Tutorials 10 %
Project work 0 %
Assignments 0 %
Reports 60 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
Lab reports to be handed in within 3 weeks of the course completion