האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

GENOME DIVERSITY & ANCIENT DNA - 94912

Last update 20-08-2020

HU Credits: 6

Degree/Cycle: 2nd degree (Master)

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 souces (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