The Hebrew University of Jerusalem

Syllabus

The Fundamentals of Embryonic Development - 94634

Last update 16-09-2021

HU Credits: 3

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Bio-Medical Sciences

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: avihu klar

Coordinator Email: avihu@cc.huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Prof Joel Yisraeli,
Prof Avihu Klar,
Prof Abraham Fainsod,
Prof Zeev Paroush,
Prof Chaya Kalcheim,
Dr. Abed Mansour

Course/Module description:

The processes and biological principles in embryonic development of invertebrates and vertebrates. Fertilization, body axes, gastrulation, tissue organization, patterning, development of the nervous system and the stem cell concept. The course includes lectures and workshops. In the workshop the students and the teachers discuss papers.

Course/Module aims:

To provide students with tools for understanding the biological mechanisms that occur during embryonic development, and how these mechanisms are reprocessed in adults in health and disease. The workshops give students critical thinking about biological processes.

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

To understand basic biological processes in the embryo and the mature organism. Developing critical thinking.

Attendance requirements(%):

Mandatory attendance in workshops

Teaching arrangement and method of instruction: Lectures.
6 workshops. The workshops are conducted in small groups of 10-12 students.

Course/Module Content:

fertilization
Bi-layered embryo
Gastrulation and the formation of three-layered embryo
Mesoderm development
Axis formation in the embryo

Segmentation in invertebrates and vertebrates
The development of the Nervous system in Drosophila
The development of the central and peripheral nervous system in vertebrates
Stem cells

Required Reading:
Gilbert - Developmental Biology

Additional Reading Material:
Six articles available on the website of the course

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

Additional information:
Each workshop will include a short quiz on the article