

The Hebrew University of Jerusalem

Syllabus

The evolution of the animal kingdom - 90106

Last update 17-01-2016

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

<u>Responsible Department:</u> ecology, evolution & behavior

<u>Academic year:</u> 0

Semester: 2nd Semester

<u>Teaching Languages:</u> Hebrew

<u>Campus:</u> E. Safra

Course/Module Coordinator: Prof. Ariel Chipman

Coordinator Email: Ariel.Chipman@huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Ms.

Course/Module description:

The course provides tools for dealing with research questions in evolutionary biology, through a survey of the main stages and events in animal evolution, starting from the a-biotic changes of the Precambrium and to the appearance of modern taxa. The course presents different tool in evolutionary research: Paleontology, comparative anatomy, embryology and molecular biology, and demonstrates how they can be used to understand and reconstruct evolutionary processes. Throughout the historical survey the most suitable tools for addressing each topic will be emphasized. The course includes frontal lectures, exercises and demonstration of relevant paleontological and current material.

Course/Module aims:

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

To identify the main groups in the animal kingdom as fossils and as living organisms

To synthesize information from different sources in order to understand evolutionary processes To follow long term processes in evolution To demonstrate evolutionart processes by comparing different organisms To connect the fossil record to evolutionary processes To generalize from the evolution of specific taxa to global events

<u>Attendance requirements(%):</u> 80

Teaching arrangement and method of instruction: lecture, lab demonstration, exercises

<u>Course/Module Content:</u> Tools and methods in evolutionary biology Life in the Precambrian The Cambrian explosion Bilaterian phyla The Cambrian world The Ordovician and Silurian Land at last / the Devonian Tetrapods / The Carboniferous Amniotes and the attainment of full terrestriality / The Permian The marine Mesozoic The Mesozoic on land The Cenozoic The Pleistocene

<u>Required Reading:</u> none

<u>Additional Reading Material:</u> Dawkins, R. – The ancestor's tale Fortey, R. – Life: an unauthorized biography Kardong, K. – Vertebrates (2nd or 3rd edition) Benton, M. – Vertebrate paleontology Enay, R. – Palaeontology of invertebrates Valentine, J. – On the Origin of Phyla Barton, N.H., Briggs, D.E.G., Eisen, J.A., Goldstein, D.B., Patel, N.H. - Evolution

<u>Course/Module evaluation:</u> End of year written/oral examination 80 % Presentation 0 % Participation in Tutorials 0 % Project work 0 % Assignments 20 % Reports 0 % Research project 0 % Quizzes 0 % Other 0 %

Additional information: