

The Hebrew University of Jerusalem

Syllabus

OROGENIC PROCESSES IN THE AEGEAN ISLANDS - 70722

Last update 20-09-2016

HU Credits: 5

Degree/Cycle: 2nd degree (Master)

Responsible Department: geology

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Dov Avigad

Coordinator Email: dov.avigad@mail.huji.ac.il

Coordinator Office Hours: Sunday 14-16

Teaching Staff:

Prof Dov Avigad

Course/Module description:

The Aegean Sea is a Mediterranean-type back-arc basin formed on the expense of an Alpine orogenic belt that once stretched from Greece to Turkey. The area is renowned for being a natural laboratory where a variety of plate-tectonics processes can be examined. Still floored by an attenuated continental crust the Aegean region has been extended during the last 20 my, and extension is still active there today. The excursion in the Aegean islands will examine extensional tectonic processes and structures that were formed at various crustal levels, from ductile to brittle, as well as extension-related igneous activity and low-angle normal faults. Alongside crustal-scale extensional tectonics, the Aegean islands provide an outstanding opportunity to inspect the bottom of orogenic belts: many of the islands are made of exceptionally well preserved high-pressure low-temperature blueschists and eclogites. We will walk at a depth of ~50 km, examine processes shaping the base of the orogen, and will search for clues to explain how these deep seated rocks emerged to the Earth surface. The excursion will end with subduction-related magmatism at the Santorini Caldera. 10 days, second half of August. Tinos, Syros, Naxos Santorini.

Course/Module aims:

visiting an Alpine orogen which is being overprinted by extensional tectonics.

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

map igneous and metamorphic rocks in an area dominated by Alpine extension, and to identify various rock types.

Attendance requirements(%):

100

Teaching arrangement and method of instruction: lecture prior to excursion, reading assignments, guided excursion in the field.

Course/Module Content:

The excursion in the Aegean islands will examine extensional tectonic processes and structures that were formed at various crustal levels, from ductile to brittle, as well as extension-related igneous activity and low-angle normal faults. Alongside

crustal-scale extensional tectonics, the Aegean islands provide an outstanding opportunity to inspect the bottom of orogenic belts: many of the islands are made of exceptionally well preserved high-pressure low-temperature blueschists and eclogites. We will walk at a depth of ~50 km, examine processes shaping the base of the orogen, and will search for clues to explain how these deep seated rocks emerged to the Earth surface. The excursion will end with subduction-related magmatism at the Santorini Caldera

Required Reading:

on the course site in Moodle

Additional Reading Material:

on the course site in Moodle

Course/Module evaluation:

End of year written/oral examination 80 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 0 %

Reports 20 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information:

*report summarizing reading assignments will be submitted prior to excursion.
Exam on Nxos island.*