

Structural Geology 206-12311

Teacher: Liran Goren, gorenl@bgu.ac.il, Room 233, Building 58

Course structure:

Lectures – 2hr/w

Practicals - 2hr/w

Field excursions – 2 days

Office hours and communications:

At the beginning of the semester the teacher and the T/As will announce on weekly office hours.

Teaching material, assignments, and messages will be posted on the course website as part the Moodle system.

Evaluation:

Weekly assignments - 40% (Mandatory submission of 80% of the assignments)

Field reports – 15%

Final exam – 45%

Passing the course is conditioned by a pass grade in each of the evaluation components independently.

Literature:

1. Structural Geology, Haakon Fossen, Cambridge university Press.
2. Earth Structure, Ben A. van der Pluijm and Stephen Marshak, WW Norton and Company.
3. Lecture notes by Prof. Rick Allmendinger. Will be posted on the course website.
4. Lecture notes by Prof. Jean-Pierre Burg. Will be posted on the course website.

Course topics:

1. Basic and advance concepts and analysis of deformation, strain and stress.
2. Tensorial representation of stress and strain and basic tensorial calculations.
3. Concepts in rheology: elasticity, plasticity, and viscosity.
4. Micro-scale deformation mechanisms.
5. Criteria for brittle deformation. Geometry, kinematics, and dynamics of fractures, veins, and faults.
6. Ductile deformation. Geometry, kinematics, and dynamics of folds.
7. Deformation along shear zones and the effect of pore fluid and temperature.