

Introduction to Minerals and Rocks 206-11031 – 4 credits

Prof. Jiwchar Ganor

Syllabus

Aim of course:

1. Study and recognition of Earth materials, and their genesis.
2. Identification of the main rock-forming minerals.
3. Understanding of the main rock groups which form the Earth.
4. Modes of thinking in the geological sciences.

Topics covered: Introduction, basic definitions, the atom, chemical bonds.

Coordination numbers, Pauling principles, the main mineral groups, non-silicate minerals. Silicate structure part I - nesosilicates, sorosilicates, cyclosilicates and inosilicates. Silicate structure part II - phyllosilicates and tectosilicates. Introduction to the world of rocks. Clastic and chemical sedimentary rocks. Relative geological time. Excursion to Beer Sheva Valley, Makhtesh Gadol. Crystalline rocks I: Magmatic fractionation. Crystalline rocks II; Excursion to Zin Valley and Ramon Valley; Metamorphism; Excursion to metamorphic features in Makhtesh Ramon. Geological Time - Absolute time. Rock cycles, cosmogenesis and formation of Earth.

Course Requirements

2 hr lecture

1 hr tutorial

2 hr lab

2 day excursion

Weekly home reading assignments

Weekly quizzes