

Mineralogy 206-12241 – 3 credits

Dr. Evgeny Vapnik

Syllabus

The polarizing microscope. Refraction of light rays by isotropic and unisotropic media, Birefringence. Use of optical properties to identify uni- and biaxial minerals. Relief, interference colors; elongation, angle of extinction, pleochroism, uniaxial and biaxial interference figures, optical sign and 2V. Identification of the major groups of rock forming minerals using the polarizing microscope - olivine, pyroxenes,, amphibols,, micas, feldspars, quartz and accessory minerals. Crystallographic structure of minerals: Close packing of oxides and sulfides and polyhedral packing of silicates. Energetic stability of minerals; solid solutions, exsolution and order in crystals.

Bibliography

An Introduction to the Methods of Optical Crystallography/ Bloss D. Optical Mineralogy/ Kerr P. F.

Optical Determination of Rock Forming Minerals / Tröger W.E.

An Introduction to Optical Mineralogy/ Nesse W.

Introduction to Mineral Sciences/ Putnis A

Course Requirements

Prerequisite: Introduction to Minerals and Rocks, Geometrical Crystallography, Introduction to Dynamic Geology, Minerals and Rocks in the Field.

The course is mandatory to all department tracks.

It is usually given in the third semester

2 hr lecture

2 hr microscope laboratory

The course includes classes (two hours a week) and microscopic lab (two hours a week). Both must be attended. Also, each week a lab exercise will be given and must be handed in a week later.