

Prerequisite: AG-103**Learning Outcomes**

Students will be able to learn about

- Optical properties of minerals and mineral groups
- Structures of mineral groups
- Chemical composition of mineral groups

Course Content

Optical Mineralogy: Polarized light, double refraction, birefringence, extinction, Introduction to polarizing microscope Microscopic examination of minerals--- Color, pleochroism, absorption, cleavage, R.I. relief, habit, alteration, inclusions, twinning and zoning.

- Systematic Mineralogy: Mineral Classifications, Detailed studies of important members of oxides, sulfides, sulfates, carbonates, halides, tungstoes, phosphates, Silicates and their structural classification.

Lab.

Megascopic and microscopic identification of common rock forming minerals. Use of polarizing microscope. Determination of optical properties of common rock forming minerals.

TEACHING – LEARNING STRATEGIES

- Lecture based examination
- Presentation/seminars
- Class discussion
- Quizzes

ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR

It is continuous assessment. The weightage of Assignments will be 25% before and after midterm assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- short tests, quizzes etc.

ASSESSMENT AND EXAMINATIONS

Sr. No.	Elements	Weightage	Details
1.	Mid Term Assessment	35%	It takes place at the mid-point of the semester
2.	Formative Assessment	25%	It is continuous assessment. It includes: classroom participation, attendance, assignments and presentation, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.

3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.
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Books Recommended

1. Principles of Mineralogy by William, H.B., 1990, Oxford University Press.
2. Mineralogy by Perkins, D., 2002, Prentice Hall
3. Optical Mineralogy by Kerr, P.F., 1959, McGraw Hill.
4. Igneous and Metamorphic Petrology by Best, M.G., 1982, W.H. Freeman & Co.
5. Minerals in Thin Sections by Perkins, D., 200, Prentice Hall.
6. Petrography of Igneous and Metamorphic Rocks by Philpotts, A.R., 1989, Prentice Hall.
7. Atlas of Rock-Forming Minerals in Thin Section by MacKenzie, W.S., Guilford, C.P 1980, John Wiley & Sons.
8. Introduction to Optical Mineralogy by Nesse, W.D., 2003, Oxford University Press.
9. An Atlas of Minerals in Thin Section by Schulze, D.J., 2003,, CD-RM, Oxford University Press.