Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NGLC534	Ore Geology Practical	0	0	2	2

Course Objective

The key objective of the course is to introduce the students with the reflected microscopy, identification of ore minerals, textures, paragenetic order and fluid inclusion characterization with implications on applied aspects.

Learning Outcomes

Upon completion of the course, students will be able to:

- Distinguish between different types of ore minerals based on their physical properties and their mode of occurrences.
- Identification of ore minerals under reflected light microscope and their textural characteristics and paragenesis.
- Possible origin based on the ore mineral associations, mode of occurrences and implications for beneficiation approaches.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Megascopic identification of metallic ore minerals based on the physical characteristics and associated host rock assemblages.	4	This will help in building confidence to identify the different varieties of metallic minerals and associated hosts in the field.
2	Megascopic identification of non-metallic ore minerals based on the physical characteristics and associated host rock assemblages.	4	This will help in building confidence to identify the different varieties of non-metallic minerals in the field.
3	Introduction to Ore Microscopy; Optical properties of ore minerals and identification of important sulfide and complex ore minerals.	6	Learn to handle an ore microscope and identify the sulfide ore minerals based on their optical properties.
4	Optical properties of ore minerals and identification of important oxide and hydroxide ore minerals.	4	Learn to identify the oxide and hydroxide ore minerals and their genetic implications.
5	Identification of textures and micro-structural features of ore mineral assemblages and texture based paragenesis.	4	Identification and recognition of different ore textures and ore gangue relationship and establishment of ore paragenesis.
6	Particle size measurement and applications in the liberation characteristics of complex mineral assemblages for mineral beneficiation and in other areas.	2	Size measurement of minerals grains (ore and gangue mineral phases), assessment of textural complexities and their implications on process mineralogy.
7	Introductory fluid inclusion petrography.	4	Identification of fluid inclusions in doubly polished wafers and fluid inclusion petrography.
	Total	**28**	

Text Books:

1. Craig, J.R and Vaughan, D.J., 1981. Ore Microscopy and Ore petrography. John Wiley &sons.
2. Ramdohr, P. 1980. The ore minerals and their intergrowths, 2nd edn. Oxford, Pergamon press.

Reference Books:

1. Picot, P. and Johon, Z., 1982. Atlas of Ore minerals. B.R.G.M. Publ. Elsevier, Paris.
2. Sharma, N L and Agarwal Y K. Tables for Mineral Identification.