Course Type	Course Code	Name of Course	L	T	P	Credit
DP9	NGLC412	Exploration Geology and Mineral Economics Practical	0	0	2	1

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, geochemical data interpretation and resource estimation.
Learning Outcomes
Upon completion of the course, students will be able to: 4. Distinguish between different types of ore minerals based on their physical properties and their mode of occurrences. 5. Identification of ore minerals under reflected light microscope and their textural characteristics and paragenesis. 6. Understand the different approaches and methods of sampling and resource estimation using different methods.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Megascopic identification of metallic and non-metallic ore minerals based on the physical characteristics and associated host rock assemblages.	3	Identification of mineral and their associate rocks.
2	Identification of important oxide and hydroxide ore minerals, micro textures and micro-structural features of ore mineral assemblages and texture based paragenesis.	5	Learn to identify the oxide and hydroxide ore minerals and their genetic implications.
3	Geological cross section preparation based on drill core data, subsurface structural interpretation, Resource/Reserve estimation using various methods and conditions	4	Learn to calculate the resource and reserve of the different kinds of ore body/deposit using different methods.
4	Geochemical data interpretation, sample value compositing.	2	Basic concepts of geochemical anomaly, sample value compositing for grade estimation.
		14	

Text Books:

3. Reedman, J H. (1979) Techniques in Mineral Exploration: Applied Science Publishers Ltd., UK.
4. Craig, J.R. and Vaughan, D.J. (1981) Ore Microscopy and Ore petrography. John Wiley & sons.
5. Picot, P. and Johon, Z., 1982. Atlas of Ore minerals. B.R.G.M. Publ. Elsevier, Paris.

Reference Books:

1. Marjoribanks, R. (2010). Geological Methods in Mineral Explorationand Mining (2nd edition). Springer-Verlag, 248p.
2. Ramdohr, P. 1980. The ore minerals and their intergrowths, 2nd edn. Oxford, Pergamon press.
3. Sharma, N L and Agarwal Y K. Tables for Mineral Identification.