

M. Sc. GEOLOGY FOURTH SEMESTER

**Paper –II                      Mineral Exploration & Mining Geology                      Code:  
Geol 402**

UNIT – I

Guides for locating ore deposits: structural, lithological, stratigraphic and physiographic guides.

Surface prospecting methods: pitting and trenching; Sub-surface exploration: drilling, different types of drilling, use of diamond drilling in exploration; core-logging and assaying; sampling: various methods of sampling.

UNIT – II

Ore reserves and resources: definition and outline of United Nations International framework classification of mineral reserves and resources; grades and recovery of ores; methods of ore reserve estimations; surface area and cross sectional area methods; recoverable reserves and anticipated life of the deposits.

UNIT – III

Outline of geophysical and geochemical prospecting; role of remote sensing in mineral exploration; explosives: types, storage and precautions in handling of explosives; blasting: various patterns of blast holes and methods of their charging and blasting.

UNIT – IV

Elements of mining: mining methods; various types of surface and underground mining methods; factors involving in selection of open cast and underground mining methods; salient features of bench-mining, shrinkage stopping, sub-level stopping and sub-level top slicing; coal mining methods: room and pillar method, long wall method.

UNIT – V

Outlines of the rules governing conservation, development and utilization of mineral resources; National mineral policy; prospecting license and mining lease; procedures of granting prospecting license and mining lease.

