

4 th Semester	RMN4C001	Mine Development	L-T-P 3-0-0	3 CREDITS
--------------------------	----------	------------------	----------------	-----------

Module-I (8 Hours)

Introduction- Introduction to mining, types of mines and mining, Access to mineral deposits- selection, location, size, shape and types of entry.

Module-II (9 Hours)

Drilling- Methods, types, mechanism and operation, drill bits-types, constructional features and applications, advantages and disadvantages, drilling rigs and jumbos

Module-III (11 Hours)

Explosives- Classifications, compositions, chemical reaction, types, properties and tests, detonators, fuses, blasting devices and accessories, handling and storage, transportation

Module-IV (09 Hours)

Rock Blasting- Mechanism of blasting, blasting pattern and procedure, opencast and underground, controlled blasting, rock cutting

Module-V (07 Hours)

Shaft sinking- Ordinary and special methods, problems and precautions, shaft support and lining.

Books:

- Surface Mining by Dr.G.B.Mishra, Geomintech Publication,Bhubaneswar
- Explosives and Blasting Practices in Mines by S K Das, Lovely Prakashan,Dhanbad
- Explosives and Blasting Techniques by G K Pradhan, MINTECH Publications,Bhubaneswar
- Blasting Manual by Sandhu&Pradhan
- SME HandBook
- Rock Blasting Effects and Operations by P P Ray, Oxford & IBH
- Engineering Rock Blasting Operations by S Bhanari, CRC Press