

Course Type	Course Code	Name of Course	L	T	P	Credit
DP2	MNC 204	Rock Breakage Practical	0	0	2	2

Course Objective

The primary objective of the course is to introduce students to various rock properties for rock excavation system design

Learning Outcomes

Upon completion of the course, students will be able to conduct various experiments to determine the key rock and explosive parameters for designing the drilling, blasting and mechanical excavation systems.

Sl. No.	Major Topics	No. of Practicals	Learning Outcome
1	Sonic velocity in rocks	1	Dynamic elastic constants
2	Field seismic velocity	1	Shallow seismic refraction for subsurface characterization
3	Cerchar hardness index	1	Resistance to indentation, drilling rate estimation
4	Punch penetration index	1	Rock toughness
5	Cerchar abrasivity index	1	Wear of cutting tools
6	Drilling rate index	1	Rock drillability and drill selection
7	Blast vibration measurement	1	Seismic impacts on structures due to blast induced ground and air vibrations
8	VOD measurement	1	Explosive selection and performance estimation
9	Burden velocity measurement	1	Dynamic analysis of moving burden for delay selection and fragmentation/vibration control
10	Blast design and fragmentation analysis software	2	Blast design simulation and fragmentation assessment through image analysis
11	Linear cutting rig tests	1	Specific energy estimation in rock cutting

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