Course Type	Course Code	Name of Course	L	T	P	Credit
DP4	MNC 209	ROCK MECHANICS PRACTICAL	0	0	2	2

Course Objective

The objective of this practical is to enable the learner to understand the determination of different physico-mechanical properties of the intact rocks and soil as per the suggested methods (ISRM, ASTM, BIS etc.) and also provide an overview of their application in ground control, mine excavations and geo-engineering design.

Learning Outcomes

Upon successful completion of this course, students will know determination of various physico-mechanical properties of rocks and soils and correlate their application in ground control, mine excavations and geo-engineering design

Sl. No.	Major Topics	No. of Practicals	Learning Outcome
1	Preparation of rock sample for testing in laboratory	1	Physico-mechanical properties for rock characterization
2	Determination of modulus of elasticity, Poisson's ratio and compressive strength of rock	1	Characterization and classification of rocks in design of structures, Strength and deformability of rocks in unconfined conditions and their relation to mine design
3	Determination of bulk density, specific gravity, porosity and void ratio for a given rock samples.	1	Physical properties for rock for characterization
4	Determination of tensile strength of rock	1	Tensile strength of rocks in unconfined conditions and their relation to mine design;
5	Determination of tri-axial strength of rock	1	Strength and deformability (elastic properties) of rock for design of underground structures such as mine excavations, mine pillars, tunnels etc.
6	Determination of shear strength of rock	1	Shear strength of rocks and rock joints for design of mine excavations and geo-engineering design.
7	Determination of slake durability of rock	1	An index to alteration and relative ranking of rock durability and weatherability of rocks.
8	Determination of Point load Strength Index of rock		Strength index of rock for irregular rock samples; Quick estimation of compressive strength of rock for engineering classification and design
9	Determination of Atterberg's limits of soil	1	Soil consistency, consolidation, compaction and deformation behaviour for designing any structure in soil; Soil classification and characterization
10	Determination of shear strength of soil	1	Shear strength of soil for design of mine slopes and geo-engineering design.
11	Demonstration of in-situ stress measurement using hydraulic fracturing setup	1	In-situ stress measurement for design of structures (mine excavations, tunnels etc.) in rock
12	Demonstration of strata control instrumentation	1	Load, Stress and deformation measurement in rock structures