Course Type	Course Code	Name of Course	L	T	P	Credit
DSC	NMNC102	Mining Technology Laboratory	0	0	2	1

Course Objective

The objective of this practical is to introduce to the learner various major laboratories and acquaint him with the key experimental setups in mining technology domain which are practical intensive. An overview of instrumentation and software systems and their handling will also be introduced for developing a basic understanding.

Learning Outcomes

Upon successful completion of this course, students can:

- understand different mining tech domains, instrumentation systems and software
- correlate their application in mining systems design

Unit No.	Name of the Practical	Lecture Hours	Learning Outcome
Rock Mechanics			
1	To study the major experimental setup-strength/deformation	1	Understanding of modes of failure in rock and different strength measurement techniques and how they correlate with practical applications
2	To study the data acquisition system, sensors and working with strain bridges for measurement of strains	1	Understanding of the working principles of various sensors and their practical applications for mining and geomechanics
Rock Excavation Lab & Blast Dynamic Lab			
3	To study the major experimental setups-drilling and cutting	1	Students will learn the drilling and cutting process
4	To study the data acquisition system, sensors and working with force and displacement sensors	1	Students will be acquainted the sensors usage in rock cutting, specific energy determinations
5	To study the blast design software and blast monitoring instruments	1	Students will be acquainted with various blast design software and monitoring instruments
Mine Surveying and Geomatics Lab			
6	To study the conventional surveying instruments	1	Students will be acquainted with various conventional surveying instruments
7	To study the advanced surveying instruments	1	Students will be acquainted with various advanced surveying instruments
Mine Ventilation Lab			
8	To study the mine ventilation and environmental monitoring instruments	1	Students will be acquainted with various environmental monitoring instruments
9	To study the mine ventilation fans	1	Students will learn various ventilation fans and their application
CAMPAD Lab			

10	To study the mine planning and design software	1	Students will learn various mine planning and design software
11	To study the geotechnical software for the design of underground excavation	1	Students will learn the geotechnical software
12	Projects from the above laboratories	2	Students will take project from specific laboratory and submit the report
Total weeks		**13**	