GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN MINING ENGINEERING

SEMESTER: V

Subject Name: **Mine Electrical Engineering**

Sr. No.	Course Content
1.	**Surface Sub-Station:** 1.1 Transmission lines from power company, their performances, Distribution on surface. 1.2 General surface substation for underground mine/quarries.
2.	**Underground Power Installation:** 2.1 Distribution of power in quarries and mines. 2.2 Underground distribution. 2.3 Sub-station planning.
3.	**Mining Switch Gears:** 3.1 Gate and box. 3.2 Pillar switch. 3.3 Drill panel.
4.	**Mining Cables:** 4.1 Types of cables. 4.2 Construction and applicability, safety features.
5.	**Earthing Practice:** 5.1 Type of earthing used in mines 5.2 Main features, applicability and construction**.**
6.	**Miscellaneous:** 6.1 Flame proof enclosure. 6.2 Intrinsic safety. 6.3 Haulage and shaft signaling. 6.4 Symmetrical faults and circuit breaker equipment, Calculations. 6.5 Principle of thyristors and their application to mines device. 6.6 Load factor, diversity factor, Principle of tariffs as applied to mines.
7.	**Indian Electricity Rules:** 7.1 Terms and definitions. 7.2 Voltage limits, etc.

Laboratory Experiences:

1. Study & Sketch of Surface & U/g substation.
2. Study of different specimens of mining, Cables and sketching their construction.
   i. Study and sketch of Armoured Cables.
   ii. Study and sketch of trailing cables.
3. Study of Gate - End Boxes - electric protective devices - flameproof, features.
4. Study of drill panels and it's various. protective devices and flameproof, features.
5. Study of electric rotary Coal, Drill, it's circuit diagram and safety features.
6. Study of Various Earthing practice used in Mining industries.

Reference Books:

1. U.M.S.
2. Mine Electrical Engg.,Dash
3. Indian Electricity Rules.
4. Mine Electrcal, Nil K Dutta.