

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN MINING ENGINEERING
SEMESTER: V

Subject Name: **Mining Hazards and Safety**

Sr. No.	Course Content
1.	<p>Mine Fires:</p> <p>Spontaneous Heating, Different stages: Determination of proneness of coal by crossing point, Factors governing proneness to spontaneous combustion, Detection of spontaneous heating symptoms, Preventive measures, Including pannel system layout, Adequate ventilation provisions in design stages, Regular inspections etc.</p>
2.	<p>(i) Fires:</p> <p>Underground & quarry fires: Causes of mine fires, Dealing with mine fires, Sealing off, different types of stopping, construction & purposes, Pressure balancing to control air leakage into sealed off fire-areas, Methods of collection of air samples from sealed off fire - areas and from mine atmosphere, Recovery of sealed off mine working on account of fire by reopening.</p> <p>(ii) Dealing With Fires In Quarry:</p> <p>Debris, Coal pillars & coal stocks different types of fire extinguishers safety & statutory aspects.</p>
3.	<p>Mine-Explosions:</p> <p>Fire Damp Explosions:</p> <p>limits of inflammability & various factors influencing the same, Causes of fire damp explosions, Preventive measures.</p> <p>Coal Dust Explosions Causes:</p> <p>Factors affecting inflammability of coal dust, Causes of & preventive measures against coal dust explosions, Various stone dust, Types & efficiency, Stone dusting, Stone dust barriers water barriers & triggered barriers, Organization for stone dust treatment of coal dust, Sampling procedures of roadways mine dusts apparatus & organization, Safety & statutory aspects.</p>
4.	<p>Mine Inundation:</p> <p>Causes of inundation by surface & underground water both in opencast & underground mines.</p> <p>Preventive Measures:</p> <p>Boundary arriers, Panel barriers, Waterdams, Calculation of dam size & construction, Approaching water-logged workings, Precautions, Long - bore- hole patterns by burnside boring apparatus, Safety & statutory aspects.</p>

5.

Mine Rescue & Recovery Work:

Search for survivors & their rescue, clearing dead bodies re-establishing systems connected with immediate rescue operation, What is Rescue & Recovery, Its scope, Rescue organisation at coalfield & mine levels, Rescue stations, Rescue teams, Selection, Initial & refresher trainings, Rescue apparatus self contained portable breathing apparatus, Gasmasks, Smoke helmets, Self rescuers, Reviving apparatus, With actual rescue operations, Fresh air base & surface, Fresh, Air bases, Life lines & communication, Actual operations survival techniques use of bore holes in rescue operations.