

| Discipline: MINING | | Semester: 5th | Name of the Teaching Faculty: Subhranshu Khuntia | |
|--|-----------|--|--|-------------------------|
| Subject: MINING HAZARD & SAFETY | | No of Days/Week Class Allotted: _____ | Semester From date: 15/09/22 To date: 22/12/22 | No. of Weeks: 14 |
| WEEK | Class Day | Theory Topics | | |
| From 15/09/22 to 16/09/22 | 1st | Composition of atmospheric air, mine gases, their properties and physical effects. | | |
| | 2nd | Fire damp, black damp, stink damp, white damp & water damp in mines. | | |
| | 3rd | Flame safety lamp & its working principle | | |
| | 4th | Accumulation test & percentage test. | | |
| | 5th | | | |
| From 19/09/22 to 24/09/22 | 1st | Precaution box gas testing, various parts of flame safety lamp, special features. | | |
| | 2nd | Limitations of flame safety lamp. | | |
| | 3rd | Emission of firedamp in Ulg working | | |
| | 4th | Description of gradual exudation. | | |
| | 5th | | | |
| From 26/09/22 to 01/10/22 | 1st | Description of blower in Ulg working. | | |
| | 2nd | Outburst of firedamp in Ulg working | | |
| | 3rd | Relationship between dominant and inducing factors of outburst. | | |
| | 4th | Fires, Classification of fires & extinguishers used to quench the fires. | | |
| | 5th | | | |

| WEEK | Class Day | Theory Topics |
|---------------------------|-----------|---|
| From 10/10/22 to 15/10/22 | 1st | C.T.C Fire extinguisher, B.C.F Fire extinguisher. |
| | 2nd | Latent Incubation period, preventive measures. |
| | 3rd | Spontaneous heating & its causes and effects. |
| | 4th | Factors affecting spontaneous heating |
| | 5th | |
| From 17/10/22 to 22/10/22 | 1st | Explanation of mine air samples, Thickness of seams, geological disturbances. |
| | 2nd | Preventive measures against spontaneous heating. |
| | 3rd | Symptoms of spontaneous heating in underground mines. |
| | 4th | Explain CO/CO_2 ratio and CO_2/O_2 ratio |
| | 5th | |
| From 24/10/22 to 29/10/22 | 1st | Solved problems based on these ratios. |
| | 2nd | Introduction to mine Explosion |
| | 3rd | Description of coal dust explosion, its causes & prevention. |
| | 4th | Description of Fire damp explosion with their causes & prevention. |
| | 5th | |

| | | | | |
|-------------|--|---------------------------------|--|------------------|
| Discipline: | | Semester: | Name of the Teaching Faculty: | |
| Subject: | | No of Days/Week Class Allotted: | Semester From date: _____ To date: _____ | No. of Weeks: 14 |

| WEEK | Class Day | Theory Topics |
|---------------------------|-----------|---|
| From 01/11/22 to 05/11/22 | 1st | Inflammability of coal dust & fire damp. |
| | 2nd | Explanation of Coward's diagram |
| | 3rd | Lower explosibility limit of fire damp with respect to oxygen. |
| | 4th | Prevention, suppression & Treatment of dust. |
| | 5th | |
| From 07/11/22 to 12/11/22 | 1st | Description of sampling of dust in mines. |
| | 2nd | Stone dust barriers, location of Stone dust barriers. |
| | 3rd | Introduction to mine Inundation. |
| | 4th | State sources of water in mines & its dangers. |
| | 5th | |
| From 14/11/22 to 19/11/22 | 1st | Precaution against inundation. |
| | 2nd | Description of burnside safety boring apparatus. |
| | 3rd | Precaution while approaching water logged Area. |
| | 4th | Describe water dam - Its construction & design (Derivation of formula). |
| | 5th | |

| WEEK | Class Day | Theory Topics |
|---------------------------|-----------|--|
| From 21/11/22 to 26/11/22 | 1st | Discussion of water danger plan. |
| | 2nd | Statutory provision for working near water body. |
| | 3rd | Debate illumination & its units. |
| | 4th | Technical terms in lighting & photometry |
| | 5th | |
| From 28/11/22 to 03/12/22 | 1st | Acetylene portable hand lamp, electric cap lamp |
| | 2nd | Electric discharge lamps & fluorescent tubes for mine lighting. |
| | 3rd | Standards of lighting at different parts of mine regulation. |
| | 4th | Explain the effect of noise & vibration on miners. |
| | 5th | |
| From 05/12/22 to 10/12/22 | 1st | Mine structures & other surface with respect to statutory provision. |
| | 2nd | Various diseases affects human due to Noise & vibration. |
| | 3rd | Introduction to mine rescue & recovery |
| | 4th | self controlled breathing apparatus. |
| | 5th | |

| | | | |
|-------------|---------------------------------------|---|---------------|
| Discipline: | Semester: | Name of the Teaching Faculty: | |
| Subject: | No of Days/Week Class Allotted: _____ | Semester From date: _____ To date _____ | No. of Weeks: |

| WEEK | Class Day | Theory Topics |
|---------------------------|-----------|---|
| From 12/12/22 to 17/12/22 | 1st | Proto-IV apparatus, design, function. |
| | 2nd | Proto-V apparatus, design, function. |
| | 3rd | Drager BG-174 design, function. |
| | 4th | Self rescuer, smoke helmet |
| | 5th | |
| From 19/12/22 to 22/12/22 | 1st | Gas mask workings, uses |
| | 2nd | Construction of rescue brigade |
| | 3rd | Role of rescue brigade on rescue and recovery operations. |
| | 4th | Mine rescue rules 1985 Annexure I. |
| | 5th | |
| | 1st | Mine rescue rules 1985 Annexure II. |
| | 2nd | Mine rescue rules 1985 Annexure III. |
| | 3rd | Sylvester's method, mouth to mouth resuscitation. |
| | 4th | |
| | 5th | |