

SYNERGY POLYTECHNIC, BHUBANESWAR

(DEPARTMENT OF MINING ENGINEERING)

(LESSON PLAN 2025-26, 5th Semester)

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| Discipline: Mining Engr. | Semester: 5 th | Name of the Teaching Faculty: <i>Amaranath Gond</i> |
| Subject: Th-2 MH & S | No of days/per week class allotted: 3 | Semester from Date: to Date: No of weeks: |
| Week | Class/ Day | Theory/ Practical Topics |
| 1 st | 1 st | Discuss composition of atmospheric air. Different mine gases, their properties and physical effects. |
| | 2 nd | -do- |
| | 3 rd | Explain different type of damp i.e. fire damp, black damp, stink damp, white damp and after damp in mines. |
| 2 nd | 1 st | -do- |
| | 2 nd | Describe flame safety lamp & it's working principle. |
| | 3 rd | Explain gas testing by flame safety lamp by accumulation test & percentage test. |
| 3 rd | 1 st | State precaution for gas testing. Describe various parts of flame safety lamp, special features |
| | 2 nd | -do- |
| | 3 rd | State limitations of flame safety lamp. |
| 4 th | 1 st | Describe gradual exudation, blower & outbursts of firedamp in U/g workings. |
| | 2 nd | -do- |
| | 3 rd | -do- |
| 5 th | 1 st | Define fires & spontaneous heating and Incubation Period. |
| | 2 nd | Define spontaneous heating and its causes and effects. |
| | 3 rd | State preventive measures against spontaneous heating. Explain CO/O ₂ ratio & CO ₂ /O ₂ ratio. |
| 6 th | 1 st | -do- |
| | 2 nd | -do- |
| | 3 rd | Describe coal dust explosion & fire damp explosion with their causes & prevention. |
| 7 th | 1 st | State inflammability of coal dust & fire damp. Explain Coward's diagram. |
| | 2 nd | -do- |
| | 3 rd | -do- |

Ang 11/07/25

Sign of Faculty

ABen
11/07/25
Head of Dept.

Shah
11/07/25
Principal

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(LESSON PLAN 2025-26, 5th Semester)

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| Discipline: Mining Engr. | Semester: 5 th | Name of the Teaching Faculty: Amarnath Goud |
| Subject: Th-2 MH & S | No of days/per week class allotted: | Semester from Date: to Date: No of weeks: |
| Week | Class/ Day | Theory/ Practical Topics |
| 8 th | 1 st | Discuss prevention, suppression & treatment of dust. |
| | 2 nd | Describe sampling of dust in Mines. Stone dust barrier. |
| | 3 rd | -do- |
| 9 th | 1 st | State sources of water in mines & its danger. |
| | 2 nd | State precaution against inundation. |
| | 3 rd | Describe burnside safety boring apparatus. State precaution while approaching water logged area. |
| 10 th | 1 st | Describe water dams- its construction & design. Explain water danger plan |
| | 2 nd | Discuss Standards of lighting at different parts of mine as per mine regulation. Define illumination and its units. |
| | 3 rd | -do- |
| 11 th | 1 st | -do- |
| | 2 nd | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
| | 3 rd | -do- |
| 12 th | 1 st | -do- |
| | 2 nd | Discuss different type of Proto-IV, Proto-V, Drager BG-174, Self rescuer, Smoke helmet, Gas mask |
| | 3 rd | -do- |
| 13 th | 1 st | -do- |
| | 2 nd | Construction of Rescue brigade and their role in rescue and recovery operation |
| | 3 rd | -do- |
| 14 th | 1 st | Discuss Mine Rescue rules 1985 Annexure I,II,III. |
| | 2 nd | -do- |
| | 3 rd | -do- |

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Pradhan
11/7/25
Principal