| Course Type | Course Code | Name of Course | L | T | P | Credit |
|---|---|---|---|---|---|---|
| DP9 | MNC 306 | MINE DATA ANALYTICS LAB. | 0 | 0 | 2 | 2 |

| Course Objective |
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| To develop soft computation skills applicable for mining industry |

| Learning Outcomes |
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| The students will be given exposure to the use of advanced numerical methods in handling big data in mining operation and management. The large data generated and or collected in various mining systems will be patterned to use for decision making process using the advancement of machine learning, artificial intelligence and various statistical regression techniques. Hands on training on using different tools will add skills to the students. |

| Sl No | Topic | Contact Hour | Learning Outcome |
|---|---|---|---|
| 1 | Simulation – Part I | 1 | Use of Artificial Simulation Technique for any repetitive operation |
| 2 | Simulation – Part II | 1 | Use of Artificial Simulation Technique for any repetitive operation |
| 3 | Mine Simulation | 1 | Use of Various Mine Production Scheduling Program and Management |
| 4 | Mini Project | 1 | Mini Project Using AI Simulation |
| 5 | Mine Transport Simulation | 1 | Use of automated haulage system and performance appraisal |
| 6 | Introduction to R | 1 | Installation and basics of R |
| 7 | Modelling Using R – Part I | 1 | Hands on Practice on R |
| 8 | Mini Project | 1 | Mini Project Using R |
| 9 | Modelling Using R – Part II | 1 | Use case study data and Process for decision making |
| 10 | Introduction to Python | 1 | Installation and Basics of Python |
| 11 | Modelling using Python – Part I | 1 | Hands on Practice on Python |
| 12 | Modelling with Python – Part II | 1 | Use case study data and Process for decision making |
| 13 | Mini Project | 1 | Mini Project Using Python |