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PMN8J001

Computer Application in Mines

Module-I:

Introduction to structure terminology and peripherals, algorithms, flow charts, programs, dedicated systems; Application in Mining: Exploration, rock topographic models, bore hole compositing, compositing, ore reserve calculation, interpolation and geo-statistical models

Module-II:

Open pit design: Ultimate pit design, introductory process control, underground mine design: Production scheduling; Operation Simulation: Introduction, Simulation overview, objective, understand the role of modeling, Understanding the basic concept in simulation

Module-III:

Example of simulation in mining aspects: Simulation of machine repair problems, Concepts of variability and prediction, Example with dumping time problem, fitting distribution with chi-square test; Random number generation: Methods of random number generation, Properties of random number, pseudorandom number; Random variates generation: Methods of random variates generation, inverse transformed method, acceptance rejection method, composition method, empirical method and rectangular approximation

Module-IV:

Simulation languages: GPSS, SLAM; Logical flow diagram of different mining activities, Coding with GPSS and SLAM of different mining problems; Computer Control: Remote control, automatic control, application and limitations of control