

# AMMS13 COMPUTER APPLICATION IN MINING

## UNIT-1 INTRODUCTION

- 1.1 Structure terminology and peripherals, algorithms,
- 1.2 Flow charts, programs, dedicated systems.
- 1.3 Application in mining.

## UNIT-2 EXPLORATION

- 2.1 Rocket topographic models, bore hole compositing, ore reserve calculation,
- 2.2 Interpolation, geostatical models, open pit design, ultimate pit design,
- 2.3 Introductory process control, underground mine design.

## UNIT-3 PRODUCTION SCHEDULING

- 3.1 Operational simulation: Introduction, simulation overview, objective, understand the role of modeling.
- 3.2 Understanding the basic concept in simulation, example of simulation in mining aspects, simulation of machine repair problem.

## UNIT-4 CONCEPT OF VARIABILITY AND PREDICTION

- 4.1 Example with dumping time problem, fitting distribution with chi-square test,
- 4.2 Random number generation, properties of random number,
- 4.3 Pseudorandom number, random variants generation.

## UNIT-5 METHODS OF RANDOM VARIANTS GENERATION

- 5.1 Inverse transform method, acceptance rejection method,
- 5.2 Composition method, empirical method and rectangular approximation.

## UNIT-6 SIMULATION LANGUAGES

- 6.1 GPSS and SLAM, logical flow diagram of different milling activities, coding with GPSS and SLAM of different mining problems.
- 6.2 Computer control, remote control, automatic, applications and limitations of control

### Reference Books:

1. R.V. Ramani, application of computer methods in the mineral industry.
2. T.C.Bartee, digital computer fundamental, Mc Graw Hill, 4th edition 1984.
3. P.Malvino and D.P.leach digital principals and applications Mc Graw Hill 5th edition 1994.