



# MINING MACHINERY

**PROF. KHANINDRA PATHAK**

Department of Mining Engineering  
IIT Kharagpur

**TYPE OF COURSE** : Rerun | Core | UG

**COURSE DURATION** : 12 Weeks (24 Jan' 22 - 15 Apr' 22)

**EXAM DATE** : 24 Apr 2022

**PRE-REQUISITES** : Engineering Mechanics, Mechanics of Solids, Introduction to Electrical Engineering

**INTENDED AUDIENCE** : Undergraduate students of Mining Engineering

**INDUSTRIES APPLICABLE TO** : CIL, HCL, NALCO, SAIL, NTPC, NLCIL, HZL, Essel Mining, JSW, BEML, HEC, L&T

**COURSE OUTLINE :**

Mining Machinery is a core course for undergraduate program in Mining Engineering. This course deals with the basic construction, operation and maintenance aspects of machines used in mining and quarrying industry so that a graduate mining engineer can select the right equipment for specific job under defined geo-mining conditions and provide feed-back for design, application and upkeep of the machines.

**ABOUT INSTRUCTOR :**

Prof. Khanindra Pathak did B. Tech in Mining Machinery and M.Tech in Surface Mining from IITISM, Dhanbad, PhD in Mining Engineering from Imperial College of Science Technology Medicine, London (Commonwealth Fellowship). He is a Professor of Department of Mining Engineering, Ex-Director of Coal India Limited, Ex-HoD of Mining Engineering Department of IIT Kharagpur and University of Technology, Lae, Papua New Guinea. Chairman, Eastern Regional Committee of AICTE, Kolkata, Chairman, Board Governors TEQIP-III Dibrugarh University Institute of Engineering and Technology, Dibrugarh.

**COURSE PLAN :**

**Week 1:** Introduction to Mining Machinery; Fundamentals of Machinery

**Week 2:** Fundamentals of Machinery (Cont'd)

**Week 3:** Wire Ropes; Site and Rock Preparation Equipment

**Week 4:** Site and Rock Preparation Equipment (Cont'd); Surface Mining Machinery

**Week 5:** Surface Mining Machinery (Cont'd)

**Week 6:** Surface Mining Machinery (Cont'd); Underground Mining Machinery

**Week 7:** Underground Mining Machinery (Cont'd)

**Week 8:** Underground Mining Machinery (Cont'd); Turbo Machinery

**Week 9:** Transportation Machinery for Surface Mines

**Week 10:** Transportation Machinery for Surface Mines (Cont'd); Transportation Machinery for Underground Mines

**Week 11:** Transportation Machinery for Underground Mines (Cont'd)

**Week 12:** Transportation Machinery for Underground Mines (Cont'd); Types of Maintenance and Maintenance Measurements