

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - Fundamentals of Environmental Pollution and Control

Subject Co-ordinator - Prof. J. Bhattacharyya

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - State of the Environment
- Lecture 2 - Environmental Movement
- Lecture 3 - Definitions of Environmental Terms
- Lecture 4 - Water Pollutants
- Lecture 5 - Water Pollutants (Continued...)
- Lecture 6 - Water Pollution Modelling-Surface Water
- Lecture 7 - Water Pollution Modelling-Surface Water(Continued...)
- Lecture 8 - BOD Modelling - Part 1
- Lecture 9 - BOD Modelling - Part 2
- Lecture 10 - Oxygen Demanding Waste in Streams - Part 1
- Lecture 11 - Oxygen Demanding Waste in Streams - Part 2
- Lecture 12 - Ground Water and its Contamination
- Lecture 13 - Ground Water and its Contamination (Continued...)
- Lecture 14 - Ground Water and its Contamination (Continued...)
- Lecture 15 - Waste Water Treatment
- Lecture 16 - Wastewater Treatment (Continued...)
- Lecture 17 - Wastewater Treatment (Continued...)
- Lecture 18 - Chemical Treatment
- Lecture 19 - Wetland Treatment and Bio-Technology Applications
- Lecture 20 - Introduction to Soil
- Lecture 21 - Parameters to Soil for Vegetative Growth
- Lecture 22 - Parameters to Soil for Vegetative Growth (Continued...)
- Lecture 23 - Soil Acidity
- Lecture 24 - Soil Erosion
- Lecture 25 - Mechanical Soil Erosion Control
- Lecture 26 - Soil Erosion Prediction
- Lecture 27 - Universal Soil Loss Equation
- Lecture 28 - Air Pollutants
- Lecture 29 - Health Effects of Air Pollutants - Part 1

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- Lecture 30 - Health Effects of Air Pollutants - Part 2
- Lecture 31 - Air Pollutants and Meteorology - Part 1
- Lecture 32 - Air Pollutants and Meteorology - Part 2
- Lecture 33 - The Point-Source Gaussian Plume Model
- Lecture 34 - Ground Level Concentration
- Lecture 35 - Emission Control
- Lecture 36 - EIA, EMP & EA

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC:Drilling and Blasting Technology

Subject Co-ordinator - Prof. Kaushik Dey

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction to Drilling Technology  
Lecture 2 - Introduction to Blasting Technology  
Lecture 3 - Rock Formation  
Lecture 4 - Rock Formation (Continued...)  
Lecture 5 - Rock Formation (Continued...)  
Lecture 6 - Rock Properties and Testing - 1  
Lecture 7 - Rock Properties and Testing - 2  
Lecture 8 - Drilling Mechanism  
Lecture 9 - Drillability of Rock  
Lecture 10 - Drilling Machines - 1  
Lecture 11 - Drilling Machines - 2  
Lecture 12 - Drilling Pattern - 1  
Lecture 13 - Drilling Pattern - 2  
Lecture 14 - Special Drilling Methods - I  
Lecture 15 - Special Drilling Methods - II  
Lecture 16 - Explosives - 1  
Lecture 17 - Explosives - 2  
Lecture 18 - Explosives accessories - 1  
Lecture 19 - Explosives accessories - 2  
Lecture 20 - Explosives accessories - 3  
Lecture 21 - Explosives properties - 1  
Lecture 22 - Explosives properties - 2  
Lecture 23 - Explosives properties - 3  
Lecture 24 - Basics of blasting - 1  
Lecture 25 - Basics of blasting - 2  
Lecture 26 - Explosive storage and transportation - 1  
Lecture 27 - Explosive storage and transportation - 2  
Lecture 28 - Surface blasting - 1  
Lecture 29 - Surface blasting - 2

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## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

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- Lecture 30 - Surface blast design
- Lecture 31 - Underground blast design - 1
- Lecture 32 - Underground blast design - 2
- Lecture 33 - Blasting results - 1
- Lecture 34 - Blasting results - 2
- Lecture 35 - Blasting results - 3
- Lecture 36 - Blasting results - 4
- Lecture 37 - Problems - 1
- Lecture 38 - Problems - 2
- Lecture 39 - Problems - 3
- Lecture 40 - Problems - 4

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC:Network Analysis for Mines and Mineral Engineering

Subject Co-ordinator - Prof. Kaushik Dey

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction to Network Analysis
- Lecture 2 - Introduction to network and some terminology
- Lecture 3 - Construction of network
- Lecture 4 - Introduction to activity on node diagram and comparison with arrow diagram
- Lecture 5 - Rules of dummy job, redundancy and cycles
- Lecture 6 - Critical path and its calculation
- Lecture 7 - Algorithm for critical path early start and early finish times
- Lecture 8 - Late start and late finish times algorithm
- Lecture 9 - Understanding the slack
- Lecture 10 - Examples of slacks and calculation of AON network
- Lecture 11 - Project due dates and earliest completion time examples
- Lecture 12 - CPM model and cost modelling
- Lecture 13 - Lowest cost schedule and optimum schedule
- Lecture 14 - Crashing and stretching of jobs
- Lecture 15 - Crashing and stretching of jobs (Continued...)
- Lecture 16 - Introduction to PERT
- Lecture 17 - Expected length of critical path calculation with examples
- Lecture 18 - Probability of completion of a project
- Lecture 19 - Event oriented project management
- Lecture 20 - Algorithm and computer program

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## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC: Mining Machinery

Subject Co-ordinator - Prof. Khanindra Pathak

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction to Mining Machinery - Part A
- Lecture 2 - Introduction to Mining Machinery - Part B
- Lecture 3 - Introduction to Machine Elements
- Lecture 4 - Mechanical Transmission of Power
- Lecture 5 - Shafts, Pulleys, Gears, and Geartrains Bearing and Brakes
- Lecture 6 - Belt Drives, Chain Drives
- Lecture 7 - Prime Movers
- Lecture 8 - Fluid Power for Mining Machinery
- Lecture 9 - Pneumatic Power for Mining Machinery
- Lecture 10 - Steel Wire Rope : Types and Basic Calculation
- Lecture 11 - Steel Wire Rope Maintenance
- Lecture 12 - Principle of Rock - Tool Interaction
- Lecture 13 - Site and Rock Preparation Equipment : Dozer Ripper
- Lecture 14 - Site and Rock Preparation Equipment : Ripper
- Lecture 15 - Drilling Machines for Mining
- Lecture 16 - Site and Rock Preparation Equipment : Scraper
- Lecture 17 - Site and Rock Preparation Equipment : Motor Grader
- Lecture 18 - Surface Mining Machinery : Machinery for Cyclic Excavation : Electric Rope Shovel
- Lecture 19 - Surface Mining Machinery : Machinery for Cyclic Excavation : Hydraulic Excavators and Back Hoe
- Lecture 20 - Surface Mining Machinery : Machinery for Cyclic Excavation : Front End Loader
- Lecture 21 - Surface Mining Machinery : Machinery for Cyclic Excavation : Dragline
- Lecture 22 - Surface Mining Machinery : Machinery for Continuous Excavation : Bucket Wheel Excavator
- Lecture 23 - Surface Mining Machinery : Machinery for Continuous Excavation : Bucket Chain Excavators
- Lecture 24 - Surface Mining Machinery : Machinery for Continuous Excavation : Continuous Surface Miner
- Lecture 25 - Surface Mining Machinery : Machinery for Continuous Excavation : Dredger
- Lecture 26 - Underground Mining Machinery Loaders : Gathering Arm Loader
- Lecture 27 - Underground Mining Machinery Loaders : Rocker Shovel and Side Discharge Loader
- Lecture 28 - Underground Mining Machinery Loaders : Load Haul Dump (LHD) Loader
- Lecture 29 - Underground Mining Machinery : Road Header

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- Lecture 30 - Underground Mining Machinery Underground Drills and Roof Bolter
- Lecture 31 - Underground Mining Machinery Continuous Miner
- Lecture 32 - Underground Mining Machinery Shuttle Car
- Lecture 33 - Longwall Mining Machinery Shearer
- Lecture 34 - Longwall Mining Machinery Armored Face Conveyor
- Lecture 35 - Longwall Mining Machinery Power Support
- Lecture 36 - Mine Pumps
- Lecture 37 - Mine Pumps : Special Pumps
- Lecture 38 - Basic Pumping Theory
- Lecture 39 - Air Compressor
- Lecture 40 - Fans for Mining
- Lecture 41 - Transportation Machinery for Surface Mines
- Lecture 42 - Automobiles in Mines and Mining Truck
- Lecture 43 - Off-highway Trucks
- Lecture 44 - Off-highway Trucks : Rimpull Curves and Tires
- Lecture 45 - Off-highway Trucks : Performance
- Lecture 46 - Belt Conveyor
- Lecture 47 - Belt Conveyor Design Criteria
- Lecture 48 - Power Requirements for Belt Conveyor
- Lecture 49 - Belt Conveyor Maintenance
- Lecture 50 - Aerial Rope Ways
- Lecture 51 - Machinery for Underground Mine Transport
- Lecture 52 - Endless Rope Haulage
- Lecture 53 - Rope Haulage in Underground Mines
- Lecture 54 - Locomotive
- Lecture 55 - Equipment for Shaft : Winding Machines
- Lecture 56 - Mechanics of Hoisting
- Lecture 57 - Low Profile Dumper
- Lecture 58 - Maintenance of Mining Machinery
- Lecture 59 - Maintenance Management Information System
- Lecture 60 - Non Destructive Testing

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC:Underground Mining of Metalliferous Deposits

Subject Co-ordinator - Prof. Bibhuti Bhusan Mandal

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Metals and Civilisation  
Lecture 2 - Mine Life Cycle  
Lecture 3 - Present Status of Mineral Deposits  
Lecture 4 - Present Status of Underground Mining  
Lecture 5 - Terminology - I  
Lecture 6 - Terminology - II  
Lecture 7 - Determination of Cut Off Grade - I  
Lecture 8 - Determination of Cut Off Grade - II  
Lecture 9 - Determination of Cut Off Grade - III  
Lecture 10 - Dilution  
Lecture 11 - Recovery  
Lecture 12 - Adit - I  
Lecture 13 - Adit - II  
Lecture 14 - Incline Shaft  
Lecture 15 - Shaft - I  
Lecture 16 - Shaft - II  
Lecture 17 - Shaft - III  
Lecture 18 - Horizontal Drivages - I  
Lecture 19 - Horizontal Drivages - II  
Lecture 20 - Horizontal Drivages - III  
Lecture 21 - Horizontal Drivages - IV  
Lecture 22 - Raising and Winzing - I  
Lecture 23 - Raising and Winzing - II  
Lecture 24 - Raising and Winzing - III  
Lecture 25 - Raising and Winzing - IV  
Lecture 26 - Selection of Mining Methods - I  
Lecture 27 - Selection of Mining Methods - II  
Lecture 28 - Selection of Mining Methods - III  
Lecture 29 - Selection of Mining Methods - IV

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- Lecture 30 - Selection of Mining Methods - V
- Lecture 31 - Breast Stopping
- Lecture 32 - Sampling Practices
- Lecture 33 - Stope and Pillar - I
- Lecture 34 - Stope and Pillar - II
- Lecture 35 - Room and Pillar Mining - I
- Lecture 36 - Room and Pillar Mining - II
- Lecture 37 - Tributary area method
- Lecture 38 - Pillar Failure
- Lecture 39 - Shrinkage Stopping - I
- Lecture 40 - Shrinkage Stopping - II
- Lecture 41 - Cut and Fill stopping - I
- Lecture 42 - Cut and Fill stopping - II
- Lecture 43 - Cut and Fill stopping - III [Post Pillar Method]
- Lecture 44 - Backfill Materials
- Lecture 45 - Backfill Materials - II
- Lecture 46 - Rock Bolting - I
- Lecture 47 - Rock Bolting - II
- Lecture 48 - Cable Bolting
- Lecture 49 - Sublevel Stopping
- Lecture 50 - Long Hole Stopping
- Lecture 51 - Resuing Method of Stopping
- Lecture 52 - Square Set Stopping
- Lecture 53 - Vertical Crater Retreat Method - I
- Lecture 54 - Vertical Crater Retreat Method - II
- Lecture 55 - Sublevel Caving - I
- Lecture 56 - Sublevel Caving - II
- Lecture 57 - Block Caving - I
- Lecture 58 - Block Caving - II
- Lecture 59 - Safety in U/G Metal Mines - I
- Lecture 60 - Safety in U/G Metal Mines - II

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC:Surface Mining Technology

Subject Co-ordinator - Prof. Kaushik Dey

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Rocks Mineral and Ore  
Lecture 2 - Current Status of Surface Mining  
Lecture 3 - Stripping Ratios and Pit Layouts - I  
Lecture 4 - Stripping Ratios and Pit Layouts - II  
Lecture 5 - Stripping Ratios and Pit Layouts - III  
Lecture 6 - Phases of Surface Mining - I  
Lecture 7 - Phases of Surface Mining - II  
Lecture 8 - Phases of Surface Mining - III  
Lecture 9 - Opening Through Box Cut - I  
Lecture 10 - Opening Through Box Cut - II  
Lecture 11 - Drilling Technology for Surface Blasting - I  
Lecture 12 - Drilling Technology for Surface Blasting - II  
Lecture 13 - Drilling Technology for Surface Blasting - III  
Lecture 14 - Drilling Technology for Surface Blasting - IV  
Lecture 15 - Technology for Surface Blasting - I  
Lecture 16 - Technology for Surface Blasting - II  
Lecture 17 - Technology for Surface Blasting - III  
Lecture 18 - Technology for Surface Blasting - IV  
Lecture 19 - Technology for Surface Blasting - V  
Lecture 20 - Technology for Surface Blasting - VI  
Lecture 21 - Excavation by Ripper - I  
Lecture 22 - Excavation by Ripper - II  
Lecture 23 - Excavation by Ripper - III  
Lecture 24 - Excavation with Shovel - I  
Lecture 25 - Excavation with Shovel - II  
Lecture 26 - Excavation with Shovel - III  
Lecture 27 - Excavation with Shovel - IV  
Lecture 28 - Transportation in Surface Mines - I  
Lecture 29 - Transportation in Surface Mines - II

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- Lecture 30 - Transportation in Surface Mines - III
- Lecture 31 - Excavation with Surface Miner - I
- Lecture 32 - Excavation with Surface Miner - II
- Lecture 33 - Excavation with Surface Miner - III
- Lecture 34 - Excavation with Surface Miner - IV
- Lecture 35 - Excavation with Surface Miner - V
- Lecture 36 - Excavation with Dragline - I
- Lecture 37 - Excavation with Dragline - II
- Lecture 38 - Excavation with Dragline - III
- Lecture 39 - Highwall Mining - I
- Lecture 40 - Highwall Mining - II
- Lecture 41 - Highwall Mining - III
- Lecture 42 - Excavation with Bucket Wheel Excavator - I
- Lecture 43 - Excavation with Bucket Wheel Excavator - II
- Lecture 44 - Excavation with Bucket Wheel Excavator - III
- Lecture 45 - Some Auxiliary Operations
- Lecture 46 - Haul Road - I
- Lecture 47 - Haul Road - II
- Lecture 48 - Haul Road - III
- Lecture 49 - Inland Transportation System - I
- Lecture 50 - Inland Transportation System - II
- Lecture 51 - Dimensional Stone Mining - I
- Lecture 52 - Dimensional Stone Mining - II
- Lecture 53 - Dimensional Stone Mining - III
- Lecture 54 - Seabed Mining - I
- Lecture 55 - Seabed Mining - II
- Lecture 56 - Stability Of Bench Slopes - I
- Lecture 57 - Stability Of Bench Slopes - II
- Lecture 58 - Stability Of Bench Slopes - III
- Lecture 59 - Closure Of Surface Mines - I
- Lecture 60 - Closure Of Surface Mines - II

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mining Engineering - NOC:Mine Automation and Data Analytics

Subject Co-ordinator - Prof. Radhakanta Koner

Co-ordinating Institute - IIT-ISM Dhanbad

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction to Automation
- Lecture 2 - Principle of Automation and Strategies
- Lecture 3 - Elements of Automated System
- Lecture 4 - Elements of Automated System (Continued...)
- Lecture 5 - Autonomous Haulage System
- Lecture 6 - Autonomous Haulage System (Continued...)
- Lecture 7 - Automated Drilling System
- Lecture 8 - Automated Drilling System (Continued...)
- Lecture 9 - Fleet Management System
- Lecture 10 - Fleet Management System (Continued...)
- Lecture 11 - Introduction to CMMS
- Lecture 12 - Enterprise resource planning (ERP) system
- Lecture 13 - Remote operation and control center
- Lecture 14 - Remote operation and control center
- Lecture 15 - Proximity Sensors
- Lecture 16 - Proximity Sensors and Control System
- Lecture 17 - Sensing System: Radar Technology
- Lecture 18 - RFID in Mining Engineering
- Lecture 19 - Introduction to Geo-fencing
- Lecture 20 - CCD camera in Mine safety and management
- Lecture 21 - GNSS in Mining
- Lecture 22 - GNSS Case Studies - Part I
- Lecture 23 - GNSS Case Studies - Part II
- Lecture 24 - Image Processing and Analysis in Remote Sensing
- Lecture 25 - Basics of Digital Image Processing
- Lecture 26 - Automated communication and tracking technologies: Image processing
- Lecture 27 - Automated Communication and Tracking Technologies: SCADA
- Lecture 28 - SCADA and its Application in Mining
- Lecture 29 - Introduction to VR Systems

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- Lecture 30 - Virtual Reality Application in Mining
- Lecture 31 - Introduction to Augmented Reality (AR)
- Lecture 32 - Augmented Reality Application in Mining
- Lecture 33 - Introduction - I
- Lecture 34 - Introduction - II
- Lecture 35 - Introduction to Probability and its associated terms
- Lecture 36 - Introduction to Probability and its associated terms
- Lecture 37 - Discrete Random Variable - Part I
- Lecture 38 - Discrete Random Variable - Part II
- Lecture 39 - Continuous Random Variable - Part I
- Lecture 40 - Continuous Random Variable - Part II
- Lecture 41 - Hypothesis Testing - I
- Lecture 42 - Hypothesis Testing - II
- Lecture 43 - t-test
- Lecture 44 - Chi-Squared Test
- Lecture 45 - Introduction to Machine Learning
- Lecture 46 - Regression
- Lecture 47 - Logistic Regression
- Lecture 48 - K Nearest Neighbor
- Lecture 49 - Support Vector Machine
- Lecture 50 - Naïve Bayes Classifier
- Lecture 51 - Artificial Neural Networks
- Lecture 52 - K Means Clustering
- Lecture 53 - DBSCAN
- Lecture 54 - Principal Component Analysis (PCA)
- Lecture 55 - Application of Big Data Analytics in Mining
- Lecture 56 - Big Data and AI Used Cases
- Lecture 57 - Cognitive Maintenance in Mining
- Lecture 58 - Cognitive Maintenance Case Studies
- Lecture 59 - Introduction to Orebody Modelling and Mine Design
- Lecture 60 - Case studies on Orebody Modeling and Mine Design