NPTEL Video Course - Civil Engineering - Advanced Geotechnical Engineering

Subject Co-ordinator - Dr. B.V.S. Viswanadham

Co-ordinating Institute - IIT - Bombay

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40
Lecture 41
Lecture 42
Lecture 43
Lecture 44
Lecture 45
Lecture 46
Lecture 47
Lecture 48
Lecture 49
Lecture 50
Lecture 51
Lecture 52
Lecture 53
Lecture 54
Lecture 55
Lecture 56
Lecture 57
Lecture 58
Lecture 59
Lecture 60

NPTEL Video Course - Civil Engineering - Soil Dynamics

Subject Co-ordinator - Dr. Deepankar Choudhury

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - Structural Dynamics

Subject Co-ordinator - Dr. P. Banerji

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - Watershed Management

Subject Co-ordinator - Dr. T.I. Eldho

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Environmental Guidelines for Water Quality Management
Lecture 31 - Storm Water Management
Lecture 32 - Urban Drainage System
Lecture 33 - Flood Routing
Lecture 34 - Flood Control & Management
Lecture 35 - Drought Assessment
Lecture 36 - Drought Analysis
Lecture 37 - Drought Mitigation
Lecture 38 - Water Conservation
Lecture 39 - Water Recycling
Lecture 40 - Water Reclaimation & Reuse

NPTEL Video Course - Civil Engineering - Fluid Mechanics

Subject Co-ordinator - Dr. T.I. Eldho

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Boundary Layer Theory and Applications
Lecture 31 - Boundary Layer Theory and Applications
Lecture 32 - Boundary Layer Theory and Applications
Lecture 33 - Boundary Layer Theory and Applications
Lecture 34 - Boundary Layer Theory and Applications
Lecture 35 - Boundary Layer Theory and Applications
Lecture 36 - Pipe Flow Systems
Lecture 37 - Pipe Flow Systems
Lecture 38 - Pipe Flow Systems
Lecture 39 - Pipe Flow Systems
Lecture 40 - Pipe Flow Systems
Lecture 41 - Pipe Flow Systems
Lecture 42 - Pipe Flow Systems

NPTEL Video Course - Civil Engineering - Soil Mechanics

Subject Co-ordinator - Dr. B.V.S. Viswanadham

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Soil Mechanics
Lecture 31 - Soil Mechanics
Lecture 32 - Soil Mechanics
Lecture 33 - Soil Mechanics
Lecture 34 - Soil Mechanics
Lecture 35 - Soil Mechanics
Lecture 36 - Soil Mechanics
Lecture 37 - Soil Mechanics
Lecture 38 - Soil Mechanics
Lecture 39 - Soil Mechanics
Lecture 40 - Soil Mechanics
Lecture 41 - Soil Mechanics
Lecture 42 - Soil Mechanics
Lecture 43 - Soil Mechanics
Lecture 44 - Soil Mechanics
Lecture 45 - Soil Mechanics
Lecture 46 - Soil Mechanics
Lecture 47 - Soil Mechanics
Lecture 48 - Soil Mechanics
Lecture 49 - Soil Mechanics
Lecture 50 - Soil Mechanics
Lecture 51 - Soil Mechanics
Lecture 52 - Soil Mechanics
Lecture 53 - Soil Mechanics
Lecture 54 - Soil Mechanics
Lecture 55 - Soil Mechanics
Lecture 56 - Soil Mechanics
Lecture 57 - Soil Mechanics

NPTEL Video Course - Civil Engineering - Structural Analysis II

Subject Co-ordinator - Dr. P. Banerji

Co-ordinating Institute - IIT - Bombay

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40

NPTEL Video Course - Civil Engineering - Geotechnical Earthquake Engineering

Subject Co-ordinator - Dr. Deepankar Choudhury

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - Geosynthetics Engineering: In Theory and Practice

Subject Co-ordinator - Prof. J.N. Mandal

Co-ordinating Institute - IIT - Bombay

Lecture 34 - Geosynthetics for Reinforced Soil Retaining Walls
Lecture 35 - Geosynthetics for Reinforced Soil Retaining Walls
Lecture 36 - Geosynthetic for Steep Slopes
Lecture 37 - Geosynthetic for Steep Slopes
Lecture 38 - Geosynthetic for Steep Slopes
Lecture 39 - Geosynthetic for Steep Slopes
Lecture 40 - Geosynthetic for Embankments on Soft Foundations
Lecture 41 - Geosynthetic for Embankments on Soft Foundations
Lecture 42 - Geosynthetic for Embankments on Soft Foundations
Lecture 43 - Geosynthetic for Ground Improvement
Lecture 44 - Geosynthetic for Ground Improvement
Lecture 45 - Geosynthetic for Ground Improvement
Lecture 46 - Geosynthetic for Ground Improvement
Lecture 47 - Geosynthetic for Ground Improvement
Lecture 48 - Geosynthetic for Ground Improvement
Lecture 49 - Geosynthetic for Ground Improvement
Lecture 50 - Geosynthetic for Improvement in Bearing Capacity
Lecture 51 - Designing with Geotextile Tube
Lecture 52 - Designing with Geotextile Tube
Lecture 53 - Design of Geosynthetic for Landfills
Lecture 54 - Design of Geosynthetic for Landfills
Lecture 55 - Design of Geosynthetic for Landfill
Lecture 56 - Design of Geosynthetic for Landfill
Lecture 57 - Design of Geosynthetic for Landfill
Lecture 58 - Designing With Geofoam
Lecture 59 - Designing With Geofoam
Lecture 60 - Designing With Geofoam
Lecture 61 - Designing With Geofoam
Lecture 62 - Designing With Geofoam
Lecture 63 - Designing With Geofoam

NPTEL Video Course - Civil Engineering - NOC:Geotechnical Engineering Laboratory

Subject Co-ordinator - Prof. J. N. Mandal

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Geosynthetics Testing Laboratory

Subject Co-ordinator - Prof. J. N. Mandal

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Environmental Geotechnics

Subject Co-ordinator - Prof. Devendra Narain Singh

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Environmental Geomechanics

Subject Co-ordinator - Prof. Devendra Narain Singh

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Geotechnical Engineering - 1

Subject Co-ordinator - Prof. Devendra Narain Singh

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing: Principles and Applications

Subject Co-ordinator - Prof. Eswar Rajasekaran

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Spectral Properties of few common earth features in the Visible, NIR and SWIR bands - Part 4
Lecture 31 - Spectral Properties of few common earth features in the Visible, NIR and SWIR bands - Part 5
Lecture 32 - Spectral Properties of few common earth features in the Visible, NIR and SWIR bands - Part 6
Lecture 33 - Spectral Properties of few common earth features in the Visible, NIR and SWIR bands - Part 7
Lecture 34 - Spectral Indices
Lecture 35 - Thermal Infrared Remote Sensing - Part 1
Lecture 36 - Thermal Infrared Remote Sensing - Part 2
Lecture 37 - Thermal Infrared Remote Sensing - Part 3
Lecture 38 - Thermal Infrared Remote Sensing - Part 4
Lecture 39 - Thermal Infrared Remote Sensing - Part 5
Lecture 40 - Passive Microwave Remote Sensing - Part 1
Lecture 41 - Passive Microwave Remote Sensing - Part 2
Lecture 42 - Passive Microwave Remote Sensing - Part 3
Lecture 43 - Passive Microwave Remote Sensing - Part 4
Lecture 44 - Active microwave Remote Sensing - Radar - Part 1
Lecture 45 - Active microwave Remote Sensing - Radar - Part 2
Lecture 46 - Active microwave Remote Sensing - Radar - Part 3
Lecture 47 - Active microwave Remote Sensing - Radar - Part 4
Lecture 48 - Active microwave Remote Sensing - Radar - Part 5
Lecture 49 - Active microwave Remote Sensing - Radar - Part 6
Lecture 50 - Platforms for remote sensing observations - Part 1
Lecture 51 - Platforms for remote sensing observations - Part 2
Lecture 52 - Platforms for remote sensing observations - Part 3
Lecture 53 - Platforms for remote sensing observations - Part 4
Lecture 54 - Platforms for remote sensing observations - Part 5
Lecture 55 - Platforms for remote sensing observations - Part 6
Lecture 56 - LIDAR - Part 1
Lecture 57 - LIDAR - Part 2
Lecture 58 - LIDAR - Part 3
Lecture 59 - RS data, data portals and processing tools - Part 1
Lecture 60 - RS data, data portals and processing tools - Part 2
Lecture 61 - RS data, data portals and processing tools - Part 3
Lecture 62 - Land use, land cover monitoring and change detection - Part 1
Lecture 63 - Land use, land cover monitoring and change detection - Part 2
Lecture 64 - Application of RS in water resources management - Part 1
Lecture 65 - Application of RS in water resources management - Part 2
Lecture 66 - Application of RS in water resources management - Part 3
Lecture 67 - Application of RS in water resources management - Part 4

NPTEL Video Course - Civil Engineering - NOC:Dynamics of Structures

Subject Co-ordinator - Prof. Manish Kumar

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Microwave Remote Sensing in Hydrology

Subject Co-ordinator - Prof. J. Indu

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Groundwater Hydrology and Management

Subject Co-ordinator - Prof. Pennan Chinnasamy

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Groundwater recharge and discharge - Part 5
Lecture 31 - Constructing aquifers using groundwater data - Part 1
Lecture 32 - Constructing aquifers using groundwater data - Part 2
Lecture 33 - Constructing aquifers using groundwater data - Part 3
Lecture 34 - Constructing aquifers using groundwater data - Part 4
Lecture 35 - Constructing aquifers using groundwater data - Part 5
Lecture 36 - Conceptual model for groundwater - Part 1
Lecture 37 - Conceptual model for groundwater - Part 2
Lecture 38 - Conceptual model for groundwater - Part 3
Lecture 39 - Conceptual model for groundwater - Part 4
Lecture 40 - Conceptual model for groundwater - Part 5
Lecture 41 - Groundwater data in India - Part 1
Lecture 42 - Groundwater data in India - Part 2
Lecture 43 - Groundwater data in India - Part 3
Lecture 44 - Groundwater data in India - Part 4
Lecture 45 - Groundwater data in India - Part 5
Lecture 46 - Application of Groundwater data in India - Part 1
Lecture 47 - Application of Groundwater data in India - Part 2
Lecture 48 - Application of Groundwater data in India - Part 2
Lecture 49 - Application of Groundwater data in India - Part 3
Lecture 50 - Application of Groundwater data in India - Part 3
Lecture 51 - Introduction to Groundwater modeling - Part 1
Lecture 52 - Introduction to Groundwater modeling - Part 2
Lecture 53 - Introduction to Groundwater modeling - Part 3
Lecture 54 - Introduction to Groundwater modeling - Part 4
Lecture 55 - Introduction to Groundwater modeling - Part 5
Lecture 56 - Case studies of Groundwater in India - Part 1
Lecture 57 - Case studies of Groundwater in India - Part 2
Lecture 58 - Case studies of Groundwater in India - Part 3
Lecture 59 - Case studies of Groundwater in India - Part 4
Lecture 60 - Case studies of Groundwater in India - Part 5

NPTEL Video Course - Civil Engineering - NOC:Rural Water Resources Management

Subject Co-ordinator - Prof. Pennan Chinnasamy

Co-ordinating Institute - IIT - Bombay

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

NPTEL Video Course - Civil Engineering - NOC:Geotechnical Engineering-II

Subject Co-ordinator - Prof. Devendra Narain Singh

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Earth Pressure Analysis (Trial Wedge) - III
Lecture 31 - Analysis of Completely Submerged Retaining wall
Lecture 32 - Gravity Walls Supporting Cohesive Soil Mass (Backfill)
Lecture 33 - Sloping Backfill
Lecture 34 - Earth Pressure Analysis - I
Lecture 35 - Earth Pressure Analysis - II
Lecture 36 - Sheet Pile Wall Introduction - I
Lecture 37 - Sheet Pile Wall Introduction - II
Lecture 38 - Sheet pile wall Introduction - III
Lecture 39 - Analysis of sheet piles - I
Lecture 40 - Analysis of sheet piles - II
Lecture 41 - Anchored Bulkheads
Lecture 42 - Cantilever Sheet Piles
Lecture 43 - Lateral Earth Pressure Braced Sheet Pile Walls
Lecture 44 - Slope Stability - I
Lecture 45 - Slope Stability - II
Lecture 46 - Slope Instability - I
Lecture 47 - Slope Instability - II
Lecture 48 - Slope Instability - III
Lecture 49 - Analysis of Finite Slopes - I Planar Failure Surface
Lecture 50 - Analysis of Finite Slopes - II Circular Failure Surface
Lecture 51 - Finite Slopes Friction Circle Method
Lecture 52 - Slip Circle Method

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing and GIS for Rural Development

Subject Co-ordinator - Prof. Pennan Chinnasamy

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Extracting polygon features from georeferenced data
Lecture 31 - Creating shapefiles from georefrenced maps
Lecture 32 - Google Earth Pro introduction for extracting data
Lecture 33 - Ground Control points from Google Earth Pro and Basemaps
Lecture 34 - Digital Elevation models and sources
Lecture 35 - Digital Elevation models (hands on example)
Lecture 36 - Introduction to Land Use Land Cover
Lecture 37 - Data for LULC and proxy data
Lecture 38 - Analyzing Bhuvan LULC data - Part 1
Lecture 39 - Analyzing Bhuvan LULC data - Part 2
Lecture 40 - Analyzing USGS LULC data
Lecture 41 - Different types of LULC classifications
Lecture 42 - Different types of LULC classifications
Lecture 43 - Remote Sensing for irrigation assessments
Lecture 44 - Remote Sensing for Groundwater irrigation assessments
Lecture 45 - Methods for Crop Statistics using Remote Sensing data
Lecture 46 - Remote Sensing based indicators for rural development
Lecture 47 - Remote Sensing methods for crop area and health assessments
Lecture 48 - NDVI data access
Lecture 49 - NDVI data from NASA platforms
Lecture 50 - NDVI data from Sentinel and NASA platforms
Lecture 51 - Remote Sensing based indicators database
Lecture 52 - Synergized mapping using Remote Sensing and Crowd Sourced data for rural infrastructures
Lecture 53 - RS and OSM for mapping rural infrastructures: Schools
Lecture 54 - RS and OSM for mapping rural infrastructures: Hospitals
Lecture 55 - RS and OSM for mapping rural infrastructures: Adding data, crops and water bodies
Lecture 56 - RS and GIS application for Rural Development: Moniotring and Evaluation
Lecture 57 - RS and GIS application for Rural Development: Monitoring and Evaluation using NDVI and NDWI
Lecture 58 - RS and GIS application for Rural Development: Water Quality Assessment
Lecture 59 - RS and GIS application for Rural Development: Indicators and Dashboards
Lecture 60 - RS and GIS for Rural Development - Summary, Wrap and Ways Forward

NPTEL Video Course - Civil Engineering - NOC:Stress and Strain Issues in Structural Geology

Subject Co-ordinator - Prof. Soumyajit Mukherjee

Co-ordinating Institute - IIT - Bombay

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

Lecture 30 - Ductile pure shear zone kinematics
Lecture 31 - Ductile pure shear zone kinematics and Taylor-Couette flow
Lecture 32 - Taylor-Couette flow
Lecture 33 - Introduction to Second-Rank Tensors - I
Lecture 34 - Introduction to Second-Rank Tensors - II
Lecture 35 - Second-Rank Tensors and Stress Issues - I
Lecture 36 - Second-Rank Tensors and Stress Issues - II
Lecture 37 - Second-Rank Tensors and Stress Issues - III
Lecture 38 - Cauchy Stress Tetrahedron
Lecture 39 - Stress Invariants
Lecture 40 - Stress and strain invariants, Hooke law for isotropic materials
Lecture 41 - Hookeâ s law - II
Lecture 42 - Triaxial stress applied on materials with thermal effects
Lecture 43 - How stress can alter permeability, double dot product and applications
Lecture 44 - Deviatoric stress and strain, deformation gradient and Jacobian matrix
Lecture 45 - General definition of 3D strain, application of Jacobian matrix
Lecture 46 - Application of Jacobian matrix, nonhomogeneous deformation
Lecture 47 - Rotation and translation - changes in coordinates
Lecture 48 - Principles of 1g analogue modeling - I
Lecture 49 - Principles of 1g analogue modeling - II
Lecture 50 - Principles of 1g analogue modeling - III
Lecture 51 - Anderson's theory of faulting
Lecture 52 - Stereoplot of principal stress axes - I
Lecture 53 - Stereoplot of principal stress axes - II
Lecture 54 - Stereoplot of principal stress axes - III
Lecture 55 - Deduction of principal stress axes orientation from fault data
Lecture 56 - Elementary stress problems dealing with stereonet - I
Lecture 57 - Elementary stress problems dealing with stereonet - II
Lecture 58 - Poroelasticity - I
Lecture 59 - Poroelasticity - II, stereonet problem
Lecture 60 - Poroelasticity - III

NPTEL Video Course - Civil Engineering - NOC:Principles of Stratigraphy

Subject Co-ordinator - Prof. Soumyajit Mukherjee

Co-ordinating Institute - IIT Bombay

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

Lecture 30 - Biostratigraphy - II
Lecture 31 - Biostratigraphy - III (biozones)
Lecture 32 - Biostratigraphy - IV (graphic and statistical correlations)
Lecture 33 - Graph Theory - I
Lecture 34 - Graph Theory - II
Lecture 35 - Graph Theory - III
Lecture 36 - Biostratigraphy - V (Elementary use of graph theory)
Lecture 37 - Biostratigraphy - VI (Use of graph theory)
Lecture 38 - Matching in the context of biostratigraphic correlation
Lecture 39 - Cladistics - I
Lecture 40 - Cladistics - II (How stratigraphy matters)
Lecture 41 - Biostratigraphy - VII
Lecture 42 - Magnetostratigraphy - I
Lecture 43 - Magnetostratigraphy - II
Lecture 44 - Magnetostratigraphy - III
Lecture 45 - Magnetostratigraphy - IV and Chemostratigraphy - I
Lecture 46 - Chemostratigraphy - II
Lecture 47 - Chemostratigraphy - III
Lecture 48 - Chemostratigraphy - IV
Lecture 49 - Chemostratigraphy - V
Lecture 50 - Sequence Stratigraphy - I
Lecture 51 - Sequence Stratigraphy - II
Lecture 52 - Sequence Stratigraphy - III
Lecture 53 - Sequence Stratigraphy - IV
Lecture 54 - Stratigraphy based on seismic images and well logs
Lecture 55 - Sequence Stratigraphy - V
Lecture 56 - Sequence Stratigraphy - VI, coastal and marine deposits
Lecture 57 - Sequence Stratigraphy - VII
Lecture 58 - Sequence Stratigraphy - VIII
Lecture 59 - Chronostratigraphy - I
Lecture 60 - Chronostratigraphy - II

NPTEL Video Course - Civil Engineering - Concrete Technology

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Shrinkage of Concrete
Lecture 31 - Fundamental Concepts, Degradation Process, Attacks
Lecture 32 - Frost Action and Rebar Corrosion
Lecture 33 - Carbonation and Chloride Affect
Lecture 34 - Rebar Corrosion
Lecture 35 - Rebar Corrosion and General Strateggy
Lecture 36 - High Strength Concrete
Lecture 37 - High Strength Matrics and SCC
Lecture 38 - Self Compacting Concrete
Lecture 39 - Fiber Concrete
Lecture 40 - Fiber and Roller Compacted Concrete
Lecture 41 - Special Concrete and Sustainability

NPTEL Video Course - Civil Engineering - Seismic Analysis of Structures

Subject Co-ordinator - Dr. T.K. Datta, Dr. Ashok Gupta

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Inelastic Seismic Response of Structures (Continued...)

NPTEL Video Course - Civil Engineering - Building materials and Construction

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Masonry
Lecture 31 - Walls
Lecture 32 - Walls
Lecture 33 - Metals Fundamentals
Lecture 34 - Metals and Iron Systems
Lecture 35 - Steel
Lecture 36 - Steel
Lecture 37 - Polymer in Construction
Lecture 38 - Polymer in Construction
Lecture 39 - Glass and Timber
Lecture 40 - Glass and Timber
Lecture 41 - Roof and Floor Construction

NPTEL Video Course - Civil Engineering - Water Management

Subject Co-ordinator - Dr. A.K. Gosain

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Sprinkler Irrigation System - II
Lecture 31 - Sprinkler Irrigation System - III
Lecture 32 - Sprinkler Irrigation System - IV
Lecture 33 - Sprinkler Irrigation System - V
Lecture 34 - Sprinkler Irrigation System - VI
Lecture 35 - Sprinkler Irrigation System - VII
Lecture 36 - Sprinkler Irrigation System - VIII
Lecture 37 - Drip Irrigation System - I
Lecture 38 - Drip Irrigation System - II
Lecture 39 - Drip Irrigation System - III
Lecture 40 - Drip Irrigation System - IV

NPTEL Video Course - Civil Engineering - NOC:Geoenvironmental Engineering (Environmental Geotechnology) Landf

Subject Co-ordinator - Prof. Manoj Datta

Co-ordinating Institute - IIT - Delhi

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

NPTEL Video Course - Civil Engineering - NOC:Energy Efficiency, Acoustics and Daylighting in Building

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Natural ventilation design
Lecture 31 - Noise and Acoustic Fundamentals - 1
Lecture 32 - Noise and Acoustic Fundamentals - 2
Lecture 33 - Noise and Acoustic Fundamentals - 3
Lecture 34 - Noise and Acoustic Fundamentals, Noise Outdoors
Lecture 35 - Noise outdoors
Lecture 36 - Sound within enclosure - 1
Lecture 37 - Sound within enclosure - 2
Lecture 38 - Sound within enclosure - 3
Lecture 39 - Sound within enclosure - 4
Lecture 40 - Sound within enclosure - 5
Lecture 41 - Sound within enclosure - 6
Lecture 42 - Sound within enclosure, isolation
Lecture 43 - Isolation - 1
Lecture 44 - Isolation - 2
Lecture 45 - Auditorium - 1
Lecture 46 - Auditorium - 2
Lecture 47 - Daylighting - 1
Lecture 48 - Daylighting - 2
Lecture 49 - Daylighting - 3
Lecture 50 - Daylighting - 4
Lecture 51 - Daylighting - 5
Lecture 52 - Daylighting - 6
Lecture 53 - Artificial Lighting
Lecture 54 - Design Sky models
Lecture 55 - Live Session

NPTEL Video Course - Civil Engineering - NOC:Fire Protection, Services and Maintenance Management of Building

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

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

Lecture 30 - Flow in Pipe Networks and Fixture Units
Lecture 31 - Flow in Pipe Networks (Continued...) and Design of Water Supply Distribution System
Lecture 32 - Design of Water Supply Distribution System (Continued...) and Flow in Waste Water pipes
Lecture 33 - Electrical Systems (introduction)
Lecture 34 - Design of Electrical Systems
Lecture 35 - Intelligent Building
Lecture 36 - Life cycle cost and basics of building maintenance
Lecture 37 - Stages of maintenance management
Lecture 38 - Planning for building maintenance
Lecture 39 - Periodicity of maintenance management
Lecture 40 - Estimation of repair cycle
Lecture 41 - Cost profile of maintenance
Lecture 42 - Lamp replacement
Lecture 43 - Building inspection, Planned and Ad-hoc maintenance
Lecture 44 - Condition survey and health evaluation of buildings
Lecture 45 - Diagnosis of building by visual survey
Lecture 46 - Case studies of visual survey
Lecture 47 - Effect of corrosion and Alkali Aggregate Reaction
Lecture 48 - Sampling and choice of test location
Lecture 49 - Non Destructive Testing - 1
Lecture 50 - Non Destructive Testing - 2
Lecture 51 - Core strength test
Lecture 52 - Carbonation and Chloride measurement
Lecture 53 - Electrical methods of progress measurement
Lecture 54 - Repair, Rehabilitation and Retrofit
Lecture 55 - Periodicity and economics of condition survey
Lecture 56 - Interpretation of test results

NPTEL Video Course - Civil Engineering - NOC:Sustainable Materials and Green Buildings

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

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

NPTEL Video Course - Civil Engineering - NOC:Scheduling Techniques in Projects

Subject Co-ordinator - Prof. J. Uma Maheswari

Co-ordinating Institute - IIT - Delhi

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

NPTEL Video Course - Civil Engineering - NOC:Safety in Construction

Subject Co-ordinator - Prof. J. Uma Maheswari

Co-ordinating Institute - IIT - Delhi

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

NPTEL Video Course - Civil Engineering - NOC:Structural Dynamics: Theory and Computation

Subject Co-ordinator - Prof. Arnab Banerjee

Co-ordinating Institute - IIT Delhi

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

NPTEL Video Course - Civil Engineering - Advanced Hydraulics

Subject Co-ordinator - Dr. Suresh A Kartha

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Theoretical aspects of hydraulic jump
Lecture 31 - Characteristics of jumps in rectangular channel
Lecture 32 - Features of hydraulic jumps
Lecture 33 - Jumps as energy dissipators
Lecture 34 - Jump controls
Lecture 35 - Surges - Part 1
Lecture 36 - Surges - Part 2
Lecture 37 - Channel transitions - Part 1
Lecture 38 - Channel transitions - Part 2
Lecture 39 - Channel transitions - Part 3
Lecture 40 - Application of momentum principles
Lecture 41 - Pumps - 1
Lecture 42 - Turbines - Part 3 (pumps, turbines)
Lecture 43 - Turbines, cavitation

NPTEL Video Course - Civil Engineering - Design of Steel Structures

Subject Co-ordinator - Prof. Damodar Maity

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - Hydraulics

Subject Co-ordinator - Prof. Arup Kumar Sharma

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Higher Surveying

Subject Co-ordinator - Prof. Ajay Dashora

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Radargrammetry
Lecture 31 - Geoscience perspective for RADAR applications
Lecture 32 - Fundamental concepts of hydrographic survey
Lecture 33 - Field procedures for hydrographic Surveying
Lecture 34 - Modern techniques for hydrographic Survey
Lecture 35 - Navigation
Lecture 36 - Conclusive lecture

NPTEL Video Course - Civil Engineering - NOC:Unsaturated Soil Mechanics

Subject Co-ordinator - Dr. Tadikonda Venkata Bharat

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Subsurface Exploration: Importance and Techniques Involved

Subject Co-ordinator - Prof. Abhishek Kumar

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Fluid Mechanics

Subject Co-ordinator - Dr. Subhashisa Dutta

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing and GIS

Subject Co-ordinator - Prof. Rishikesh Bharti

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:River Engineering

Subject Co-ordinator - Dr. Subhashisa Dutta

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Municipal Solid Waste Management

Subject Co-ordinator - Prof. Ajay Kalamdhad

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Introduction to solid waste
Lecture 2 - Functional elements
Lecture 3 - Types and sources of solid waste
Lecture 4 - Sampling and characteristics
Lecture 5 - Estimation of solid waste quantity
Lecture 6 - Factors affecting solid waste generation rate
Lecture 7 - Handling, separation and storage at source
Lecture 8 - Processing at source
Lecture 9 - Primary collection
Lecture 10 - Types of collection system
Lecture 11 - Analysis of collection system - Part I
Lecture 12 - Analysis of collection system - Part II
Lecture 13 - Analysis of collection system - Part III
Lecture 14 - Need and types of transfer station
Lecture 15 - Transport means and methods
Lecture 16 - Unit operation for component separation
Lecture 17 - Material recovery facilities (MRF)
Lecture 18 - Recycling of dry waste components
Lecture 19 - Waste as a fuel
Lecture 20 - Incineration/Combustion
Lecture 21 - Flue gas characteristics and treatment
Lecture 22 - Solid residue generation, characterization and treatment
Lecture 23 - Waste-to-energy (WtE) plants (case studies) pyrolysis and gasification
Lecture 24 - Definition and phases of composting
Lecture 25 - Factors affecting composting process
Lecture 26 - Types of composting - I
Lecture 27 - Types of composting - II
Lecture 28 - Compost quality
Lecture 29 - Vermicomposting

Lecture 30 - Definition, stages and factors affecting anaerobic digestion
Lecture 31 - Pretreatment and co-digestion for enhancement of biogas production
Lecture 32 - Types of biogas digesters
Lecture 33 - Site selection and types of landfill
Lecture 34 - Leachate collection and treatment
Lecture 35 - Landfill gas collection and treatment
Lecture 36 - Design of landfill and Bio-minning of old dumpsite
Lecture 37 - Construction and demolition waste
Lecture 38 - Management of bio-mediacal, e-waste and inert waste
Lecture 39 - Integrated solid waste management (ISWM)
Lecture 40 - Municipal solid waste management rules
Lecture 41 - Financing in MSWM projects
Lecture 42 - Public-Private-Partnership (PPP)
Lecture 43 - Public-Private-Partnership (PPP) in MSWM projects

NPTEL Video Course - Civil Engineering - NOC:Construction Methods and Equipment Management

Subject Co-ordinator - Prof. Indu Siva Ranjani Gandhi

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Advanced Soil Mechanics

Subject Co-ordinator - Prof. Sreedeep S

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Interpretation triaxial test - CD
Lecture 31 - Some additional aspects of shear strength
Lecture 32 - Summary of Module 2
Lecture 33 - Stress path and representation
Lecture 34 - Failure line in stress path
Lecture 35 - Stress path-some common cases - I
Lecture 36 - Stress path-some common cases - II
Lecture 37 - Stress path-triaxial test-drained
Lecture 38 - Stress path-triaxial test-undrained
Lecture 39 - Stress path-additional undrained case
Lecture 40 - Stress path-field cases - I
Lecture 41 - Stress path-field cases - II
Lecture 42 - Stress path problems
Lecture 43 - Summary of Module 3
Lecture 44 - Introduction-critical state soil mechanics
Lecture 45 - Introduction-critical state soil mechanics
Lecture 46 - CSSM-2 D representation
Lecture 47 - Peak state
Lecture 48 - Soil yielding
Lecture 49 - Cam clay
Lecture 50 - Modified Cam clay
Lecture 51 - Prediction of soil behavior from MCCM
Lecture 52 - Prediction of soil behavior from MCCM
Lecture 53 - Strain from MCCM
Lecture 54 - State boundary surface
Lecture 55 - CSSM problems
Lecture 56 - Summary of Module 4
Lecture 57 - Closure of Advanced Soil Mechanics Course

NPTEL Video Course - Civil Engineering - NOC:Plates and Shells

Subject Co-ordinator - Prof. Sudip Talukdar

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Membrane theory of hyperboloid of revolution: Application to cooling tower
Lecture 31 - Differential Equations of Equilibrium in Cylindrical shell using membrane hypothesis
Lecture 32 - Membrane Analysis of Cylindrical Shell roof subjected to self weight and snow load
Lecture 33 - Circular Cylindrical Shell for Fourier Loading in a membrane state of stress
Lecture 34 - Simplified Bending Theory of Cylindrical Shell-Beam and Arch theories
Lecture 35 - General bending theory of cylindrical shell
Lecture 36 - Some applications of symmetrical bending of circular cylindrical shell

NPTEL Video Course - Civil Engineering - NOC:Optimization methods for Civil engineering

Subject Co-ordinator - Prof. Rajib Kumar Bhattacharjya

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Engineering Hydrology

Subject Co-ordinator - Prof. Sreeja Pekkat

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Expansive Soil

Subject Co-ordinator - Prof. Anil Kumar Mishra

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Vibration of Continuous Systems

Subject Co-ordinator - Prof. Sudip Talukdar

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Approximate method for vibration analysis
Lecture 31 - Rayleigh-Ritz method for vibration analysis
Lecture 32 - Gallerkin's method and Finite difference method
Lecture 33 - System subjected to support excitation
Lecture 34 - Response of continuous systems to transient excitations
Lecture 35 - Shock spectrum due to half sine pulse
Lecture 36 - Numerical Evaluation of Duhamel Integral
Lecture 37 - Direct Integration Methods
Lecture 38 - Spectral Analysis of structures for earthquake excitation

NPTEL Video Course - Civil Engineering - NOC:Reliability-Based Structural Design

Subject Co-ordinator - Dr. Arunasis Chakarborty

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Applied Seismology for Engineers

Subject Co-ordinator - Prof. Abhishek Kumar

Co-ordinating Institute - IIT - Guwahati

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

Lecture 30 - Seismic vulnerability and risk - Part 3

NPTEL Video Course - Civil Engineering - NOC:Structural Vibration

Subject Co-ordinator - Prof. Arunasis Chakarborty

Co-ordinating Institute - IIT - Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Mechanics of Solids (2025)

Subject Co-ordinator - Prof. Arunasis Chakarborty

Co-ordinating Institute - IIT Guwahati

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

Lecture 30 - Shear center (Continued...)
Lecture 31 - Double integration method
Lecture 32 - Double integration with Macaulay's bracke
Lecture 33 - Beam deflection example
Lecture 34 - Beam deflection example (Continued...)
Lecture 35 - Pure Torsion
Lecture 36 - Shear Stress Distribution
Lecture 37 - Power Transmission and Composite shaft
Lecture 38 - Torsion with Warping
Lecture 39 - Strain Energy
Lecture 40 - Castigliano's theorems
Lecture 41 - Castigliano's theorem example
Lecture 42 - Castigliano's theorem for Indeterminate structure
Lecture 43 - Castigliano's theorem for Indeterminate structure (Continued...)
Lecture 44 - Column Buckling Theory
Lecture 45 - Euler Buckling Load
Lecture 46 - Column Buckling Example
Lecture 47 - Rankine's Theory
Lecture 48 - Column with Eccentric Load
Lecture 49 - Beam-Column Concept

NPTEL Video Course - Civil Engineering - NOC:Pavement Construction Technology

Subject Co-ordinator - Prof. Rajan Choudhary

Co-ordinating Institute - IIT Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Blast and Impact Resistant Structures

Subject Co-ordinator - Prof. Hrishikesh Sharma

Co-ordinating Institute - IIT Guwahati

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

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing for Natural Hazard Studies

Subject Co-ordinator - Prof. Rishikesh Bharti

Co-ordinating Institute - IIT Guwahati

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

Lecture 69 - Present and Future Scopes

NPTEL Video Course - Civil Engineering - Advanced Hydrology

Subject Co-ordinator - Dr. Ashu Jain

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40
Lecture 41
Lecture 42
Lecture 43
Lecture 44

NPTEL Video Course - Civil Engineering - Concrete Engineering and Technology

Subject Co-ordinator - Dr. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - Environmental Air Pollution

Subject Co-ordinator - Prof. Mukesh Sharma

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Derivation of Gaussian Model
Lecture 31 - Gaussian Model - Useful Formulation
Lecture 32 - Plume rise, Area and Line Source Model
Lecture 33 - Air Quality Modeling - Maximum Ground Level concentration
Lecture 34 - Examples of Air Quality Modeling
Lecture 35 - Air Pollution Control Devices - I
Lecture 36 - Air Pollution Control Devices - II
Lecture 37 - Source Emission Monitoring
Lecture 38 - Receptor Source Modeling
Lecture 39 - Environmental laws

NPTEL Video Course - Civil Engineering - Surveying

Subject Co-ordinator - Dr. Bharat Lohani

Co-ordinating Institute - IIT - Kanpur

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

Module 1 - Lecture 1
Module 2 - Lecture 1
Module 2 - Lecture 2
Module 2 - Lecture 3
Module 2 - Lecture 4
Module 2 - Lecture 5
Module 3 - Lecture 1
Module 3 - Lecture 2
Module 3 - Lecture 3
Module 3 - Lecture 4
Module 4 - Lecture 1
Module 4 - Lecture 2
Module 5 - Lecture 1
Module 5 - Lecture 2
Module 5 - Lecture 3
Module 5 - Lecture 4
Module 5 - Lecture 5
Module 5 - Lecture 6
Module 6 - Lecture 1
Module 6 - Lecture 2
Module 6 - Lecture 3
Module 7 - Lecture 1
Module 7 - Lecture 2
Module 7 - Lecture 3
Module 7 - Lecture 4
Module 7 - Lecture 5
Module 8 - Lecture 1
Module 8 - Lecture 2
Module 9 - Lecture 1

Module 9 - Lecture 2
Module 9 - Lecture 3
Module 9 - Lecture 4
Module 9 - Lecture 5
Module 10 - Lecture 1
Module 11 - Lecture 1
Module 11 - Lecture 2
Module 11 - Lecture 3
Module 12 - Lecture 1
Module 12 - Lecture 2
Module 12 - Lecture 3

NPTEL Video Course - Civil Engineering - Water Resources Engineering

Subject Co-ordinator - Dr. Pranab K Mohapatra, Prof. Rajesh Srivastava

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1
Lecture 2
Lecture 3
Lecture 4
Lecture 5
Lecture 6
Lecture 7
Lecture 8
Lecture 9
Lecture 10
Lecture 11
Lecture 12
Lecture 13
Lecture 14
Lecture 15
Lecture 16
Lecture 17
Lecture 18
Lecture 19
Lecture 20
Lecture 21
Lecture 22
Lecture 23
Lecture 24
Lecture 25 (Lecture Missing)
Lecture 26
Lecture 27
Lecture 28
Lecture 29

NPTEL Video Course - Civil Engineering - Geotechnical Measurements and Explorations

Subject Co-ordinator - Dr. Nihar Ranjan Patra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Geotechnical Measurements & Explorations
Lecture 31 - Geotechnical Measurements & Explorations
Lecture 32 - Geotechnical Measurements & Explorations
Lecture 33 - Geotechnical Measurements & Explorations
Lecture 34 - Geotechnical Measurements & Explorations
Lecture 35 - Geotechnical Measurements & Explorations
Lecture 36 - Geotechnical Measurements & Explorations
Lecture 37 - Geotechnical Measurements & Explorations
Lecture 38 - Geotechnical Measurements & Explorations
Lecture 39 - Geotechnical Measurements & Explorations
Lecture 40 - Geotechnical Measurements & Explorations

NPTEL Video Course - Civil Engineering - Application of Soil Mechanics

Subject Co-ordinator - Dr. Nihar Ranjan Patra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Application of Soil Mechanics
Lecture 31 - Application of Soil Mechanics
Lecture 32 - Application of Soil Mechanics
Lecture 33 - Application of Soil Mechanics
Lecture 34 - Application of Soil Mechanics
Lecture 35 - Application of Soil Mechanics
Lecture 36 - Application of Soil Mechanics
Lecture 37 - Application of Soil Mechanics
Lecture 38 - Application of Soil Mechanics
Lecture 39 - Application of Soil Mechanics
Lecture 40 - Application of Soil Mechanics

NPTEL Video Course - Civil Engineering - NOC:Geology and Soil Mechanics

Subject Co-ordinator - Dr. Priyanka Ghosh

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Description of soil, Engineering Geology Of Soils and Thier Formation
Lecture 2 - Index Properties Of Soil
Lecture 3 - Index Properties Of Soil - A
Lecture 4 - Index Properties Of Soil - B
Lecture 5 - Index Properties Of Soil - C
Lecture 6 - Index Properties Of soil - D
Lecture 7 - Classification Of Soils - A
Lecture 8 - Classification Of Soils - B
Lecture 9 - Classification Of Soils And Clay Mineralogy - A
Lecture 10 - Classification Of Soils And Clay Mineralogy - B
Lecture 11 - Soil compaction - A
Lecture 12 - Soil compaction - B
Lecture 13 - Soil compaction - C
Lecture 14 - Soil compaction - D
Lecture 15 - Soil compaction and Permeability
Lecture 16 - Permeability - A
Lecture 17 - Permeability - B
Lecture 18 - Permeability - C
Lecture 19 - Problems on permeability
Lecture 20 - Seepage
Lecture 21 - Seepage - A
Lecture 22 - Seepage - B
Lecture 23 - Seepage and In situ stress
Lecture 24 - In situ stresses - A
Lecture 25 - In situ stresses - B
Lecture 26 - In situ stresses - A
Lecture 27 - In situ stresses - B
Lecture 28 - In situ stresses - C
Lecture 29 - Consolidation - A

Lecture 30 - Consolidation - B
Lecture 31 - Consolidation - A
Lecture 32 - Consolidation - B
Lecture 33 - Consolidation - C
Lecture 34 - Consolidation - D
Lecture 35 - Consolidation - E
Lecture 36 - Consolidation - F
Lecture 37 - Shear strength of Soil - A
Lecture 38 - Shear strength of Soil - B
Lecture 39 - Shear strength of Soil - C
Lecture 40 - Shear Strength of Soils
Lecture 41 - Shear Strength of Soils.
Lecture 42 - Shear Strength of Soils..
Lecture 43 - Shear strength of Soil
Lecture 44 - Shear strength of Soil- e
Lecture 45 - Shear strength of Soil_B
Lecture 46 - Problem on shear strength of soil
Lecture 47 - Problem on shear strength of soil -a
Lecture 48 - Problem on shear strength of soil -a
Lecture 49 - Earth Pressure on retaining wall
Lecture 50 - Earth Pressure on retaining wall -A
Lecture 51 - Tutorial on Index properties of soil
Lecture 52 - Tutorial on compaction
Lecture 53 - Tutorial on Permeability - a
Lecture 54 - Tutorial on Permeability - b
Lecture 55 - Tutorial On Consoildation
Lecture 56 - Tutorial on consoildation - a
Lecture 57 - Tutorial on Sheer Strength
Lecture 58 - Tutorial on Sheer Strength - a
Lecture 59 - Earth Pressure on Retaining Wall - a
Lecture 60 - Earth Pressure on Retaining Wall - 1
Lecture 61 - Earth Pressure Theories and Problems on Earth Pressure on Retaining Wall
Lecture 62 - Problems on Earth Pressure on Retaining Wall Edit Lesson
Lecture 63 - Problems on Earth Pressure on Retaining Wall - 2
Lecture 64 - Problems on Earth Pressure Theories - 3
Lecture 65 - Problems on Earth Pressure Theories - 4

NPTEL Video Course - Civil Engineering - NOC:Engineering Graphics

Subject Co-ordinator - Dr. Nihar Ranjan Patra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Earth Sciences for Civil Engineering

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Earth Sciences for Civil Engineering - Part 2

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction to Geological Hazards and Enviromental Impact - Part 1
Lecture 2 - Introduction to Geological Hazards and Enviromental Impact - Part 2
Lecture 3 - Introduction to Geological Hazards and Enviromental Impact - Part 3
Lecture 4 - Active Faults and its Related Hazards in India - Part 1
Lecture 5 - Active Faults and its Related Hazards in India - Part 2
Lecture 6 - Active faults and its related hazards in India - Part 3
Lecture 7 - Active faults and its related hazards in India - Part 4
Lecture 8 - Active faults its related hazards in India - Part 5
Lecture 9 - Active faults its related hazards in India - Part 6
Lecture 10 - Active faults its related hazards in India - Part 7 and Civil Engineering applications - geologi
Lecture 11 - Civil Engineering applications Â geological considerations in dams, tunnels - Part 2
Lecture 12 - Civil Engineering applications Â geological considerations in dams, tunnels - Part 3 and Tsunam
Lecture 13 - Tsunami and related hazard - Part 2
Lecture 14 - Tsunami and related hazard - Part 3
Lecture 15 - Landslide and subsidence - Part 1
Lecture 16 - Landslide and subsidence - Part 2
Lecture 17 - Landslide and subsidence - Part 3
Lecture 18 - Flood and related hazard - Part 1
Lecture 19 - Flood and related hazard - Part 2
Lecture 20 - Groundwater

NPTEL Video Course - Civil Engineering - NOC:Hydration, Porosity and Strength of Cementitious Materials

Subject Co-ordinator - Dr. Satyaki Roy, Dr. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Lecture 1 - Introduction to the course
Lecture 2 - Lecture 2 - Concrete - A Three Phase System
Lecture 3 - Lecture 3 - Basic Properties of Concrete
Lecture 4 - Lecture 4 - Portland Cement
Lecture 5 - Lecture 5 - Portland Cement (Continued...)
Lecture 6 - Lecture 6 - Introduction (Aggregates) - 1
Lecture 7 - Lecture 7 - Introduction (Aggregates) - 2
Lecture 8 - Lecture 8 - Introduction (Aggregates) - 3
Lecture 9 - Lecture 9 - Introduction (Concrete Mixture Proportioning Strategies)
Lecture 10 - Lecture 10 - Introduction (Chemical Admixtures)
Lecture 11 - Lecture-11 - Portland Cement Based Paste Systems - I
Lecture 12 - Lecture 12 - Portland Cement Based Paste Systems - II
Lecture 13 - Lecture 13 - Portland Cement Based Paste Systems - III
Lecture 14 - Lecture 14 - Portland Cement Paste Based Systems - IV
Lecture 15 - Lecture 15 - Portland Cement Based Paste Systems - V
Lecture 16 - Lecture 16 - 18 Part 1 - Portland Cement Based Paste Systems - VI
Lecture 17 - Lecture 16 - 18 Part 2 - Portland Cement Based Paste Systems - VII
Lecture 18 - Lecture 19 - Heat of hydration of Portland Cement
Lecture 19 - Lecture 20 - Mass Concrete
Lecture 20 - Lecture 21-22 - Mineral Admixtures - 1
Lecture 21 - Lecture 23-24 - Mineral Admixtures - 2
Lecture 22 - Lecture 25-27 - Mineral Admixtures - 3
Lecture 23 - Lecture 28-30 - Mineral Admixtures - 4
Lecture 24 - Lecture 31 - From paste to concrete
Lecture 25 - Lecture 32 - Demonstration
Lecture 26 - Lecture 33 - Pores and porosity - A revisit
Lecture 27 - Lecture 34 - Measuring permeability of concrete
Lecture 28 - Lecture 35 - Behavior under load
Lecture 29 - Lecture 36 - Curing of concrete

Lecture 30 - Lecture 37 - Stress strain behaviour
Lecture 31 - Lecture 38 - Durability of concrete - I
Lecture 32 - Lecture 39 - Durability of concrete - II - Specifications

NPTEL Video Course - Civil Engineering - NOC:Mechanics of Solids

Subject Co-ordinator - Dr. Priyanka Ghosh

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Elastic Stress Strain Relationship
Lecture 31 - Von Mises Yield Criteria
Lecture 32 - Tresca Criteria
Lecture 33 - True Stress Strain
Lecture 34 - Tutorial 2
Lecture 35 - Forces and Moments Transmitted by Slender Members
Lecture 36 - Bending Moment
Lecture 37 - Shear Force and Bending Moment Diagrams
Lecture 38 - Differential Equation Relationship
Lecture 39 - Tutorial 3
Lecture 40 - Tutorial 4
Lecture 41 - Torsion
Lecture 42 - Stress Components
Lecture 43 - Tutorial A
Lecture 44 - Tutorial B
Lecture 45 - Stresses due to Bending
Lecture 46 - Equilibrium Requirements
Lecture 47 - Beam Transmitting both Shear Force and Bending Moment
Lecture 48 - Shear Stress Distribution
Lecture 49 - Distribution of Shear Stress in I Beam
Lecture 50 - Tutorial 1
Lecture 51 - Deflections due to Bending
Lecture 52 - Integration of Moment Curvature Relation
Lecture 53 - Superposition Continued
Lecture 54 - Load Deflection Differential Equation
Lecture 55 - Castiglianoâ s Theorem
Lecture 56 - Strain Energy Methods
Lecture 57 - Introduction to Concept of Elastic Instability
Lecture 58 - Critical Load
Lecture 59 - Critical Load for Flexible Columns
Lecture 60 - Concluding Lecture

NPTEL Video Course - Civil Engineering - NOC:Principles of Construction Management

Subject Co-ordinator - Dr. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Quality control of grouts in ducts of post-tensioned PC members
Lecture 31 - Quality control (QC) issues in concrete

NPTEL Video Course - Civil Engineering - NOC:Foundation Design

Subject Co-ordinator - Dr. Nihar Ranjan Patra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Photogeology In Terrain Evaluation

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Photogeology In Terrain Evaluation - Part 2

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction to Geological Structures, Photo interpretation and Terrain evaluation
Lecture 2 - Photo interpretation/identification of Landforms associated with Folds - 1
Lecture 3 - Photo interpretation/identification of Landforms associated with Folds - 2
Lecture 4 - Identification of features related to ongoing Crustal Deformation and Mountain Building process
Lecture 5 - Identification of Fault Topography
Lecture 6 - Photogeology
Lecture 7 - Photo Interpretations
Lecture 8 - Photo Interpretations
Lecture 9 - Photo Interpretations
Lecture 10 - Photo-Interpretations
Lecture 11 - Photo Interpretations
Lecture 12 - Photo Interpretations
Lecture 13 - Photo Interpretations
Lecture 14 - Photo Interpretations
Lecture 15 - Photo Interpretations
Lecture 16 - Exercise on Identification of Geological Structures and related Landforms
Lecture 17 - Exercise on Identification of Geomorphic Features related to Various Environments
Lecture 18 - Exercise on Identification of Tectonic Features and Geomorphic Mapping using Satellite Data
Lecture 19 - Exercise on Identification of Geological Structures and Geomorphic Landforms on Aerial/Satellite
Lecture 20 - Exercise on Morphometric Parameters and 3D observation of the Earth Surface Features

NPTEL Video Course - Civil Engineering - NOC:Introduction to Accounting and Finance for Civil Engineers

Subject Co-ordinator - Dr. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Introduction to accounting - Part 2
Lecture 31 - Introduction to accounting - Part 3
Lecture 32 - Revenue recognition
Lecture 33 - Construction Contract Status Reports
Lecture 34 - Assets and Liabilities
Lecture 35 - Accounting statements - case study
Lecture 36 - Working capital
Lecture 37 - Financing resources for working capital
Lecture 38 - Ratio analysis

NPTEL Video Course - Civil Engineering - NOC:Natural Hazards - Part 1

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Structural Dynamics for Civil Engineers - SDOF Systems

Subject Co-ordinator - Prof. Riya Catherine George

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Geomorphic Processes: Landforms and Landscapes

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction to Geomorphic processes- Landforms and Landscapes - Part I
Lecture 2 - Introduction to Geomorphic Processes- Landforms and Landscapes - Part II
Lecture 3 - Introduction to Geomorphic Processes- Landforms and Landscapes - Part III
Lecture 4 - Earth Energy Budget - Part I
Lecture 5 - Earth Energy Budget - Part II
Lecture 6 - Earth and Environment
Lecture 7 - Surface and Ground Water System and Management - Part I
Lecture 8 - Surface and Ground Water System and Management - Part II
Lecture 9 - Surface and Ground Water System and Management - Part III
Lecture 10 - Interior of the Earth and Plate Tectonics - Part I
Lecture 11 - Interior of the Earth and Plate Tectonics - Part II
Lecture 12 - Interior of the Earth and Plate Tectonics - Part III
Lecture 13 - Interior of the Earth and Plate Tectonics - Part IV
Lecture 14 - Interior of the Earth and Plate Tectonics - Part V
Lecture 15 - Fluvial Processes and Related Landforms - Part I
Lecture 16 - Fluvial Processes and Related Landforms - Part II
Lecture 17 - Fluvial Processes and Related Landforms - Part III
Lecture 18 - Fluvial Processes and Related Landforms - Part IV
Lecture 19 - Fluvial Processes and Related Landforms - Part V
Lecture 20 - Fluvial Processes and Related Landforms - Part VI
Lecture 21 - Fluvial Processes and Related Landforms - Part VII
Lecture 22 - Fluvial Processes and Related Landforms - Part VIII
Lecture 23 - Fluvial Processes and Related Landforms - Part IX
Lecture 24 - Tectonic Geomorphology - Part I
Lecture 25 - Tectonic Geomorphology - Part II
Lecture 26 - Tectonic Geomorphology - Part III
Lecture 27 - Tectonic Geomorphology - Part IV
Lecture 28 - Tectonic Geomorphology - Part V
Lecture 29 - Glacial Landforms - Part I

NPTEL Video Course - Civil Engineering - NOC:Structural Geology

Subject Co-ordinator - Prof. Santanu Misra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Earthquake Geology: A tool for Seismic Hazard Assessment

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30 - Lab and Field Techniques in Active Fault Mapping and Paleoseismic studies - Part V
Lecture 31 - Extensional Tectonic Environments and Related Landforms - Part I
Lecture 32 - Extensional Tectonic Environments and Related Landforms - Part II
Lecture 33 - Extensional Tectonic Environments and Related Landforms - Part III
Lecture 34 - Extensional Tectonic Environments and Related Landforms - Part IV
Lecture 35 - Compressional Tectonic Environments and Related Landforms - Part I
Lecture 36 - Compressional Tectonic Environments and Related Landforms - Part II
Lecture 37 - Compressional Tectonic Environments and Related Landforms - Part III
Lecture 38 - Compressional Tectonic Environments and Related Landforms - Part IV
Lecture 39 - Compressional Tectonic Environments and Related Landforms - Part V
Lecture 40 - Compressional Tectonic Environments and Related Landforms - Part VI
Lecture 41 - Compressional Tectonic Environments and Related Landforms - Part VII
Lecture 42 - Strike-Slip Tectonic Environments and Related Landforms - Part I
Lecture 43 - Strike-Slip Tectonic Environments and Related Landforms - Part II
Lecture 44 - Strike-Slip Tectonic Environments and Related Landforms - Part III
Lecture 45 - Strike-Slip Tectonic Environments and Related Landforms - Part IV
Lecture 46 - Geomoprhic Markers for Fluvial Environment - Part I
Lecture 47 - Geomoprhic Markers for Fluvial Environment - Part II
Lecture 48 - Geomorphic Markers - Part III
Lecture 49 - Tectonic Geomorphology - Part I
Lecture 50 - Tectonic Geomorphology - Part II
Lecture 51 - Coastal Geomorphic Markers - Part I
Lecture 52 - Coastal Geomorphic Markers - Part II
Lecture 53 - Coastal Geomorphic Markers - Part III
Lecture 54 - Tsunami and Paleostsunami signatures Investigation - Part I
Lecture 55 - Tsunami and Paleostsunami signatures Investigation - Part II
Lecture 56 - Tsunami and Paleostsunami signatures Investigation - Part III
Lecture 57 - Field Documentary

NPTEL Video Course - Civil Engineering - NOC:Development and Applications of Special Concretes

Subject Co-ordinator - Prof. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Introductory Field Structural Geology

Subject Co-ordinator - Prof. Santanu Misra

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Earth Sciences for Civil Engineering (Hindi)

Subject Co-ordinator - Prof. Javed N Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction to Geosciences in Civil Engineering - I
Lecture 2 - Introduction to Geosciences in Civil Engineering - II
Lecture 3 - Introduction to Geosciences in Civil Engineering - III
Lecture 4 - Plate Tectonics and Continental Drift - I
Lecture 5 - Plate Tectonics and Continental Drift - II
Lecture 6 - Plate Tectonics and Continental Drift - III
Lecture 7 - Plate Tectonics and Continental Drift - IV
Lecture 8 - Plate Tectonics and Continental Drift - V
Lecture 9 - Plate Tectonics and Continental Drift - VI
Lecture 10 - Plate Tectonics and Continental Drift - VII
Lecture 11 - Plate Tectonics and Continental Drift - VIII
Lecture 12 - Rock-Forming Minerals and their Properties - I
Lecture 13 - Rock-Forming Minerals and their Properties - II
Lecture 14 - Rock-Forming Minerals and their Properties - III
Lecture 15 - Igneous Rocks and their Properties - I
Lecture 16 - Igneous Rocks and their Properties - II
Lecture 17 - Igneous Rocks and their Properties - III
Lecture 18 - Sedimentary Rocks and their Properties - I
Lecture 19 - Sedimentary Rocks and their Properties - II
Lecture 20 - Sedimentary Rocks and their Properties - III
Lecture 21 - Metamorphic Rocks and their Properties - I
Lecture 22 - Metamorphic Rocks and their Properties - II
Lecture 23 - Seismology and Internal Structure of the earth - Part 1
Lecture 24 - Seismology and Internal Structure of the earth - Part 2
Lecture 25 - Seismology and Internal Structure of the earth - Part 3
Lecture 26 - Seismology and Internal Structure of the earth - Part 4
Lecture 27 - Seismology and Internal Structure of the earth - Part 5
Lecture 28 - Seismic Events and Sediments Amplification - I
Lecture 29 - Seismic Events and Sediments Amplification - II

NPTEL Video Course - Civil Engineering - NOC:Construction Management

Subject Co-ordinator - Prof. Sudhir Misra

Co-ordinating Institute - IIT - Kanpur

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40
Lecture 41
Lecture 42

NPTEL Video Course - Civil Engineering - NOC:Laboratory Practices in Earth Sciences: Landscape Mapping

Subject Co-ordinator - Prof. Javed N Malik

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Natural Hazards (Hindi)

Subject Co-ordinator - Prof. Javed N. Malik

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction to Natural Hazards: Understanding the Basics
Lecture 2 - Introduction to Natural Hazards: Processes and Types
Lecture 3 - Human Impacts on Natural Hazards: Vulnerability and Risk
Lecture 4 - Human Impacts on Natural Hazards: Mitigation and Adaptation
Lecture 5 - Introduction to Earthquakes and Landslides: Causes and Impacts
Lecture 6 - Introduction to Cloudbursts and Floods: Mechanisms and Hazards
Lecture 7 - Understanding Tsunamis: Generation and Effects
Lecture 8 - Plate Tectonics: Fundamentals and Historical Development
Lecture 9 - Plate Tectonics: Processes and Features
Lecture 10 - Plate Tectonics: Implications for Natural Hazards
Lecture 11 - Earth as a Dynamo: Understanding Magnetic Polarity Reversals
Lecture 12 - Exploring Earth's Interior: Structure and Dynamics
Lecture 13 - Hot Spot Volcanism
Lecture 14 - Earth's Interior and Seismic Waves
Lecture 15 - Earthquakes: A Hazard
Lecture 16 - Earthquake Forecasting and Predictions
Lecture 17 - Locating Earthquakes Using Seismometers
Lecture 18 - Seismic Amplification Due to Sediment Properties
Lecture 19 - Intraplate Earthquakes
Lecture 20 - Earthquake Intensity and Magnitude Scales
Lecture 21 - Active Faults and Associated Hazards
Lecture 22 - Earthquakes and their Characteristics - Part 1
Lecture 23 - Earthquakes and their Characteristics - Part 2
Lecture 24 - Case Studies of Significant Earthquakes Around the World
Lecture 25 - Active Faults Along the Himalayan Frontal Belt
Lecture 26 - Active Faults of the Kangra Valley and Hajipur in the Himalayas
Lecture 27 - Ground Effects Due to Earthquakes
Lecture 28 - Ground Failure, Liquefaction, and Sand Blows
Lecture 29 - Ground Effefts and Microzonation in India

Lecture 30 - Volcanic Hazards and Associated Risks
Lecture 31 - Introduction to Floods and Associated Hazards
Lecture 32 - River and Associated Landforms - Part 1
Lecture 33 - River and Associated Landforms - Part 2
Lecture 34 - River and Associated Landforms - Part 3
Lecture 35 - Drainage Basins and Drainage Patterns - Part 1
Lecture 36 - Drainage Basins and Drainage Patterns - Part 2
Lecture 37 - River Monitoring
Lecture 38 - Landslide and Mass Wasting - Part 1
Lecture 39 - Landslide and Mass Wasting - Part 2
Lecture 40 - Type of Landslide - Part 1
Lecture 41 - Type of Landslide - Part 2
Lecture 42 - Landslide Control and Stabilization Techniques
Lecture 43 - Earth's Energy Budget and Climate Impact
Lecture 44 - Greenhouse Gases, Global Warming, and Carbon Footprint
Lecture 45 - Quaternary Climate Change and the Milankovitch Cycles
Lecture 46 - Atmospheric Processes and Hazards - Part 1
Lecture 47 - Atmospheric Processes and Hazards - Part 2
Lecture 48 - Atmospheric Processes and Hazards - Part 3
Lecture 49 - Atmospheric Processes and Hazards - Part 4
Lecture 50 - Introduction to Tsunami - Part 1
Lecture 51 - Introduction to Tsunami - Part 2
Lecture 52 - Case Study of 1960 Chilean Earthquake Tsunami
Lecture 53 - Tsunami Monitoring and Warning System
Lecture 54 - Case Study of 2004 Sumatra-Andaman Earthquake Tsunami - Part 1
Lecture 55 - Case Study of 2004 Sumatra-Andaman Earthquake Tsunami - Part 2
Lecture 56 - Case Study of 2004 Sumatra-Andaman Earthquake Tsunami - Part 3
Lecture 57 - Case Study of 2004 Sumatra-Andaman Earthquake Tsunami - Part 4
Lecture 58 - Case Study of 2004 Sumatra-Andaman Earthquake Tsunami - Part 5
Lecture 59 - Case Study of 2011 Tohoku Earthquake Tsunami - Part 1
Lecture 60 - Palu Tsunami 2018 and Myanmar Earthquake 2025

NPTEL Video Course - Civil Engineering - NOC:Environmental Fluid Mechanics

Subject Co-ordinator - Prof. Chunendra K Sahu

Co-ordinating Institute - IIT - Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Transportation Network Analysis

Subject Co-ordinator - Prof. Hemant Gehlot

Co-ordinating Institute - IIT Kanpur

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

Lecture 1 - Course overview, and optimization formulations of fence and shortest path problems
Lecture 2 - Optimization formulations of shortest path and sensor problems and linear programming
Lecture 3 - Optimization formulations of knapsack, maximum coverage and travelling salesman problems
Lecture 4 - Alternative formulation of travelling salesman problem and introduction to complete matching prob
Lecture 5 - Optimization formulations of complete matching and scheduling problems
Lecture 6 - Continuation of scheduling problem; integer programming
Lecture 7 - Branch-and-bound algorithms
Lecture 8 - Analysis of algorithms and order of growth
Lecture 9 - Continuation of order of growth; polynomial-time algorithms
Lecture 10 - Continuation of polynomial-time algorithms; Dijkstra's algorithm
Lecture 11 - Minimum spanning tree, Kruskal's algorithm and Prim's algorithm
Lecture 12 - Approximation algorithm for travelling salesman problem and local search algorithms
Lecture 13 - Continuation of local search algorithms; vehicle routing problem with splitable demand
Lecture 14 - Continuation of vehicle routing problem with splittable demand; vehicle routing problem with uns
Lecture 15 - Continuation of vehicle routing problem with splittable demand; vehicle routing problem with uns
Lecture 16 - Continuation of genetic algorithms
Lecture 17 - Continuation of genetic algorithms
Lecture 18 - Introduction to traffic assignment (user equilibrium)
Lecture 19 - Continuous optimization (unconstrained)
Lecture 20 - Continuation of unconstrained optimization
Lecture 21 - Continuous optimization (constrained); first-order conditions for single variable problems
Lecture 22 - Continuation of first-order conditions for single variable problems; general first-order conditi
Lecture 23 - Continuation of general first-order conditions; case of nonnegativity and linear equality constr
Lecture 24 - Sufficiency conditions and user equilibrium as an optimization problem
Lecture 25 - Equivalency and uniqueness conditions
Lecture 26 - System Optimization
Lecture 27 - Continuation of system optimization; Braess's paradox
Lecture 28 - Price of anarchy and optimization algorithms (golden section method)
Lecture 29 - Bisection method and convex combinations method

NPTEL Video Course - Civil Engineering - NOC:Stability of Structures

Subject Co-ordinator - Prof. Sudib Kumar Mishra

Co-ordinating Institute - IIT Kanpur

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

NPTEL Video Course - Civil Engineering - NOC:Earthquake Geology: A Tool for Seismic Hazard Assessment

Subject Co-ordinator - Prof. Javed N Malik

Co-ordinating Institute - IIT Kanpur

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

NPTEL Video Course - Civil Engineering - Advanced Foundation Engineering

Subject Co-ordinator - Dr. Kousik Deb

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Reinforced Retaining Wall
Lecture 31 - Seismic Design of Retaining Wall
Lecture 32 - Seismic Design of Retaining Walls (Continued...)
Lecture 33 - Soil - Foundation Interaction
Lecture 34 - Soil - Foundation Interaction (Continued...)
Lecture 35 - Soil - Foundation Interaction (Continued...)
Lecture 36 - Soil - Foundation Interaction (Continued...)
Lecture 37 - Soil - Foundation Interaction (Continued...)
Lecture 38 - Soil - Foundation Interaction (Continued...)
Lecture 39 - Soil - Foundation Interaction (Continued...)
Lecture 40 - Soil - Foundation Interaction (Continued...)

NPTEL Video Course - Civil Engineering - Ground Water Hydrology

Subject Co-ordinator - Dr. Anirban Dhar, Dr. V.R. Desaai

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Radiation method of logging (Continued...); Temperature/caliper/fluid conductivity/fluid velocit
Lecture 31 - Saline Water Intrusion in Aquifers
Lecture 32 - Saline Water Intrusion in Aquifers
Lecture 33 - Saline Water Intrusion in Aquifers
Lecture 34 - Saline Water Intrusion in Aquifers
Lecture 35 - Modeling and Management of Ground Water
Lecture 36 - Modeling and Management of Ground Water
Lecture 37 - Modeling and Management of Ground Water
Lecture 38 - Modeling and Management of Ground Water
Lecture 39 - Modeling and Management of Ground Water
Lecture 40 - Modeling and Management of Ground Water

NPTEL Video Course - Civil Engineering - Numerical Methods in Civil Engineering

Subject Co-ordinator - Dr. A. Deb

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - Probability Methods in Civil Engineering

Subject Co-ordinator - Dr. Rajib Maity

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Introduction to Copulas (Continued...)
Lecture 31 - Probability Models using Normal Distribution
Lecture 32 - Probability Models using Log Normal and Exponential Distribution
Lecture 33 - Probability Models using Gamma and Extreme Value Distribution
Lecture 34 - Probability Models using Discrete Probability Distributions
Lecture 35 - Sampling Distribution and Parameter Estimation
Lecture 36 - Sampling Distribution and Parameter Estimation (Continued...)
Lecture 37 - Hypothesis Testing
Lecture 38 - Goodness - of - fit tests
Lecture 39 - Regression Analyses and Correlation
Lecture 40 - Regression Analyses and Correlation (Continued...)

NPTEL Video Course - Civil Engineering - Design of Reinforced Concrete Structures

Subject Co-ordinator - Prof. N. Dhang

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Deflection of RC Beams

NPTEL Video Course - Civil Engineering - Engineering Geology

Subject Co-ordinator - Dr. Debasis Roy

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Plate Tectonics
Lecture 31 - Plate Tectonics - 2 and Earthquake
Lecture 32 - Earthquake Hazard Assessment
Lecture 33 - Geologic Hazards - Seismicity and Volcanism
Lecture 34 - Geologic Hazards - Shoreline Processes
Lecture 35 - Geologic Hazards - Shoreline Processes
Lecture 36 - Geologic Hazards - Landslide Hazards - Zoning
Lecture 37 - Geologic Hazards Subsidence , Collapsible Soils
Lecture 38 - Preparation of Geologic Sections
Lecture 39 - Index testing of soil & rocks
Lecture 40 - Identification of minerals and rock samples

NPTEL Video Course - Civil Engineering - Introduction to Transportation Engineering

Subject Co-ordinator - Dr. K.S. Reddy, Dr. Bhargab Maitra

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Pavement Materials - IV
Lecture 31 - Pavement Materials - V
Lecture 32 - Design of Bituminous Mixes - I
Lecture 33 - Design of Bituminous Mixes - II
Lecture 34 - Analysis of Flexible Pavements
Lecture 35 - Analysis of Concrete Pavements
Lecture 36 - Flexible Pavement Design Indian Roads Congress
Lecture 37 - Flexible Pavement Design AASHTO Method - 1993
Lecture 38 - Concrete Pavement Design Indian Congress Method
Lecture 39 - Concrete Pavement Design PCA and AASHTO Methods
Lecture 40 - Pavement Evaluation and Rehabilitation
Lecture 41 - Overlay Design - IRC Method

NPTEL Video Course - Civil Engineering - Strength of Materials

Subject Co-ordinator - Prof. S.K. Bhattacharyya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Deflection of Beams - I
Lecture 31 - Deflection of Beams - II
Lecture 32 - Deflection of Beams - III
Lecture 33 - Deflection of Beams - IV
Lecture 34 - Combined Stresses - I
Lecture 35 - Combined Stresses - II
Lecture 36 - Combined Stresses - III
Lecture 37 - Stability of Columns - I
Lecture 38 - Stability of Columns - II
Lecture 39 - Springs - I
Lecture 40 - Springs - II

NPTEL Video Course - Civil Engineering - NOC:Probability Methods in Civil Engineering

Subject Co-ordinator - Dr. Rajib Maity

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Visual Semiotics for Visual Communication

Subject Co-ordinator - Prof. Mainak Ghosh

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Life Cycle Assessment

Subject Co-ordinator - Prof. Brajesh Kumar Dubey

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Green Sustainable Materials (Continued...)
Lecture 31 - Design for Sustainability
Lecture 32 - Design for Sustainability (Continued...)
Lecture 33 - Design for Sustainability (Continued...)
Lecture 34 - Sustainable Engineering Design Principles
Lecture 35 - Sustainable Engineering Design Principles (Continued...)
Lecture 36 - Summary and Case Studies
Lecture 37 - Summary and Case Studies (Continued...)
Lecture 38 - Summary and Case Studies (Continued...)
Lecture 39 - Tutorial I
Lecture 40 - Tutorial II

NPTEL Video Course - Civil Engineering - NOC:Integrated Waste Management for a Smart City

Subject Co-ordinator - Prof. Brajesh Kumar Dubey

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Computational Hydraulics

Subject Co-ordinator - Dr. Anirban Dhar

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Algebraic Equation
Lecture 31 - One-Dimensional Flow
Lecture 32 - Steady Two-Dimensional Flow
Lecture 33 - Unsteady Two-Dimensional Flow using Finite Difference Method
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40 - Steady Channel Flow
Lecture 41 - Steady Channel Flow
Lecture 42 - Steady Channel Flow
Lecture 43 - Steady Channel Flow
Lecture 44
Lecture 45
Lecture 46
Lecture 47
Lecture 48
Lecture 49 - Unsteady Flow in Pipes
Lecture 50 - Surface Water and Ground Water Interaction
Lecture 51 - Course Summary

NPTEL Video Course - Civil Engineering - NOC:Design of Steel Structures

Subject Co-ordinator - Prof. Damodar Maity

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Design Strength of Compression Members
Lecture 31 - Compressive Strength
Lecture 32 - Compressive Strength of Angle Struts
Lecture 33 - Compressive Strength of Double Angles
Lecture 34 - Design of Compression Members
Lecture 35 - Design of Builtup Compression Members
Lecture 36 - Lacing Systems
Lecture 37 - Design of Lacing Systems
Lecture 38 - Connection Design of Lacing Systems
Lecture 39 - Design of Double Lacing System
Lecture 40 - Batten Plates
Lecture 41 - Design of Batten Plates using Bolt Connection
Lecture 42 - Design of Batten Plates using Weld Connection
Lecture 43 - Design of Column Splices
Lecture 44 - Design of Column Splices due to Shear
Lecture 45 - Introduction to Flexural Members
Lecture 46 - Failure Modes of Flexural Members
Lecture 47 - Laterally Supported Beams
Lecture 48 - Design of Laterally Supported Beams
Lecture 49 - Laterally Supported Beams with High Shear
Lecture 50 - Laterally Unsupported Beams
Lecture 51 - Strength Calculation of Laterally Unsupported Beams
Lecture 52
Lecture 53
Lecture 54
Lecture 55
Lecture 56
Lecture 57
Lecture 58 - Worked out Example for Gantry Girder
Lecture 59 - Slab Base
Lecture 60 - Design of Slab Base
Lecture 61 - Eccentrically Loaded Base Plate
Lecture 62 - Gusset Base
Lecture 63 - Design of Gusset Base

NPTEL Video Course - Civil Engineering - NOC:Reinforced Concrete Road Bridges

Subject Co-ordinator - Prof. Nirjhar Dhang

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Structural Analysis - I

Subject Co-ordinator - Prof. Amit Shaw

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Influence Line Diagram and moving Loads (Continued...)
Lecture 31 - Influence Line Diagram and moving Loads (Continued...)
Lecture 32 - Influence Line Diagram and moving Loads (Continued...)
Lecture 33 - Analysis of Statically Indeterminate Structures
Lecture 34 - Analysis of Statically Indeterminate Structures (Continued...)
Lecture 35 - Analysis of Statically Indeterminate Structures (Continued...)
Lecture 36 - Analysis of Statically Indeterminate Structures (Continued...)
Lecture 37 - Analysis of Statically Indeterminate Structures (Continued...)
Lecture 38 - Analysis of Statically Indeterminate Structures
Lecture 39 - Analysis of Statically Indeterminate Structures
Lecture 40 - Analysis of Statically Indeterminate Structures
Lecture 41 - Analysis of Statically Indeterminate Structures
Lecture 42 - Analysis of Statically Indeterminate Structures by Force Method
Lecture 43 - Analysis of Statically Indeterminate Structures by Force Method (Continued...)
Lecture 44 - Analysis of Statically Indeterminate Structures by Force Method (Continued...)
Lecture 45 - Analysis of Statically Indeterminate Structures by Force Method (Continued...)
Lecture 46 - Analysis of Statically Indeterminate Structures by Force Method (Continued...)
Lecture 47 - Analysis of Indeterminate Structures by Displacement Methods
Lecture 48 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 49 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 50 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 51 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 52 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 53 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 54 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 55 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)
Lecture 56 - Analysis of Indeterminate Structures by Displacement Methods (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Soil Mechanics, Geotechnical Engineering-I

Subject Co-ordinator - Prof. Dilip Kumar Baidya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Shear Strength (Continued...)
Lecture 31 - Shear Strength (Continued...)
Lecture 32 - Shear Strength (Continued...)
Lecture 33 - Shear Strength (Continued...)
Lecture 34 - Shear Strength (Continued...)
Lecture 35 - Shear Strength (Continued...)
Lecture 36 - Shear Strength (Continued...)
Lecture 37 - Compressibility Of Soils
Lecture 38 - Compressibility Of Soils (Continued...)
Lecture 39 - Compressibility Of Soils (Continued...)
Lecture 40 - Compressibility Of Soils (Continued...)
Lecture 41 - Compressibility Of Soils (Continued...)
Lecture 42 - Compressibility Of Soils (Continued...)
Lecture 43 - Compressibility Of Soils (Continued...)
Lecture 44 - Compressibility And Settlement Of Soil
Lecture 45 - Compressibility And Settlement (Continued...)
Lecture 46 - Compressibility And Secondary Compression
Lecture 47 - Earth Pressure
Lecture 48 - Earth Pressure (Continued...)
Lecture 49 - Earth Pressure (Continued...)
Lecture 50 - Earth Pressure (Continued...)
Lecture 51 - Earth Pressure (Continued...)
Lecture 52 - Earth Pressure (Continued...)
Lecture 53 - Earth Pressure (Continued...)
Lecture 54 - Earth Pressure (Continued...)
Lecture 55 - Stability Of Slopes
Lecture 56 - Stability Of Slopes (Continued...)
Lecture 57 - Stability Of Slopes (Continued...)
Lecture 58 - Slope Stability
Lecture 59 - Slope Stabilty
Lecture 60 - Concluding Remarks
Lecture 61 - Live Session

NPTEL Video Course - Civil Engineering - NOC:Electronic Waste Management - Issues and Challenges

Subject Co-ordinator - Prof. Brajesh Kumar Dubey

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - E-Waste Overview
Lecture 2 - E-waste Overview
Lecture 3 - E-waste Overview
Lecture 4 - E-waste Management Overview
Lecture 5 - E-waste Management Overview
Lecture 6 - Environmental and Public Health Issues
Lecture 7 - Environmental and Public Health Issues (Continued...)
Lecture 8 - E-waste Health Risk Assessment
Lecture 9 - Environmental and Public Health Issues (Continued...)
Lecture 10 - Environmental and Public Health Issues (Continued...)
Lecture 11 - Recovery of Materials from E-Waste
Lecture 12 - Metal Recovery Process
Lecture 13 - Recovery of Metals from Electronic Waste
Lecture 14 - Recovery of Metals from Electronic Waste
Lecture 15 - Recovery of Metals from Electronic Waste
Lecture 16 - E-waste Management
Lecture 17 - E-waste Management
Lecture 18 - E-waste Management
Lecture 19 - Electronics and LCA
Lecture 20 - LCA applications for Electronics
Lecture 21 - Tutorial-I
Lecture 22 - Tutorial-II

NPTEL Video Course - Civil Engineering - NOC:Mineral Resources - Geology, Exploration, Economics and Environm

Subject Co-ordinator - Prof. M.K.Panigrahi

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Indian Mineral Deposits (Continued...)
Lecture 31 - Indian Mineral Deposits (Continued...)
Lecture 32 - Mineral Exploration
Lecture 33 - Mineral Exploration (Continued...)
Lecture 34 - Mineral Exploration (Continued...)
Lecture 35 - Mineral Exploration (Continued...)
Lecture 36 - Mineral Exploration (Continued...)
Lecture 37 - Mineral Exploration (Continued...)
Lecture 38 - Mineral Exploration (Continued...)
Lecture 39 - Mineral Exploration (Continued...)
Lecture 40 - Mineral Exploration (Continued...)
Lecture 41 - Mineral Exploration (Continued...)
Lecture 42 - Mineral Exploration (Continued...)
Lecture 43 - Mineral Exploration (Continued...)
Lecture 44 - Mineral Exploration (Continued...)
Lecture 45 - Mineral Inventory Estimation
Lecture 46 - Mineral Inventory Estimation (Continued...)
Lecture 47 - Mineral Inventory Estimation (Continued...)
Lecture 48 - Mineral Inventory Estimation (Continued...)
Lecture 49 - Geostatistical Method of Mineral Inventory Estimation
Lecture 50 - Geostatistical Method of Mineral Inventory Estimation (Continued...)
Lecture 51 - Mineral Economics
Lecture 52 - Mineral Economics (Continued...)
Lecture 53 - Mineral Economics (Continued...)
Lecture 54 - Mineral Economics (Continued...)
Lecture 55 - Mineral Economics (Continued...)
Lecture 56 - Environmental Impact of Mineral Resource Exploitation
Lecture 57 - Environmental Impact of Mineral Resource Exploitation (Continued...)
Lecture 58 - Environmental Impact of Mineral Resource Exploitation (Continued...)
Lecture 59 - Environmental Impact of Mineral Resource Exploitation (Continued...)
Lecture 60 - Environmental Impact of Mineral Resource Exploitation (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Introduction to Mineral Processing

Subject Co-ordinator - Prof. Arun Kumar Majumder

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Industrial Screening (Continued...)
Lecture 31 - Industrial Screening (Continued...)
Lecture 32 - Industrial Screening (Continued...)
Lecture 33 - Industrial Screening (Continued...)
Lecture 34 - Industrial Screening (Continued...)
Lecture 35 - Movement of Solids in Fluids
Lecture 36 - Movement of Solids in Fluids (Continued...)
Lecture 37 - Movement of Solids in Fluids (Continued...)
Lecture 38 - Classifier
Lecture 39 - Classifier (Continued...)
Lecture 40 - Hydrocyclone
Lecture 41 - Hydrocyclone (Continued...)
Lecture 42 - Hydrocyclone (Continued...)
Lecture 43 - Hydrocyclone (Continued...)
Lecture 44 - Hydrocyclone (Continued...)
Lecture 45 - Mass Balancing
Lecture 46 - Mass Balancing (Continued...)
Lecture 47 - Closed-Circuit Grinding
Lecture 48 - Gravity Concentration
Lecture 49 - Gravity Concentration (Continued...)
Lecture 50 - Gravity Concentration (Continued...)
Lecture 51 - Gravity Concentration (Continued...)
Lecture 52 - Gravity Concentration (Continued...)
Lecture 53 - Flotation
Lecture 54 - Flotation (Continued...)
Lecture 55 - Flotation (Continued...)
Lecture 56 - Flotation Chemicals
Lecture 57 - Flotation Chemicals (Continued...)
Lecture 58 - Flotation Chemicals (Continued...)
Lecture 59 - Flotation Machines
Lecture 60 - Flotation Machines (Continued...)
Lecture 61 - Magnetic Separation
Lecture 62 - Electric Separation
Lecture 63 - Flow Sheets
Lecture 64 - Flow Sheets (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Foundation Engineering

Subject Co-ordinator - Prof. Koushik Deb

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Theory of Elasticity

Subject Co-ordinator - Prof. Biswanath Banjerjee, Prof. Amit Shaw

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Solution of Boundary Value Problems (Continued...)
Lecture 31 - Solution of Boundary Value Problems (Continued...)
Lecture 32 - Solution of Boundary Value Problems (Continued...)
Lecture 33 - Problems in Flexure
Lecture 34 - Problems in Flexure (Continued...)
Lecture 35 - Problems in Flexure (Continued...)
Lecture 36 - Problems in Flexure (Continued...)
Lecture 37 - Problems in Flexure (Continued...)
Lecture 38 - Boundary Value Problems in Elasticity
Lecture 39 - Boundary Value Problems in Elasticity (Continued...)
Lecture 40 - Boundary Value Problems in Elasticity (Continued...)
Lecture 41 - Boundary Value Problems in Elasticity (Continued...)
Lecture 42 - Boundary Value Problems in Elasticity (Continued...)
Lecture 43 - Complex Variable Method
Lecture 44 - Complex Variable Method (Continued...)
Lecture 45 - Complex Variable Method (Continued...)
Lecture 46 - Complex Variable Method (Continued...)
Lecture 47 - Complex Variable Method (Continued...)
Lecture 48 - Complex Variable Method (Continued...)
Lecture 49 - Thermoelasticity
Lecture 50 - Thermoelasticity (Continued...)
Lecture 51 - Thermoelasticity (Continued...)
Lecture 52 - Thermoelasticity (Continued...)
Lecture 53 - Thermoelasticity (Continued...)
Lecture 54 - Photo-Elasticity
Lecture 55 - Photo-Elasticity (Continued...)
Lecture 56 - Photo-Elasticity (Continued...)
Lecture 57 - Photo-Elasticity (Continued...)
Lecture 58 - Photo-Elasticity (Continued...)
Lecture 59 - Introduction to Nonlinear Elasticity
Lecture 60 - Closure

NPTEL Video Course - Civil Engineering - NOC:Wastewater Treatment and Recycling

Subject Co-ordinator - Prof. Manoj Kumar Tiwari

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Biological Treatment of Wastewater
Lecture 31 - Biological Treatment of Wastewater
Lecture 32 - Biological Treatment of Wastewater
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38 - Introduction to Sludge Management
Lecture 39 - Wastewater Sludge
Lecture 40 - Wastewater Sludge Processing and Treatment
Lecture 41 - Wastewater Sludge Processing and Treatment
Lecture 42 - Wastewater Sludge Processing and Treatment
Lecture 43 - Tertiary (Advanced) Treatment of Wastewater
Lecture 44 - Tertiary Treatment
Lecture 45 - Tertiary Treatment
Lecture 46 - Tertiary Treatment
Lecture 47 - Tertiary Treatment
Lecture 48 - Wastewater Treatment Systems
Lecture 49 - Wastewater Treatment Systems
Lecture 50 - Alternate Wastewater Treatment Systems
Lecture 51 - Alternate Wastewater Treatment Systems
Lecture 52
Lecture 53
Lecture 54
Lecture 55
Lecture 56
Lecture 57 - Wastewater Reuse and Recycling
Lecture 58 - Decision Making in Wastewater Reuse and Recycling
Lecture 59 - Public Acceptance for Recycled Water Use
Lecture 60 - Wastewater Reuse and Recycling
Lecture 61 - Course Summary
Lecture 62 - Course Summary (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Fluid Inclusion in Mineral Principles, Methodology, Practice and

Subject Co-ordinator - Prof. M.K.Panigrahi

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Application of fluid Inclusion to Deformation, Metamorphism (Continued...)
Lecture 31 - Analysis of Fluid Inclusion
Lecture 32 - Analysis of Fluid Inclusion (Continued...)
Lecture 33 - Analysis of Fluid Inclusion (Continued...)
Lecture 34 - Analysis of Fluid Inclusion (Continued...)
Lecture 35 - Analysis of Fluid Inclusion (Continued...)
Lecture 36 - Computer Software for Fluid Inclusion Data
Lecture 37 - Computer Software for Fluid Inclusion Data (Continued...)
Lecture 38 - Computer Software for Fluid Inclusion Data (Continued...)
Lecture 39 - Review of the Course
Lecture 40 - Review of the Course (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Matrix Method of Structural Analysis

Subject Co-ordinator - Prof. Biswanath Banjerjee, Prof. Amit Shaw

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Plastic Waste Management

Subject Co-ordinator - Prof. Brajesh Kumar Dubey

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Geotechnical Engineering-II Foundation Engineering

Subject Co-ordinator - Prof. Dilip Kumar Baidya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Earth Pressure Theories (Continued...)
Lecture 31 - Earth Pressure Theories (Continued...)
Lecture 32 - Earth Pressure Theories (Continued...)
Lecture 33 - Stability analysis of earth retaining wall
Lecture 34 - Stability analysis of earth retaining wall (Continued...)
Lecture 35 - Stability analysis of earth retaining wall (Continued...)
Lecture 36 - Stability of earth retaining wall
Lecture 37 - Pile foundation
Lecture 38 - Pile foundation (Continued...)
Lecture 39 - Pile foundation (Continued...)
Lecture 40 - Pile foundation (Continued...)
Lecture 41 - Pile foundation (Continued...)
Lecture 42 - Pile foundation (Continued...)
Lecture 43 - Pile foundation (Continued...)
Lecture 44 - Pile foundation (Continued...)
Lecture 45 - Pile foundation (Continued...)
Lecture 46 - Pile foundation (Continued...)
Lecture 47 - Sheet pile wall
Lecture 48 - Sheet pile wall (Continued...)
Lecture 49 - Anchor bulkhead
Lecture 50 - Anchor bulkhead (Continued...)
Lecture 51 - Deep excavation
Lecture 52 - Deep excavation (Continued...)
Lecture 53 - Introduction to machine foundation
Lecture 54 - Introduction to machine foundation (Continued...)
Lecture 55 - Introduction to machine foundation (Continued...)
Lecture 56 - Introduction to machine foundation (Continued...)
Lecture 57 - Introduction to machine foundation (Continued...)
Lecture 58 - Introduction to machine foundation (Continued...)
Lecture 59 - Introduction to machine foundation (Continued...)
Lecture 60 - Summary

NPTEL Video Course - Civil Engineering - NOC:Mass, Momentum and Energy Balances in Engineering Analysis

Subject Co-ordinator - Prof. Pavitra Sandilya

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Soil Structure Interaction

Subject Co-ordinator - Prof. Koushik Deb

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Beams on Elastic Foundation (Continued...)
Lecture 31 - Beams on Elastic Foundation (Continued...)
Lecture 32 - Beams on Elastic Foundation (Continued...)
Lecture 33 - Beams on Elastic Foundation (Continued...)
Lecture 34 - Beams on Elastic Foundation (Continued...)
Lecture 35 - Beams on Elastic Foundation (Continued...)
Lecture 36 - Beams on Elastic Foundation (Continued...)
Lecture 37 - Beams on Elastic Foundation (Continued...)
Lecture 38 - Beams on Elastic Foundation (Continued...)
Lecture 39 - Beams on Elastic Foundation (Continued...)
Lecture 40 - Beams on Elastic Foundation (Continued...)
Lecture 41 - Plates on Elastic Foundation
Lecture 42 - Plates on Elastic Foundation (Continued...)
Lecture 43 - Plates on Elastic Foundation (Continued...)
Lecture 44 - Plates on Elastic Foundation (Continued...)
Lecture 45 - Use of Finite Difference Method for Soil Structure Interaction Problems
Lecture 46 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 47 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 48 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 49 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 50 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 51 - Use of Finite Difference Method for Soil Structure Interaction Problems (Continued...)
Lecture 52 - Soil Structure Interaction for Pile Foundation
Lecture 53 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 54 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 55 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 56 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 57 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 58 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 59 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 60 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 61 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 62 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 63 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 64 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 65 - Soil Structure Interaction for Pile Foundation (Continued...)
Lecture 66 - Soil Structure Interaction for Pile Foundation (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Water Supply Engineering

Subject Co-ordinator - Prof. Manoj Kumar Tiwari

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Coagulation and Flocculation
Lecture 31 - Filtration Theory and Slow Sand Filters
Lecture 32 - Rapid Sand Filter
Lecture 33 - Rapid Sand Filters and Pressure Filters
Lecture 34 - Practice Problems Coagulation Flocculation and Filtration
Lecture 35 - Disinfection Basic
Lecture 36 - Chlorination
Lecture 37 - Other Disinfection Method
Lecture 38 - Sluge Management
Lecture 39 - Advanced and Alternate Treatment Systems
Lecture 40 - Advanced Oxidation Processes and Membrane Process
Lecture 41 - Practice Problems
Lecture 42 - Basic of Water Distribution System
Lecture 43 - Water Distribution Networks
Lecture 44 - Analysis of Water Distribution Networks
Lecture 45 - Problems onPipe Flow and Water Distribution Network
Lecture 46 - Water Losses in Water Distribution System
Lecture 47 - Water Balance for Water Loss Assessment and Performance Indicators
Lecture 48 - Water Loss Detection and Control
Lecture 49 - Practice Problems on Water Audit and Water Loss Estimation
Lecture 50 - Continuous (24*7) water supply systems
Lecture 51 - District metered area (DMA) for zoning in water distribution networks
Lecture 52 - Software for water distribution networks design and analysis
Lecture 53 - Demonstration on EPANET and GEMS
Lecture 54 - Concept of smart water supply systems
Lecture 55 - Smart Metering and sensing devices
Lecture 56 - IoT and Automation in Water Supply
Lecture 57 - Example of Automation and Smart Water Supply Systems
Lecture 58 - Economics of Water Supply Systems
Lecture 59 - Capital and Operational Cost of Water Supply System
Lecture 60 - Pricing Waters
Lecture 61 - Pricing Waters (Continued...)
Lecture 62 - Case studies and Practice Problem on Water Pricing

NPTEL Video Course - Civil Engineering - NOC:Geo Spatial Analysis in Urban Planning

Subject Co-ordinator - Prof. Saikat Kumar Paul

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Hydraulic Engineering

Subject Co-ordinator - Prof. Mohammad Saud Afzal

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Introduction to Open Channel Flow and Uniform Flow (Continued...)
Lecture 31 - Introduction to Open Channel Flow and Uniform Flow (Continued...)
Lecture 32 - Introduction to Open Channel Flow and Uniform Flow (Continued...)
Lecture 33 - Introduction to Open Channel Flow and Uniform Flow (Continued...)
Lecture 34 - Non-uniform flow and hydraulic jump
Lecture 35 - Non-uniform flow and hydraulic jump (Continued...)
Lecture 36 - Non-uniform flow and hydraulic jump (Continued...)
Lecture 37 - Non-uniform flow and hydraulic jump (Continued...)
Lecture 38 - Pipe flow
Lecture 39 - Pipe flow (Continued...)
Lecture 40 - Pipe flow (Continued...)
Lecture 41 - Pipe flow (Continued...)
Lecture 42 - Pipe flow (Continued...)
Lecture 43 - Pipe networks
Lecture 44 - Pipe networks (Continued...)
Lecture 45 - Pipe networks (Continued...)
Lecture 46 - Pipe networks (Continued...)
Lecture 47 - Pipe networks (Continued...)
Lecture 48 - Viscous fluid flow
Lecture 49 - Viscous fluid flow (Continued...)
Lecture 50 - Viscous fluid flow (Continued...)
Lecture 51 - Viscous fluid flow (Continued...)
Lecture 52 - Viscous fluid flow (Continued...)
Lecture 53 - Viscous fluid flow (Continued...)
Lecture 54 - Computational fluid dynamics
Lecture 55 - Computational fluid dynamics (Continued...)
Lecture 56 - Computational fluid dynamics (Continued...)
Lecture 57 - Computational fluid dynamics (Continued...)
Lecture 58 - Computational fluid dynamics (Continued...)
Lecture 59 - Introduction to wave mechanics
Lecture 60 - Introduction to wave mechanics (Continued...)
Lecture 61 - Introduction to wave mechanics (Continued...)
Lecture 62 - Introduction to wave mechanics (Continued...)
Lecture 63 - Introduction to wave mechanics (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Introduction to Multimodal Urban Transportation Systems

Subject Co-ordinator - Prof. Arkopal Kishore Goswami

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Overview of urban transportation: Urbanization and Transport
Lecture 2 - Overview of urban transportation: Key issues in urban transportation
Lecture 3 - Overview of urban transportation: Challenges in urban transportation
Lecture 4 - Overview of urban transportation: Travel demand modelling overview
Lecture 5 - Overview of urban transportation: Vehicular Level of Service (LOS) overview
Lecture 6 - Public Transportation: Introduction to public transportation
Lecture 7 - Public Transportation: Basic operating elements of public transportation
Lecture 8 - Public Transportation: Basic operating elements of public transportation (Continued...)
Lecture 9 - Public Transportation: Bus Transportation
Lecture 10 - Public Transportation: Bus Transportation (Continued...)
Lecture 11 - Public Transportation: Financing public transportation
Lecture 12 - Public Transportation: Transit marketing
Lecture 13 - Public Transportation: Rail transportation
Lecture 14 - Public Transportation: Intermediate Public Transportation
Lecture 15 - Public Transportation: Measuring performance of transit systems
Lecture 16 - Public Transportation: Advanced operation concepts of public transportation
Lecture 17 - Public Transportation: Bus and Rail Transit Capacity
Lecture 18 - Public Transportation: Bus and Rail Transit Capacity (Continued...)
Lecture 19 - Public Transportation: Station Capacity
Lecture 20 - Public Transportation: Transit Stop Location
Lecture 21 - Non-motorised Transportation (NMT) Planning: Introduction to NMT Systems
Lecture 22 - Non-motorised Transportation (NMT) Planning: Assessing existing NMT scenario
Lecture 23 - Non-motorised Transportation (NMT) Planning: Data collection and analysis in NMT Planning
Lecture 24 - Non-motorised Transportation (NMT) Planning: Complementarity and Selection of Interventions
Lecture 25 - Non-motorised Transportation (NMT) Planning: Alternative Selection through Economic & Financial
Lecture 26 - Non-Motorised Transportation (NMT) Planning: Basic NMT Characteristics
Lecture 27 - Non-Motorised Transportation (NMT) Planning: Pedestrian Data Collection and Flow Characteristics
Lecture 28 - Non-Motorised Transportation (NMT) Planning: Pedestrian Flow models
Lecture 29 - Non-Motorised Transportation (NMT) Planning: Pedestrian flow characteristics on facilities

Lecture 30 - Non-Motorised Transportation (NMT) Planning: Pedestrian Level of Service (PLOS) based on Flow mo
Lecture 31 - Non-Motorised Transportation (NMT) Planning: Other types of Pedestrian Level of Service (PLOS)
Lecture 32 - Non-Motorised Transportation (NMT) Planning: HCM 2010 Methodology for PLOS
Lecture 33 - Non-Motorised Transportation (NMT) Planning: HCM 2010 Methodology for PLOS (Continued...)
Lecture 34 - Non-Motorised Transportation (NMT) Planning: Bicycle Facilities and Level of Service (BLOS)
Lecture 35 - Non-Motorised Transportation (NMT) Planning: BLOS and Bicycle Compatibility Index (BCI)
Lecture 36 - Non-Motorised Transportation (NMT) Planning: NMT Design Principles
Lecture 37 - Non-Motorised Transportation (NMT) Planning: Design of Pedestrian Infrastructure
Lecture 38 - Non-Motorised Transportation (NMT) Planning: Design of Pedestrian Infrastructure (Continued...)
Lecture 39 - Non-Motorised Transportation (NMT) Planning: Design of Cycling Infrastructure
Lecture 40 - Non-Motorised Transportation (NMT) Planning: Design of Cycling Infrastructure (Continued...)
Lecture 41 - Urban Transport and Sustainability: Travel Demand Management (TDM) overview
Lecture 42 - Urban Transport and Sustainability: Push measures cases
Lecture 43 - Urban Transport and Sustainability: Pull measure cases
Lecture 44 - Urban Transport and Sustainability: Parking Studies
Lecture 45 - Urban Transport and Sustainability: Transit Oriented Development (TOD)
Lecture 46 - Urban Transport and Sustainability: Introduction to Intelligent Transportation Systems (ITS)
Lecture 47 - Urban Transport and Sustainability: ITS components, applications and communication
Lecture 48 - Urban Transport and Sustainability: ITS Architecture
Lecture 49 - Urban Transport and Sustainability: Electronic Toll Collection (ETC)
Lecture 50 - Urban Transport and Sustainability: Public Bicycle Sharing (PBS) System with ITS
Lecture 51 - Urban Transport and Sustainability: Multimodal transportation (MMT) environment
Lecture 52 - Urban Transport and Sustainability: Multimodal Level of Service (MMLOS)
Lecture 53 - Urban Transport and Sustainability: Multimodal Level of Service (MMLOS) (Continued...)
Lecture 54 - Urban Transport and Sustainability: Design of multimodal transfer facilities
Lecture 55 - Urban Transport and Sustainability: Park & Ride (P&R) Facility Planning
Lecture 56 - Urban Transport and Sustainability: An Introduction to Pedestrian Road Safety and associated Ris
Lecture 57 - Urban Transport and Sustainability: Road crash estimation and elements of predictive methods
Lecture 58 - Urban Transport and Sustainability: Predicting Vehicle-Pedestrian and Vehicle-Bicycle conflicts
Lecture 59 - Urban Transport and Sustainability: Environmental Concerns of Urban Transport
Lecture 60 - Urban Transport and Sustainability: Sustainable strategies for Urban Transportation

NPTEL Video Course - Civil Engineering - NOC:Advanced Foundation Engineering

Subject Co-ordinator - Prof. Kousik Deb

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Beams on Elastic Foundation - IV
Lecture 31 - Beams on Elastic Foundation - V
Lecture 32 - Beams on Elastic Foundation - VI
Lecture 33 - Beams on Elastic Foundation - VII
Lecture 34 - Beams on Elastic Foundation - VIII
Lecture 35 - Beams on Elastic Foundation - IX
Lecture 36 - Design of Shallow Foundation - I
Lecture 37 - Design of Shallow Foundation - II
Lecture 38 - Design of Shallow Foundation - III
Lecture 39 - Design of Shallow Foundation - IV
Lecture 40 - Design of Shallow Foundation - V
Lecture 41 - Pile Foundation : Under Compressive Load - I
Lecture 42 - Pile Foundation : Under Compressive Load - II
Lecture 43 - Pile Foundation : Under Compressive Load - III
Lecture 44 - Pile Foundation : Under Compressive Load - IV
Lecture 45 - Pile Foundation : Under Compressive Load - V
Lecture 46 - Pile Foundation : Under Compressive Load - VI
Lecture 47 - Pile Foundation : Under Compressive Load - VII
Lecture 48 - Pile Foundation : Under Compressive Load - VIII
Lecture 49 - Pile Foundation : Under Compressive Load - IX
Lecture 50 - Pile Foundation : Under Compressive Load - X
Lecture 51 - Pile Foundation : Under Lateral Load and Uplift - I
Lecture 52 - Pile Foundation : Under Lateral Load and Uplift - II
Lecture 53 - Pile Foundation : Under Lateral Load and Uplift - III
Lecture 54 - Pile Foundation : Under Lateral Load and Uplift - IV
Lecture 55 - Pile Foundation : Under Lateral Load and Uplift - V
Lecture 56 - Pile Foundation : Under Lateral Load and Uplift - VI
Lecture 57 - Pile Foundation : Under Lateral Load and Uplift - VII
Lecture 58 - Pile Foundation : Under Lateral Load and Uplift - VIII
Lecture 59 - Pile Foundation : Under Lateral Load and Uplift - IX
Lecture 60 - Well Foundation - I
Lecture 61 - Well Foundation - II
Lecture 62 - Well Foundation - III
Lecture 63 - Well Foundation - IV
Lecture 64 - Well Foundation - V
Lecture 65 - Well Foundation - VI
Lecture 66 - Well Foundation - VII
Lecture 67 - Well Foundation - VIII
Lecture 68 - Well Foundation - IX

Lecture 69 - Foundations on Difficult Soils - I
Lecture 70 - Foundations on Difficult Soils - II

NPTEL Video Course - Civil Engineering - NOC:Urban Transport Systems Planning

Subject Co-ordinator - Prof. Bhargab Maitra

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Competing Opportunities Model and Linear Programming Approach
Lecture 31 - Factors Influencing Mode Choice and Aggregate Modal Split Models
Lecture 32 - Disaggregate Mode Choice Models - I
Lecture 33 - Disaggregate Mode Choice Models - II
Lecture 34 - Disaggregate Mode Choice Models - III
Lecture 35 - Disaggregate Mode Choice Models - IV
Lecture 36 - Disaggregate Mode Choice Models - V
Lecture 37 - Logit Choice Models - I
Lecture 38 - Logit Choice Models - II
Lecture 39 - Logit Choice Models - III
Lecture 40 - Logit Choice Models - IV
Lecture 41 - Introduction to Traffic Assignment
Lecture 42 - Network Algorithms - I
Lecture 43 - Network Algorithms - II
Lecture 44 - Network Algorithms - III
Lecture 45 - Static assignment models, User Equilibrium
Lecture 46 - User Equilibrium Assignment and System Optimum Assignment
Lecture 47 - Deterministic Traffic Assignment - I
Lecture 48 - Deterministic Traffic Assignment - II
Lecture 49 - Stochastic Traffic Assignment - I
Lecture 50 - Stochastic Traffic Assignment - II and Dynamic Traffic Assignment
Lecture 51 - Land Use and Transportation - I
Lecture 52 - Land Use and Transportation - II
Lecture 53 - Land Use and Transportation - III
Lecture 54 - Land Use and Transportation - IV
Lecture 55 - Urban Goods Movement - I
Lecture 56 - Urban Goods Movement - II
Lecture 57 - Urban Goods Movement - III
Lecture 58 - Urban Goods Movement - IV
Lecture 59 - Activity Based Modelling
Lecture 60 - Big Data, GIS and SDI

NPTEL Video Course - Civil Engineering - NOC:Structural Reliability

Subject Co-ordinator - Prof. Baidurya Bhattacharya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Common Probability Distributions - Part 1
Lecture 31 - Common Probability Distributions - Part 2
Lecture 32 - Common Probability Distributions - Part 3
Lecture 33 - Common Probability Distributions - Part 4
Lecture 34 - Common Probability Distributions - Part 5
Lecture 35 - Common Probability Distributions - Part 6
Lecture 36 - Common Probability Distributions - Part 7
Lecture 37 - Common Probability Distributions - Part 8
Lecture 38 - Common Probability Distributions - Part 9
Lecture 39 - Common Probability Distributions - Part 10
Lecture 40 - Common Probability Distributions - Part 11
Lecture 41 - Common Probability Distributions - Part 12
Lecture 42 - Common Probability Distributions - Part 13
Lecture 43 - Common Probability Distributions - Part 14
Lecture 44 - Common Probability Distributions - Part 15
Lecture 45 - Common Probability Distributions - Part 16
Lecture 46 - Common Probability Distributions - Part 17
Lecture 47 - Common Probability Distributions - Part 18
Lecture 48 - Common Probability Distributions - Part 19
Lecture 49 - Common Probability Distributions - Part 20
Lecture 50 - Joint Probability Distributions - Part 1
Lecture 51 - Joint Probability Distributions - Part 2
Lecture 52 - Joint Probability Distributions - Part 3
Lecture 53 - Joint Probability Distributions - Part 4
Lecture 54 - Joint Probability Distributions - Part 5
Lecture 55 - Joint Probability Distributions - Part 6
Lecture 56 - Joint Probability Distributions - Part 7
Lecture 57 - Joint Probability Distributions - Part 8
Lecture 58 - Joint Probability Distributions - Part 9
Lecture 59 - Joint Probability Distributions - Part 10
Lecture 60 - Joint Probability Distributions - Part 11
Lecture 61 - Joint Probability Distributions - Part 12
Lecture 62 - Joint Probability Distributions - Part 13
Lecture 63 - Joint Probability Distributions - Part 14
Lecture 64 - Joint Probability Distributions - Part 15
Lecture 65 - Joint Probability Distributions - Part 16
Lecture 66 - Joint Probability Distributions - Part 17
Lecture 67 - Joint Probability Distributions - Part 18
Lecture 68 - Joint Probability Distributions - Part 19

Lecture 186 - Capacity Demand Component Reliability - Part 34
Lecture 187 - Capacity Demand Component Reliability - Part 35
Lecture 188 - Capacity Demand Component Reliability - Part 36
Lecture 189 - Capacity Demand Component Reliability - Part 37
Lecture 190 - Capacity Demand Component Reliability - Part 38
Lecture 191 - Capacity Demand Component Reliability - Part 39
Lecture 192 - Capacity Demand Time Component Reliability - Part 1
Lecture 193 - Capacity Demand Time Component Reliability - Part 2
Lecture 194 - Capacity Demand Time Component Reliability - Part 3
Lecture 195 - Capacity Demand Time Component Reliability - Part 4
Lecture 196 - Capacity Demand Time Component Reliability - Part 5
Lecture 197 - Capacity Demand Time Component Reliability - Part 6
Lecture 198 - Capacity Demand Time Component Reliability - Part 7
Lecture 199 - Capacity Demand Time Component Reliability - Part 8
Lecture 200 - Capacity Demand Time Component Reliability - Part 9
Lecture 201 - Capacity Demand Time Component Reliability - Part 10
Lecture 202 - Capacity Demand Time Component Reliability - Part 11
Lecture 203 - Capacity Demand Time Component Reliability - Part 12
Lecture 204 - Capacity Demand Time Component Reliability - Part 13
Lecture 205 - Capacity Demand Time Component Reliability - Part 14
Lecture 206 - Capacity Demand Time Component Reliability - Part 15
Lecture 207 - Capacity Demand Time Component Reliability - Part 16
Lecture 208 - Capacity Demand Time Component Reliability - Part 17
Lecture 209 - Capacity Demand Time Component Reliability - Part 18
Lecture 210 - Capacity Demand Systems Reliability - Part 1
Lecture 211 - Capacity Demand Systems Reliability - Part 2
Lecture 212 - Capacity Demand Systems Reliability - Part 3
Lecture 213 - Capacity Demand Systems Reliability - Part 4
Lecture 214 - Capacity Demand Systems Reliability - Part 5
Lecture 215 - Capacity Demand Systems Reliability - Part 6
Lecture 216 - Capacity Demand Systems Reliability - Part 7
Lecture 217 - Capacity Demand Systems Reliability - Part 8
Lecture 218 - Capacity Demand Systems Reliability - Part 9
Lecture 219 - Capacity Demand Systems Reliability - Part 10
Lecture 220 - Capacity Demand Systems Reliability - Part 11
Lecture 221 - Capacity Demand Systems Reliability - Part 12
Lecture 222 - Capacity Demand Systems Reliability - Part 13
Lecture 223 - Capacity Demand Systems Reliability - Part 14
Lecture 224 - Capacity Demand Systems Reliability - Part 15

NPTEL Video Course - Civil Engineering - NOC:Ground Improvement

Subject Co-ordinator - Prof. Dilip Kumar Baidya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Design Example
Lecture 31 - Preconsolidation
Lecture 32 - Preconsolidation (Continued...)
Lecture 33 - Preconsolidation (Continued...)
Lecture 34 - Preconsolidation (Continued...)
Lecture 35 - Preconsolidation (Continued...)
Lecture 36 - Grouting
Lecture 37 - Grouting (Continued...)
Lecture 38 - Grouting (Continued...)
Lecture 39 - Grouting (Continued...)
Lecture 40 - Grouting (Continued...)
Lecture 41 - Grouting (Continued...)
Lecture 42 - Chemical Stabilisation
Lecture 43 - Chemical Stabilisation (Continued...)
Lecture 44 - Chemical Stabilisation (Continued...)
Lecture 45 - Chemical Stabilisation (Continued...)
Lecture 46 - Soil Nailing
Lecture 47 - Soil Nailing (Continued...)
Lecture 48 - Soil Nailing (Continued...)
Lecture 49 - Soil Nailing (Continued...)
Lecture 50 - Soil Nailing (Continued...)
Lecture 51 - Geosynthetics in Ground Improvement
Lecture 52 - Geosynthetics in Ground Improvement
Lecture 53 - Geosynthetics in Ground Improvement
Lecture 54 - Geosynthetics in Ground Improvement
Lecture 55 - Geosynthetics in Ground Improvement
Lecture 56 - Geosynthetics in Ground Improvement (Continued...)
Lecture 57 - Geosynthetics in Ground Improvement (Continued...)
Lecture 58 - Geosynthetics in Ground Improvement (Continued...)
Lecture 59 - Geosynthetics in Ground Improvement (Continued...)
Lecture 60 - Summary and Concluding Remarks

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing of Leaf Area Index and Primary Productivity

Subject Co-ordinator - Prof. MD Behera

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Rock Mechanics and Tunneling

Subject Co-ordinator - Prof. Debarghya Chakraborty

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Retrofitting and Rehabilitation of Civil Infrastructure

Subject Co-ordinator - Prof. Swati Maitra, Prof. Sriman Bhattacharya

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Anchorage Systems for FRP Strengthening
Lecture 31 - Installation of FRP
Lecture 32 - Design Considerations
Lecture 33 - Design Approach for Flexural Strengthening
Lecture 34 - Design of Flexural Strengthening
Lecture 35 - Design Approach for Shear Strengthening
Lecture 36 - Design of Shear Strengthening
Lecture 37 - Design Approach for Axial Strengthening
Lecture 38 - Design of Axial Strengthening
Lecture 39 - Concepts of Concrete Overlay
Lecture 40 - Distresses in Existing Pavement
Lecture 41 - Evaluation of Pavement
Lecture 42 - Design Considerations for Concrete Overlay
Lecture 43 - Construction of Concrete Overlay
Lecture 44 - Introduction
Lecture 45 - Retrofitting Steps
Lecture 46 - Review of Materials and Test Methods
Lecture 47 - Review of Analysis Method
Lecture 48 - Some aspects of Seismic Retrofitting
Lecture 49 - Introduction
Lecture 50 - A Few Retrofitting Techniques
Lecture 51 - A Few Seismic Retrofitting Techniques
Lecture 52 - Introduction
Lecture 53 - Retrofitting steps and Techniques
Lecture 54 - Retrofitting Techniques for Structural Elements
Lecture 55 - Retrofitting Techniques for structural elements (Continued...)
Lecture 56 - Retrofitting Techniques for structural elements (Continued...)
Lecture 57 - Retrofitting Techniques for structural elements (Continued...)
Lecture 58 - Seismic Strengthening of structural elements
Lecture 59
Lecture 60
Lecture 61
Lecture 62
Lecture 63

NPTEL Video Course - Civil Engineering - NOC:Surface Water Hydrology

Subject Co-ordinator - Prof. Rajib Maity

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Traffic Engineering

Subject Co-ordinator - Prof. Bhargab Maitra

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Bridge Engineering

Subject Co-ordinator - Prof. Piyali Sengupta

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Elastic Stability of Structures

Subject Co-ordinator - Prof. Sarat Kumar Panda

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Radiogenic Isotope Geology

Subject Co-ordinator - Prof. R. Anand

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Availability and Management of Groundwater Resources

Subject Co-ordinator - Prof. Prasoon Kumar Singh

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Soil Dynamics

Subject Co-ordinator - Prof. Paramita Bhattacharya

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Geotechnical Earthquake Engineering

Subject Co-ordinator - Prof. Kousik Deb

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 30 - Stress-Strain Behavior of Cyclically Loaded Soils (Continued...)
Lecture 31 - Linear Approach
Lecture 32 - Linear Approach (Continued...)
Lecture 33 - Equivalent Linear and Non Linear Approach
Lecture 34 - Evaluation of Liquefaction Resistance of Soils
Lecture 35 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 36 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 37 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 38 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 39 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 40 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 41 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 42 - Evaluation of Liquefaction Resistance of Soils (Continued...)
Lecture 43 - Liquefaction Susceptibility Criteria for Silts and Clays
Lecture 44 - Liquefaction Susceptibility Criteria for Silts and Clays (Continued...)
Lecture 45 - Liquefaction Susceptibility Criteria for Silts and Clays (Continued...)
Lecture 46 - Liquefaction Susceptibility Criteria for Silts and Clays (Continued...)
Lecture 47 - Settlement of Sand due to Earthquake Shaking
Lecture 48 - Settlement of Sand due to Earthquake Shaking (Continued...)
Lecture 49 - Seismic or Liquefaction Hazard Mitigation
Lecture 50 - Seismic or Liquefaction Hazard Mitigation (Continued...)
Lecture 51 - Seismic or Liquefaction Hazard Mitigation (Continued...)
Lecture 52 - Seismic or Liquefaction Hazard Mitigation (Continued...)
Lecture 53 - Seismic or Liquefaction Hazard Mitigation (Continued...)
Lecture 54 - Seismic slope stability analysis: Pseudostatic Analysis
Lecture 55 - Seismic slope stability analysis: Pseudostatic Analysis (Continued...)
Lecture 56 - Seismic slope stability analysis: Newmark Sliding Block Analysis
Lecture 57 - Seismic slope stability analysis: Newmark Sliding Block Analysis (Continued...)
Lecture 58 - Seismic design of retaining walls
Lecture 59 - Seismic design of retaining walls (Continued...)
Lecture 60 - Seismic design of retaining walls (Continued...)
Lecture 61 - Seismic design of retaining walls (Continued...)
Lecture 62 - Seismic design of retaining walls (Continued...)
Lecture 63 - Seismic design of retaining walls (Continued...)
Lecture 64 - Seismic design of retaining walls (Continued...)
Lecture 65 - Seismic design of retaining walls (Continued...)
Lecture 66 - Seismic design of retaining walls (Continued...)
Lecture 67 - Seismic design of retaining walls (Continued...)
Lecture 68 - Seismic design of retaining walls (Continued...)

Lecture 69 - Seismic design of retaining walls (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Earthquake Seismology

Subject Co-ordinator - Dr. Mohit Agrawal

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Anisotropic earth structure
Lecture 31 - Anisotropic earth structure (Continued...)
Lecture 32 - Attenuation and Anelasticity
Lecture 33 - Attenuation and Anelasticity (Continued...)
Lecture 34 - Attenuation and Anelasticity (Continued...)
Lecture 35 - Composition of the mantle and core
Lecture 36 - Composition of the mantle and core (Continued...)
Lecture 37 - Composition of the mantle and core (Continued...)
Lecture 38 - Composition of the mantle and core (Continued...)
Lecture 39 - Earthquakes, focal mechanisms, moment tensors
Lecture 40 - Earthquakes, focal mechanisms, moment tensors (Continued...)
Lecture 41 - Earthquakes, focal mechanisms, moment tensors (Continued...)
Lecture 42 - Earthquakes, focal mechanisms, moment tensors (Continued...)
Lecture 43 - Earthquakes, focal mechanisms, moment tensors (Continued...)
Lecture 44 - Brief on Earthquake geodesy
Lecture 45 - Brief on Earthquake geodesy (Continued...)
Lecture 46 - Brief on Earthquake geodesy (Continued...)
Lecture 47 - Brief on Earthquake geodesy (Continued...)
Lecture 48 - Source parameters, Earthquake statistics
Lecture 49 - Source parameters, Earthquake statistics (Continued...)
Lecture 50 - Source parameters, Earthquake statistics (Continued...)
Lecture 51 - Source parameters, Earthquake statistics (Continued...)
Lecture 52 - Source parameters, Earthquake statistics (Continued...)
Lecture 53 - Seismology and Plate tectonics, Spreading centers, Subduction zones
Lecture 54 - Seismology and Plate tectonics, Spreading centers, Subduction zones (Continued...)
Lecture 55 - Seismology and Plate tectonics, Spreading centers, Subduction zones (Continued...)
Lecture 56 - Numerical Problems in Seismology
Lecture 57 - Numerical Problems in Seismology (Continued...)

NPTEL Video Course - Civil Engineering - NOC:Engineering Geology

Subject Co-ordinator - Prof. R. K. Dubey

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Anchoring of rock strata : rock bolting
Lecture 31 - Categorization of major geological structures affecting stability of engineering ...
Lecture 32 - Major geological structures Fold, Faults, joints
Lecture 33 - Major geological structures: sedimentary structures, unconformity and effect ...
Lecture 34 - Effects of beddings, folds, faults, joints and unconformity on stability of dams
Lecture 35 - Effects of beddings, folds, faults, joints and unconformity on ground control ...
Lecture 36 - Rock-load/ground pressure, factors affecting ground pressure
Lecture 37 - Methods for determination of rock load: empirical approaches
Lecture 38 - Methods for determination of rock load: empirical, semi-empirical approaches
Lecture 39 - Methods for determination of rock load: Structural defect and rock-support ...
Lecture 40 - Unified approach, support system, and mechanics of rock bolt working
Lecture 41 - About road and highway features and pavement
Lecture 42 - Stress distributions and engineering geological facets of new road/highway alignments
Lecture 43 - About bridges, classifications and working mechanism
Lecture 44 - Engineering geological facets of bridges and material quality
Lecture 45 - Building, building foundation and foundation strata
Lecture 46 - Landslide
Lecture 47 - Landslide Hazards Zonation, causes and mitigation
Lecture 48 - Slope stability aspects of landslide
Lecture 49 - Earthquakes
Lecture 50 - Induced seismicity
Lecture 51 - Sea, seacoast, features and agents
Lecture 52 - Wave propagations and concept of surf zones and breaking of waves
Lecture 53 - Waves propagation in different depth and wave mechanics
Lecture 54 - Erosion induced and deposition assisted sea landforms
Lecture 55 - Sea shore hazards, mitigation and protective structures
Lecture 56 - Energy and introductory aspects of geothermal energy
Lecture 57 - Geothermal resources and enhanced geothermal systems
Lecture 58 - Geotechnical facets of gas hydrate
Lecture 59 - Engineering geological facets of CBM and shale gas
Lecture 60 - Engineering geological aspect of carbon capture, usage and storage (CCUS)

NPTEL Video Course - Civil Engineering - NOC:Industrial Wastewater Treatment

Subject Co-ordinator - Prof Alok Sinha, Prof S K Gupta

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Treatment and disposal of sludge
Lecture 31 - Treatment of wastewater produced from Distillery and Dairy Industries
Lecture 32 - Treatment of wastewater produced from Distillery and Dairy Industries
Lecture 33 - Treatment of wastewater produced from Distillery and Dairy Industries
Lecture 34 - Treatment of wastewater produced from Distillery and Dairy Industries
Lecture 35 - Treatment of wastewater produced from Distillery and Dairy Industries
Lecture 36 - Treatment of wastewater produced from Tannery and Pulp and Paper
Lecture 37 - Treatment of wastewater produced from Tannery and Pulp and Paper
Lecture 38 - Treatment of wastewater produced from Tannery and Pulp and Paper
Lecture 39 - Treatment of wastewater produced from Tannery and Pulp and Paper
Lecture 40 - Treatment of wastewater produced from Tannery and Pulp and Paper
Lecture 41 - Treatment of wastewater produced from Textile and Dye and Fertilizers
Lecture 42 - Treatment of wastewater produced from Textile and Dye and Fertilizers
Lecture 43 - Treatment of wastewater produced from Textile and Dye and Fertilizers
Lecture 44 - Treatment of wastewater produced from Textile and Dye and Fertilizers
Lecture 45 - Treatment of wastewater produced from Textile and Dye and Fertilizers
Lecture 46 - Treatment of wastewater produced from Refineries and Iron and Steel (Coke Ovens)
Lecture 47 - Treatment of wastewater produced from Refineries and Iron and Steel (Coke Ovens)
Lecture 48 - Treatment of wastewater produced from Refineries and Iron and Steel (Coke Ovens)
Lecture 49 - Treatment of wastewater produced from Refineries and Iron and Steel (Coke Ovens)
Lecture 50 - Treatment of wastewater produced from Refineries and Iron and Steel (Coke Ovens)
Lecture 51 - Treatment of wastewater produced from Pharmaceutical industry
Lecture 52 - Treatment of wastewater produced from Pharmaceutical industry
Lecture 53 - Treatment of wastewater produced from Pharmaceutical industry
Lecture 54 - Treatment of wastewater produced from Pharmaceutical industry
Lecture 55 - Treatment of wastewater produced from Pharmaceutical industry
Lecture 56 - Mine Wastewater including Acid Mine Drainage and Industrial Complexing
Lecture 57 - Mine Wastewater including Acid Mine Drainage and Industrial Complexing
Lecture 58 - Mine Wastewater including Acid Mine Drainage and Industrial Complexing
Lecture 59 - Mine Wastewater including Acid Mine Drainage and Industrial Complexing
Lecture 60 - Mine Wastewater including Acid Mine Drainage and Industrial Complexing

NPTEL Video Course - Civil Engineering - NOC:Geoengineering

Subject Co-ordinator - Prof. R. K. Dubey

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 1 - Introduction, definition and phase relations, components, advances, and relevance
Lecture 2 - Concept of force, load and stress
Lecture 3 - Stress-strain behaviour, modulus, and Poissonâ s ratio
Lecture 4 - Engineering properties of geoground/geomaterial
Lecture 5 - Strength failure criteria of geomaterial (rock)
Lecture 6 - Classification of water
Lecture 7 - Geoground, surface and groundwater interaction
Lecture 8 - Impact of water on geoground (rock)
Lecture 9 - Impact of water on geoground (soil)
Lecture 10 - Impact of water on ground, durability of geoground/geomaterial (soil)
Lecture 11 - Types of infrastructures, components and elements of building
Lecture 12 - Forces acting on building foundation strata/layers
Lecture 13 - Types of foundations and footings
Lecture 14 - Ground-foundation interaction, differential settlement, and basic of retaining walls
Lecture 15 - Retaining walls and earth pressures
Lecture 16 - Elements and classification of underground space structures
Lecture 17 - Excavation methods for underground space structures : Basic of drilling and blasting
Lecture 18 - Excavation methods underground space :underground :underground and blasting techniques
Lecture 19 - Excavation methods for underground space structures :tunnel boring machine (TBN)
Lecture 20 - Subsidence and ground control problems in underground spaces
Lecture 21 - In situ stress, damage zone and concept of ground pressure
Lecture 22 - Approaches for estimation of ground pressure : empirical and semi-empirical methods
Lecture 23 - Approaches for estimation of ground pressure : semi-empirical and other methods
Lecture 24 - Grout, Grouting and groutability
Lecture 25 - Anchoring of rock strata and support system and bolting
Lecture 26 - Characteristics of geoground in cold region
Lecture 27 - Behaviour of geoground in cold region (Mechanical attributes of snow)
Lecture 28 - Behaviour of geoground in cold region (Mechanical attributes ice and ice mixed soils)
Lecture 29 - Ground control issues and facets of glaciated slopes

Lecture 30 - Mitigation engineering structures
Lecture 31 - Geotechnical implication in mineral exploration
Lecture 32 - Geotechnical issues related to extraction of mineral resources
Lecture 33 - Mine fire and related geotechnical issues
Lecture 34 - Groundwater occurrences and exploration
Lecture 35 - 05:Geotechnical facets of groundwater extraction and saltwater intrusion
Lecture 36 - Concept, resources and classification of energy
Lecture 37 - Geoengineering view of geothermal energy
Lecture 38 - Concept and sources of green energy and associated geotechnical challenges
Lecture 39 - Water energy and geoengineering issues
Lecture 40 - Classification energy source reservoirs
Lecture 41 - Radioactive and strategic minerals gas hydrates as energy geotechnical constraints
Lecture 42 - Classification of energy source reservoirs and concept geomechanical characterization
Lecture 43 - Geomechanical characterization of hydrocarbon reservoir
Lecture 44 - Geomechanical characterization of Coal bed methane and shale gas reservoirs
Lecture 45 - Geomechanical characterization of geothermal reservoir
Lecture 46 - Climate change scenario
Lecture 47 - Impact of climate change
Lecture 48 - Nuclear power and generation of waste and related issues
Lecture 49 - Geotechnical facets of carbon dioxide capture and sequestration
Lecture 50 - Geotechnical issues and solutions in nuclear waste disposal
Lecture 51 - Mass wasting and landslide hazards zonation
Lecture 52 - Slope stability analysis of natural and engineered slopes
Lecture 53 - Earthquake hazards analysis and mitigation
Lecture 54 - Induced seismicity
Lecture 55 - Volcanic hazards, assessment and mitigation
Lecture 56 - Quaternary land forms and active neotectonics
Lecture 57 - River hydraulics and associate problems, geotechnical applications
Lecture 58 - Linking of river and expected geotechnical issues and possible measures
Lecture 59 - Seashore and wave dynamics
Lecture 60 - Wave dynamics, hazards, geotechnical issues and mitigation

NPTEL Video Course - Civil Engineering - NOC:Free Surface Flows

Subject Co-ordinator - Prof. Mohammad Saud Afzal

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Reservoir Geophysics for Hydrocarbon Exploration

Subject Co-ordinator - Prof. Saurabh Datta Gupta

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Discussion on Passive Seismic Data and its application towards the study of Reservoir
Lecture 31 - Discussion on basic understanding of Crosswell Seismic Tomography
Lecture 32 - Lectuer on Crosswell Seismic Tomography for Reservoir Characterization and Management
Lecture 33 - Discussion AVO Analysis and Tomography for Enhanced Reservoir Characterization (EOR)
Lecture 34 - Implication of Crosswell Seismic Tomography and AVO for Reservoir Imaging
Lecture 35 - Lectuer on AVO Analysis: Seismic Signatures, Techniques, and Case Study
Lecture 36 - Discussion on Approach and Principal Causes of Low-Resistivity and (LRLC) Reservoirs
Lecture 37 - Lectuer on LRLC Reservoirs: Causes, Traits, Challenges, Evaluation and Solutions
Lecture 38 - Discussion on Clay Distribution Modes and Core-Well Log Integration in LRLC Reservoirs
Lecture 39 - Discussion on Wireline Logging and Petrophysical Techniques for LRLC Reservoirs
Lecture 40 - Lectuer on Gas Condensate Reservoirs: Properties, Sampling, Production and Performance
Lecture 41 - Discussion on 4D Seismic: Requirements, Planning, and Reservoir Monitoring
Lecture 42 - Lectuer on 4D Seismic: Acquisition, Processing, Interpretation, and History Matching
Lecture 43 - Discussion on The Marlim field: A case study
Lecture 44 - Discussion on Reservoir Modeling: Importance, Pore-Scale Mechanisms, and Carbonate Rocks
Lecture 45 - Discussion on Pore-Scale Displacement Mechanism in Carbonate Reservoirs: A Case Study
Lecture 46 - Discussion on Comprehensive Overview of Deepwater, and Production Implications
Lecture 47 - Lectuer on Deepwater Depositional Systems: Architecture, and Exploration Challenges
Lecture 48 - Discussion on Deepwater Exploration: Importance, Challenges, Frontiers, Global Impact
Lecture 49 - Discussion on Deepwater Exploration and Sedimentation: Trends, Sustainable Approaches
Lecture 50 - Discussion on Deepwater Exploration: Challenges, Innovations, Strategies for Advancement
Lecture 51 - Discussion on Comprehensive Overview of Seismic Imaging and Data Processing in Deep
Lecture 52 - Lectuer on Challenges in Deep-Water Seismic Imaging: Data Acquisition, Geological
Lecture 53 - Discussion on Sediment Variability, Technological Innovations, Seismic Exploration
Lecture 54 - Discussion on Risk Identification, Assessment, and Management in Deepwater Exploration
Lecture 55 - Discussion on Risk Analysis and Management in Deepwater the Macondo Blowout Case Study
Lecture 56 - Discussion on Clastic Reservoirs: Pore Structure, Challenges, and Depletion Effects
Lecture 57 - Lectuer on Enhanced Recovery and Characterization of Deep Clastic Reservoirs
Lecture 58 - Discussion on a Case Study of Depleted Clastic Reservoirs
Lecture 59 - Discussion on Basalt Formation, Sub-Basalt Exploration, and Seismic Challenges
Lecture 60 - Discussion on Case Study: Use of Converted Waves for Sub-Basalt Imaging

NPTEL Video Course - Civil Engineering - NOC:Mathematical Geophysics

Subject Co-ordinator - Prof. Swarandeep Sahoo

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Internal Gravity Wave
Lecture 31 - Laplaceâ s and Poissonâ s equations
Lecture 32 - Heat flows in the Earth
Lecture 33 - Convective Heat Flows in the Mantle
Lecture 34 - Outer Core Thermal Convection
Lecture 35 - Outer Core Double-Diffusive Convection
Lecture 36 - Fourier Analysis and Transform
Lecture 37 - Linear Time-Invariant Systems and Filtering
Lecture 38 - Sampling Theory for Time Series
Lecture 39 - Transforms for Geophysical Analysis
Lecture 40 - Data Driven Methods in Geophysics

NPTEL Video Course - Civil Engineering - NOC:Tectonics and Geodynamics

Subject Co-ordinator - Prof. Saibal Gupta

Co-ordinating Institute - IIT - Kharagpur

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

NPTEL Video Course - Civil Engineering - NOC:Advanced Structural Analysis

Subject Co-ordinator - Prof. Devesh Punera

Co-ordinating Institute - IIT - Bhubaneshwar

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

Lecture 30 - Continuous Beam - Computer Based Stiffness Approach (Continued...)
Lecture 31 - MATLAB implementation of stiffness approach - continuous beam case
Lecture 32 - Computer Based Stiffness Approach in MATLAB - Hands-on Session
Lecture 33 - Stiffness approach for plane truss members - computer implementation
Lecture 34 - 2D truss stiffness approach - computer implementaion
Lecture 35 - Plane truss MATLAB implementation Hands-on session
Lecture 36 - Computer implementation of Stiffness Approach - Plane Frame System
Lecture 37 - Computer implementation of Stiffness Approach - Plane Frame System (Continued...)
Lecture 38 - Computer implementation for plance frame - Example Problem
Lecture 39 - Computer implementation of Stiffness Approach - Grid Structures
Lecture 40 - Transformation in 3D domain - Space Frame and Space Truss
Lecture 41 - Computer based stiffness approach - Space Frame and Space Truss
Lecture 42 - Space truss member - Example and computer implementation
Lecture 43 - Introduction to the geometrical nonlinearities
Lecture 44 - Geometrical nonlinear analysis - Plane Truss Member
Lecture 45 - Geometrical nonlinear analysis - Plane Truss Structure
Lecture 46 - Geometrical nonlinear analysis - Example Problem
Lecture 47 - Geometrical nonlinear analysis - Beam Members
Lecture 48 - Geometrical nonlinear analysis - Beam Members (Continued...)
Lecture 49 - Incremental load analysis - Geometrical nonlinear problem
Lecture 50 - Newton Raphson Procedure for nonlinear analysis
Lecture 51 - Newton Raphson Scheme - Geometrically nonlinear problem
Lecture 52 - P-delta effects in general frame structures
Lecture 53 - P-delta effects using geometric stiffness and solution
Lecture 54 - Linear Buckling Analysis
Lecture 55 - Introduction to Material nonlinearity
Lecture 56 - Incremental Stress-strain Relation - Material Nonlinearity
Lecture 57 - Member stiffness and incremental analysis
Lecture 58 - Iterative solution approach and numerical example
Lecture 59 - Example case
Lecture 60 - Introduction to finite element approach and way forward

NPTEL Video Course - Civil Engineering - NOC:Computational Geomechanics

Subject Co-ordinator - Prof. Shantanu Patra

Co-ordinating Institute - IIT - Bhubaneshwar

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

Lecture 30 - FDM for buckling of column and BEM (Continued...)
Lecture 31 - Finite Difference Method And Laplace Equation
Lecture 32 - Finite Difference Method And Laplace Equation (Continued...)
Lecture 33 - Finite Difference Method And Laplace Equation (Continued...)
Lecture 34 - Finite Difference Method And Parabolic nequation - Explicit Method
Lecture 35 - Parabolic equation - Explicit and Implicit Method
Lecture 36 - Parabolic equation - Explicit and Implicit Method
Lecture 37 - Parabolic equation - 1-D Consolidation problem
Lecture 38 - FDM for 2D seepage problem
Lecture 39 - FDM for Mat Foundation
Lecture 40 - Approximate methods of solution
Lecture 41 - Constitutive Models for geomechanics
Lecture 42 - Approximate methods for Beam on elastic foundation problem
Lecture 43 - Introduction to Finite Element Method
Lecture 44 - Formulation of Stiffness matrix-direct approach
Lecture 45 - Application of Direct stiffness Methods for 1D Spring element
Lecture 46 - Stiffness Matrix Using Shape Functions and Truss Element
Lecture 47 - Truss analysis
Lecture 48 - Flow through porous medium
Lecture 49 - Variational method for flow through porous medium
Lecture 50 - Variational method for 1D consolidation and bar element
Lecture 51 - Strain energy method for bar element (Continued...)
Lecture 52 - Formulation of stiffness matrix for beam element
Lecture 53 - Formulation of stiffness matrix for beam element (Continued....)
Lecture 54 - Analysis of beam
Lecture 55 - Determination of shape function for 2D CST element
Lecture 56 - Determination of Stiffness matrix for CST element (Continued...)
Lecture 57 - Body force and surface force and numerical integration
Lecture 58 - Iso-parameteric element
Lecture 59 - Axisymmetric element

NPTEL Video Course - Civil Engineering - NOC:Geotechniques of Dams, Tunnels and Underground Spaces

Subject Co-ordinator - Prof. R. K. Dubey

Co-ordinating Institute - IIT-ISM Dhanbad

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

Lecture 30 - Test method for determination of insitu permeability of foundation ground
Lecture 31 - Introductory aspects of stability analysis
Lecture 32 - Critical issues in the analysis of the stability of dam
Lecture 33 - Condition for slope stability analysis
Lecture 34 - Estimation of pore-pressure and permeability of dam foundation
Lecture 35 - Application of the laboratory test parameters, monitoring and ground improvement
Lecture 36 - Classification of underground spaces
Lecture 37 - Tunnelling philosophy for construction of underground space structures (New Austrian Tunnelling
Lecture 38 - Tunnelling philosophy for construction of underground space structures (Norwegian Method of Tunr
Lecture 39 - Basics of drilling and blasting for creation underground spaces
Lecture 40 - Underground blasting method for development of underground space structures
Lecture 41 - Tunnel support pressure and estimation methods
Lecture 42 - Evaluation of tunnels support pressure : empirical methods
Lecture 43 - Approaches for estimation of ground pressure : semi-empirical and other methods
Lecture 44 - Types of tunnel support system : rock-bolts
Lecture 45 - Recommendation of support system
Lecture 46 - Tunnelling grounds
Lecture 47 - Classification of squeezing ground
Lecture 48 - Geomechanical criterion for squeezing ground condition
Lecture 49 - Tunnel instrumentation and monitoring
Lecture 50 - Instruments monitoring and management
Lecture 51 - Tunnelling hazards, and classification
Lecture 52 - Latent variables in tunnelling hazards analysis
Lecture 53 - Ground related tunnelling hazards and categorization
Lecture 54 - Squeezing hazards and ground conditions
Lecture 55 - Squeezing criteria, predictions and swelling hazards
Lecture 56 - Anchoring of dam foundation ground
Lecture 57 - Types of rock-bolts
Lecture 58 - Rock bolting theory and working mechanism
Lecture 59 - Mechanics of anchoring of ground by rock-bolting
Lecture 60 - Different forces acting on dam and application of anchoring system

NPTEL Video Course - Civil Engineering - NOC:Environmental Nanotechnology and Applications

Subject Co-ordinator - Prof. Remya Neelancherry

Co-ordinating Institute - IIT - Bhubaneshwar

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

Lecture 30 - Nanomembrane synthesis and characterization
Lecture 31 - Nanomembrane in water and wastewater treatment - I
Lecture 32 - Nanomembrane in water and wastewater treatment - II
Lecture 33 - Nano-biochar and biochar composites
Lecture 34 - Basics of disinfection - I
Lecture 35 - Basics of disinfection - II
Lecture 36 - Nano-disinfectants for wastewater treatment
Lecture 37 - Nanomaterial leaching, toxicity and risk assessment - I
Lecture 38 - Nanomaterial leaching, toxicity and risk assessment - II

NPTEL Video Course - Civil Engineering - Advanced Structural Analysis

Subject Co-ordinator - Prof. Devdas Menon

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - Finite Element Analysis

Subject Co-ordinator - Dr. B.N. Rao

Co-ordinating Institute - IIT - Madras

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40

NPTEL Video Course - Civil Engineering - Geosynthetics and Reinforced Soil Structures

Subject Co-ordinator - Dr. K. Rajagopal

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - Modern Construction Materials

Subject Co-ordinator - Dr. Ravindra Gettu

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Metals - Part 3
Lecture 31 - Bituminous Material - Part 1
Lecture 32 - Bituminous Material - Part 2
Lecture 33 - Concrete - Part 1
Lecture 34 - Concrete - Part 2
Lecture 35 - Concrete - Part 3
Lecture 36 - Concrete - Part 4
Lecture 37 - Concrete - Part 5
Lecture 38 - Glass - Guest Lecture
Lecture 39 - Social Perception - Guest Lecture
Lecture 40 - Water Proofing - Guest Lecture
Lecture 41 - Floor Finishes - Guest Lecture
Lecture 42 - Anchors - Guest Lecture

NPTEL Video Course - Civil Engineering - Urban transportation planning

Subject Co-ordinator - Dr. V. Thamizh Arasan

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Route Assignment (Continued...)
Lecture 31 - Transportation Surveys
Lecture 32 - Transportation Surveys (Continued...)
Lecture 33 - Transportation Surveys (Continued...)
Lecture 34 - Transport Related Land-Use Models
Lecture 35 - Transport Related Land-Use Models (Continued...)
Lecture 36 - Transport Related Land-Use Models (Continued...)
Lecture 37 - Urban Structure
Lecture 38 - Urban Structure (Continued...)
Lecture 39 - Urban Goods Movement
Lecture 40 - Urban Goods Movement (Continued...)

NPTEL Video Course - Civil Engineering - Mechanics of Solids

Subject Co-ordinator - Prof. M.S. Sivakumar

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - Pre-stressed Concrete Structures

Subject Co-ordinator - Prof. Devdas Menon, Dr. Amlan Kumar Sengupta

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Transmission of Prestress
Lecture 31 - Post-tensioned Members
Lecture 32 - Cantilever Beams
Lecture 33 - Continuous Beams - Part-1
Lecture 34 - Continuous Beams - Part-2
Lecture 35 - Composite Sections
Lecture 36 - One-Way Slabs
Lecture 37 - Two-Way Slabs - Part-1
Lecture 38 - Two-Way Slabs - Part-2
Lecture 39 - compression Members
Lecture 40 - Circular Prestressing,Conclusion

NPTEL Video Course - Civil Engineering - Water and Waste Water Engineering

Subject Co-ordinator - Prof. B.S. Murty, Prof. C. Venkobachar, Prof. Ligy Philip

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Sludge Treatment (Continued...)
Lecture 31 - Sludge Treatment (Continued...) & Waste Water Disposal
Lecture 32 - Waste Water Disposal And Reuse
Lecture 33 - Advanced Waste Water Treatment
Lecture 34 - Adsorption
Lecture 35 - Ion Exchange, Advanced Oxidation Process
Lecture 36 - Industrial Waste Water Treatment
Lecture 37 - Water Distribution Networks
Lecture 38 - Sanitary sewerage systems
Lecture 39 - Storm water sewerage systems
Lecture 40 - Intake Structures And Pumping Installations

NPTEL Video Course - Civil Engineering - NOC:Sustainable River Basin Management

Subject Co-ordinator - Dr. Franziska Steinbruch

Co-ordinating Institute - IGCS

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

Lecture 30
Lecture 31
Lecture 32
Lecture 33
Lecture 34
Lecture 35
Lecture 36
Lecture 37
Lecture 38
Lecture 39
Lecture 40

NPTEL Video Course - Civil Engineering - NOC:Project Planning and Control

Subject Co-ordinator - Dr. Koshy Varghese

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Time-Cost trade-off
Lecture 31 - Incorporating Factors such as Bonus and Penalty; Problem-4
Lecture 32 - What is Resource?, Influence of Resources on Schedule, Two-Span Bridge Example, Resource Decisio
Lecture 33 - Projects and Resources, Example of Two Resources, Exercise, Two-Span Bridge Example
Lecture 34 - Review Problem-1; Problem-2 (Cash Resource); Resolving Over-Allocation
Lecture 35 - Problem 1 - Two Resources; Resolving Resource Allocation Problems
Lecture 36 - Resource Profile Requirements
Lecture 37 - Resource Leveling - Example Network
Lecture 38 - Minimum Moment Concept
Lecture 39 - Applying Improvement Factor - Illustration
Lecture 40 - Introduction to Precedence Diagramming Method (PDM)
Lecture 41 - PDM network representation and its issues, Network Calculation
Lecture 42 - PDM Â Problem #1
Lecture 43 - Issues in PDM, Negative Lags, Problem #2 Solution
Lecture 44 - PDM Â Analysis with non-continuous duration, Floats
Lecture 45 - Defining Relationship (Based on Construction Method) - Simple Shed
Lecture 46 - Project Monitoring & Control Â Typical Project Time Monitoring Process, Levels and Frequency of
Lecture 47 - Project Control Process, Daily Progress Report, Macro Level Update- Data Need, Standard Progress
Lecture 48 - Application
Lecture 49 - Review of Key Issues in Project Monitoring, Earned Value Concept Through Examples
Lecture 50 - Basic Earned Value Definitions and Terminology, Summary
Lecture 51 - Uncertainty in Project Schedules
Lecture 52 - PERT Background & Assumptions, Stepwise Procedure
Lecture 53 - PERT Example Problem, Summary
Lecture 54 - Course Conclusion
Lecture 55 - Emerging Trends / Tools in Project Planning
Lecture 56 - Industry Perspective Â Prof. N. Raghavan
Lecture 57 - Final Exam Pattern, Acknowledgements

NPTEL Video Course - Civil Engineering - NOC:Structural Dynamics

Subject Co-ordinator - Prof. Ramancharala Pradeep Kumar

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Logarithmic Decrement
Lecture 31 - Dynamic Equilibrium Equation Using Energy Method
Lecture 32 - Module 1: UnDamped Forced Vibration
Lecture 33 - Module 2: Damped Forced Vibration
Lecture 34 - Module 3: Relationship between Rd, Rv & Ra
Lecture 35 - Module 4: Resonant Frequency & Half Power Band Width
Lecture 36 - Module 5: Transmissibility
Lecture 37 - Module 1: Response to Arbitrary Force
Lecture 38 - Module 2: Special Cases in Arbitrary Force
Lecture 39 - Module 3: Fourier Transformation
Lecture 40 - Module 1: Numerical Methods
Lecture 41 - Module 2: Methods Based on Interpolation of Excitation
Lecture 42 - Module 3: Central Difference Method
Lecture 43 - Module 4: Numerical Methods based on Variation of Acceleration: Newmark's Method
Lecture 44 - Central Difference Method (Tutorial)
Lecture 45 - Module 1: Response Spectrum
Lecture 46 - Module 2: Special Cases of Response Spectrum
Lecture 47 - Module 3: Development of Tripartite Plot
Lecture 48 - Module 1: Multi-Degree of Freedom System
Lecture 49 - Module 2: Multi-Degree of Freedom System: Solution of Equilibrium Equation
Lecture 50 - Module 3: Multi-Degree of Freedom System: Modal Orthogonality
Lecture 51 - Module 4: Approximate Methods For Finding Natural Frequency
Lecture 52 - Tutorial 01: Generation of Mass Matrix
Lecture 53 - Tutorial 2: Eigen vector and Modal Orthogonality
Lecture 54 - Module 1: Time History Analysis
Lecture 55 - Module 2: Response Spectrum Analysis
Lecture 56 - Module 1: Three Dimensional Dynamic Analysis
Lecture 57 - Module 2: Generation of Elastic Design Response Spectra
Lecture 58 - W09T01: Centre of Mass & Centre of Stiffness
Lecture 59 - Module 1: Vibration of Continuous Systems
Lecture 60 - Module 2: Example Problem on Continuous system
Lecture 61 - Module 3: Theory of Seismometer
Lecture 62 - Module 1: Dynamics of Non Structural Elements
Lecture 63 - Module 2: Non Structural Elements Example
Lecture 64 - W11T: Non Structural Elements
Lecture 65 - Module 1: Classical and Non-classical Damping
Lecture 66 - Module 2: Vibration Control
Lecture 67 - Module 3: Base Isolation
Lecture 68 - Module 4: Tuned Mass Damper

NPTEL Video Course - Civil Engineering - NOC:Mechanics of Materials

Subject Co-ordinator - Dr. U. Saravanan

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Gradient
Lecture 31 - Deformation and displacement Gradient
Lecture 32 - Right Cauchy Green Deformation tensor
Lecture 33 - Homogeneous deformation
Lecture 34 - Engineering strain
Lecture 35 - Change in Angle
Lecture 36 - Transformation of strain components/ Strain Rosette
Lecture 37 - Compatibility condition
Lecture 38 - Constitutive relation
Lecture 39 - Young's Modulus and Poisson's Ratio
Lecture 40 - Shear Modulus
Lecture 41 - Bulk Modulus
Lecture 42 - Restriction on material parameters
Lecture 43 - Thermal strain
Lecture 44 - Strain energy, load potential and total potential
Lecture 45 - Stepped shaft subjected to axial force
Lecture 46 - Inhomogeneous bar subjected to axial force
Lecture 47 - Stepped shaft subjected to raise in temperature
Lecture 48 - Traction in member subjected to bending
Lecture 49 - Governing equilibrium equations
Lecture 50 - Displacement field
Lecture 51 - Bending equation
Lecture 52 - Radius of curvature
Lecture 53 - Shear force and bending moment diagram
Lecture 54 - Variation of axial stress
Lecture 55 - Deflected shape and rotation of cross section
Lecture 56 - Expression to find shear stress
Lecture 57 - Finding centroid of a cross section
Lecture 58 - Parallel axis theorem and its application
Lecture 59 - Vertical shear stress in I section
Lecture 60 - Horizontal shear stress in I section
Lecture 61 - Connection design
Lecture 62 - Definition of shear center
Lecture 63 - Shear center of Channel section
Lecture 64 - Expression to find shear center
Lecture 65 - Shear force and bending moment diagram
Lecture 66 - Deflected shape and rotation of cross section
Lecture 67 - Finding allowable load
Lecture 68 - Modified bending equation

Lecture 69 - Bending of a composite beam
Lecture 70 - Connection design
Lecture 71 - Moment of Intertia about arbitrarily oriented axis
Lecture 72 - Example
Lecture 73 - Bending equation for bending about principal axis
Lecture 74 - Bending equation about arbitrary axis
Lecture 75 - Neutral axis
Lecture 76 - Load not about principal axis
Lecture 77 - Load about principal axis
Lecture 78 - Displacement field
Lecture 79 - Torsion equation
Lecture 80 - Example problems
Lecture 81 - Expression relating angle of twist with torsion and shear stress
Lecture 82 - Example problems
Lecture 83 - Thin walled closed sections
Lecture 84 - Example problems
Lecture 85 - Cylindrical polar coordinate system
Lecture 86 - Displacement field
Lecture 87 - Governing differential equation and solution
Lecture 88 - Example problems
Lecture 89 - Thin walled pressure vessels
Lecture 90 - General Principals
Lecture 91 - Different failure modes
Lecture 92 - Tresca Condition
Lecture 93 - vonMises condition
Lecture 94 - Maximum normal stress or rankine condition
Lecture 95 - Mohr - Columb condition
Lecture 96 - Drucker-Prager Condition
Lecture 97 - General Concepts
Lecture 98 - Euler critical load for simply supported column
Lecture 99 - Euler critical load for column with any boundary condition
Lecture 100 - Secant formula
Lecture 101 - Pressure vessel and failure theory
Lecture 102 - Determination of maximum load carrying capacity of a simple truss

NPTEL Video Course - Civil Engineering - NOC:Advanced Concrete Technology

Subject Co-ordinator - Prof. Manu Santhanam

Co-ordinating Institute - IIT - Madras

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

Lecture 29 - Fresh properties - Part 3
Lecture 30 - Introduction to Harden concrete properties
Lecture 31 - Post peak response and Fibre reinforced concrete
Lecture 32 - Shrinkage
Lecture 33 - Creep
Lecture 34 - Shrinkage
Lecture 35 - Shrinkage
Lecture 36 - Introduction to Durability
Lecture 37 - Performance based specifications for durable concrete
Lecture 38 - Durability issues in concrete - Part 1
Lecture 39 - Durability issues in concrete - Part 2
Lecture 40 - Durability issues in concrete - Part 3
Lecture 41 - Durability issues in concrete - Part 4
Lecture 42 - Durability issues in concrete - Part 5
Lecture 43 - Durability issues in concrete - Part 6

NPTEL Video Course - Civil Engineering - NOC:Glass in Buildings: Design and Application

Subject Co-ordinator - Prof. K.N. Satyanarayana

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Introduction to Daylight Simulation
Lecture 31 - Daylighting Controls - Part I
Lecture 32 - Daylighting Controls - Part II
Lecture 33 - Acheving Acoustics Through Glass
Lecture 34 - Glass Processing Overview - Part I
Lecture 35 - Glass Processing Overview - Part II
Lecture 36 - Interior Glazing Program - Part I
Lecture 37 - Interior Glazing Program - Part II
Lecture 38 - Interior Glazing Applications-Shower Enclosure - Part I
Lecture 39 - Interior Glazing Applications-Shower Enclosure - Part II
Lecture 40 - Interior Glazing Applications-Shower Enclosure - Part III
Lecture 41 - Interior Glazing Applications-Shower Enclosure - Part IV
Lecture 42 - Glass in Passive Fire Protection - Part I
Lecture 43 - Glass in Passive Fire Protection - Part II
Lecture 44 - Glass in Passive Fire Protection - Part III
Lecture 45 - Glazing Choices for Project Segment - Part I
Lecture 46 - Glazing Choices for Project Segment - Part II
Lecture 47 - National Building Code 2016 - Part I
Lecture 48 - National Building Code 2016 - Part II
Lecture 49 - National Building Code 2016 - Part III
Lecture 50 - National Building Code 2016 - Part IV
Lecture 51 - Facade Fundamentals - Part I
Lecture 52 - Facade Fundamentals - Part II
Lecture 53 - Facade Fundamentals - Part III
Lecture 54 - Facade Fundamentals - Part IV
Lecture 55 - Glass Application on Facades - Part I
Lecture 56 - Glass Application on Facades - Part II
Lecture 57 - Glass Application on Facades - Part III
Lecture 58 - Energy Efficiency Facade System
Lecture 59 - Structural Design of Facades - Part I
Lecture 60 - Structural Design of Facades - Part II
Lecture 61 - Silicone for Structural Glazing - Part - I
Lecture 62 - Silicone for Structural Glazing - Part - II
Lecture 63 - Silicone for Structural Glazing - Part - III
Lecture 64 - Facade Factory Operations - Part I
Lecture 65 - Facade Factory Operations - Part II
Lecture 66 - Performance Testing for Facades - Part I
Lecture 67 - Performance Testing for Facades - Part II
Lecture 68 - The Role of Windows in Building Design - Part I

NPTEL Video Course - Civil Engineering - NOC:Glass Processing Technology

Subject Co-ordinator - Prof. K.N. Satyanarayana

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Tempering - Part VII
Lecture 31 - Lamination - Part I
Lecture 32 - Lamination - Part II
Lecture 33 - Lamination - Part III
Lecture 34 - Insulating Glass Unit - Part I
Lecture 35 - Insulating Glass Unit - Part II
Lecture 36 - Insulating Glass Unit - Part III
Lecture 37 - Insulating Glass Unit - Part IV
Lecture 38 - Insulating Glass Unit - Part V
Lecture 39 - Insulating Glass Unit - Part VI
Lecture 40 - Insulating Glass Unit - Part VII
Lecture 41 - Insulating Glass Unit - Part VIII
Lecture 42 - Insulating Glass Unit - Part IX
Lecture 43 - Silicone Sealant for Insulated Glass - Part I
Lecture 44 - Silicone Sealant for Insulated Glass - Part II
Lecture 45 - Insulating Glass Unit - Part X
Lecture 46 - Insulating Glass Unit - Part XI
Lecture 47 - Insulating Glass Unit - Part XII
Lecture 48 - Processing Standards and Checks
Lecture 49 - Quality Testing - Part I
Lecture 50 - Quality Testing - Part II
Lecture 51 - Quality Testing - Part III
Lecture 52 - Quality Testing - Part IV - Video 1
Lecture 53 - Quality Testing - Part IV - Video 2
Lecture 54 - Quality Testing - Part V
Lecture 55 - Quality Testing - Part VI
Lecture 56 - Quality Testing - Part VII
Lecture 57 - Heat soaking - Part I
Lecture 58 - Heat soaking - Part II
Lecture 59 - Ceramic Printing on Glass - Part I
Lecture 60 - Ceramic Printing on Glass - Part II
Lecture 61 - Ceramic Printing on Glass - Part III
Lecture 62 - Ceramic Printing on Glass - Part IV
Lecture 63 - Glass Breakage Reasons
Lecture 64 - Internal Process Loss - Part I
Lecture 65 - Internal Process Loss - Part II
Lecture 66 - Internal Process Loss - Part III
Lecture 67 - Root Cause Analysis - Part I
Lecture 68 - Root Cause Analysis - Part II

NPTEL Video Course - Civil Engineering - NOC:Advanced Topics in the Science and Technology of Concrete

Subject Co-ordinator - Prof. Manu Santhanam, Dr. Ravindra Gettu

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Infrastructure Planning and Managements

Subject Co-ordinator - Dr. Ashwin Mahalingam

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Design of Masonry Structures

Subject Co-ordinator - Prof. Arun Menon

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Characterization of Construction Materials

Subject Co-ordinator - Prof. Manu Santhanam, Prof. Piyush Chaunsali

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Surface Area Measurement
Lecture 31 - Surface Area Measurement
Lecture 32 - Optical and Scanning Microscopy- Introduction and specimen preperation - Part 1
Lecture 33 - Optical and Scanning Microscopy- Introduction and specimen preperation - Part 2
Lecture 34 - Optical and Scanning Microscopy- Features and functions - Part 1
Lecture 35 - Optical and Scanning Microscopy- Features and functions - Part 2
Lecture 36 - Types of optical microsopy - Part 1
Lecture 37 - Types of optical microsopy - Part 2
Lecture 38 - Scanning electron microscope Part 1- Parts and Functioning - Part 1
Lecture 39 - Scanning electron microscope Part 1- Parts and Functioning - Part 2
Lecture 40 - Scanning electron microscope Part 2- Working Principles - Part 1
Lecture 41 - Scanning electron microscope Part 2- Working Principles - Part 2
Lecture 42 - Scanning electron microscope Part 3 - Analysis of cementitious systems 1 - Part 1
Lecture 43 - Scanning electron microscope Part 3 - Analysis of cementitious systems 1 - Part 2
Lecture 44 - Scanning electron microscope Part 4 - Analysis of cementitious system 2 - Part 1
Lecture 45 - Scanning electron microscope Part 4 - Analysis of cementitious system 2 - Part 2
Lecture 46 - Application of characterization techniques to assess composite binder with limestone-calcined cl
Lecture 47 - Application of characterization techniques to assess composite binder with limestone-calcined cl
Lecture 48 - Image analysis - Introduction and image mapping - Part 1
Lecture 49 - Image analysis - Introduction and image mapping - Part 2
Lecture 50 - Image analysis - Basic operations - Part 1
Lecture 51 - Image analysis - Basic operations - Part 2
Lecture 52 - Spectroscopy Techniques - Part 1 AAS, AES - Part 1
Lecture 53 - Spectroscopy Techniques - Part 1 AAS, AES - Part 2
Lecture 54 - Spectroscopy Techniques - Part 2 UV and IR spectroscopy - Part 1
Lecture 55 - Spectroscopy Techniques - Part 2 UV and IR spectroscopy - Part 2
Lecture 56 - Spectroscopy Techniques - Part 3 FTIR and NMR spectroscopy - Part 1
Lecture 57 - Spectroscopy Techniques - Part 3 FTIR and NMR spectroscopy - Part 2
Lecture 58 - Spectrocopy techniques - Part 4 Principle of NMR spectroscopy
Lecture 59 - Porosity and pore structure - Intoduction, significance of pore distribution
Lecture 60 - Porosity and pore structure - Woking of mercury intrusion porosimeter - Part 1
Lecture 61 - Porosity and pore structure - Woking of mercury intrusion porosimeter - Part 2
Lecture 62 - Electrical Impedance analysis - Principle and different methods - Part 1
Lecture 63 - Electrical Impedance analysis - Principle and different methods - Part 2
Lecture 64 - Electrical Impedance analysis - Deliverables and Interpretation - Part 1
Lecture 65 - Electrical Impedance analysis - Deliverables and Interpretation - Part 2
Lecture 66 - Electrochemical testing (Corrosion) using Electrochemical Impedance Spectroscopy (EIS) - Part 1
Lecture 67 - Electrochemical testing (Corrosion) using Electrochemical Impedance Spectroscopy (EIS) - Part 2

NPTEL Video Course - Civil Engineering - NOC:Introduction to Civil Engineering Profession

Subject Co-ordinator - Dr. Ravindra Gettu, Prof. Subhadeep Banerjee

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - What is Civil Engineering - Part 1
Lecture 2 - What is Civil Engineering - Part 2
Lecture 3 - Structural Conservation of Built Heritage
Lecture 4 - Introduction to Environmental Engineering
Lecture 5 - Interesting Environmental Projects
Lecture 6 - Hydraulic and Water Resources Engineering
Lecture 7 - Geotechnical Engineering
Lecture 8 - Construction Materials and Methods
Lecture 9 - Infrastructure Management
Lecture 10 - Structural Engineering - 1
Lecture 11 - Structural Engineering - 2
Lecture 12 - Structural Engineering - Analysis and Design
Lecture 13 - Structural Modeling
Lecture 14 - Scope for Highway Engineers in Civil Engineering Profession - 1
Lecture 15 - Scope for Highway Engineers in Civil Engineering Profession - 2
Lecture 16 - Introduction to Civil Engineering Profession
Lecture 17 - Hydrology and Water Security
Lecture 18 - An Overview of Computational Science and Engineering
Lecture 19 - Sustainability
Lecture 20 - The Big Picture

NPTEL Video Course - Civil Engineering - NOC:Maintenance and Repair of Concrete Structures

Subject Co-ordinator - Prof. Radhakrishna G. Pillai

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Injection Grouts for concrete repair
Lecture 31 - Structural repair of prestressed concrete systems
Lecture 32 - Case studies on structural repair (Right methodologies and systematic approach / case studies)
Lecture 33 - Cathodic Protection in Concrete Structures - Laboratory and field studies
Lecture 34 - Service life estimation - 1
Lecture 35 - Service life estimation - 2

NPTEL Video Course - Civil Engineering - NOC:Mechanical Characterization of Bituminous Materials

Subject Co-ordinator - Dr. J. Murali Krishnan, Prof. M. R. Nivitha, Prof. Neethu Roy, Prof. A. Padmarekha

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Chemical Engineering - NOC:Colloids and Surfaces

Subject Co-ordinator - Prof. Basavaraj Madivala Gurappa

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Chemical Engineering - NOC:Polymers: Concepts, Properties, Uses and Sustainability

Subject Co-ordinator - Dr. Abhijit P. Deshpande

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Microstructure in polymers
Lecture 31 - Composites
Lecture 32 - Stress strain response
Lecture 33 - Additives for polymeric systems
Lecture 34 - Blends/composites in recycling
Lecture 35 - Physical/chemical crosslinking
Lecture 36 - Mechanical properties - I
Lecture 37 - Mechanical properties - II
Lecture 38 - Physical and chemical aging
Lecture 39 - Solutions
Lecture 40 - Conducting polymers
Lecture 41 - Dielectric response - I
Lecture 42 - Dielectric response - II
Lecture 43 - Plasticity
Lecture 44 - Properties of composites
Lecture 45 - Viscoelasticity
Lecture 46 - Thermal response
Lecture 47 - Viscoelasticity
Lecture 48 - Viscoelasticity
Lecture 49 - Dynamic Mechanical analysis
Lecture 50 - Damping Applications
Lecture 51 - Time Temperature superposition
Lecture 52 - Impact and energy absorption
Lecture 53 - Testing for applications
Lecture 54 - Properties of blends
Lecture 55 - Biomimetic polymers
Lecture 56 - Advanced mechanics
Lecture 57 - Viscoelastic response
Lecture 58 - Polymer packaging
Lecture 59 - Porous polymers/membranes
Lecture 60 - Polymer at interfaces
Lecture 61 - Diffusion in polymers
Lecture 62 - Compatibilizers
Lecture 63 - Biopolymer applications
Lecture 64 - Adhesives and Paints
Lecture 65 - Dissolution and recovery
Lecture 66 - Polymerization kinetics
Lecture 67 - Polymerization reactors
Lecture 68 - Polymer processing - I

Lecture 69 - Polymer processing - II
Lecture 70 - Polymer processing - III
Lecture 71 - Flow simulations
Lecture 72 - Processing for recycling
Lecture 73 - Recycle, up-down cycling - I
Lecture 74 - Recycle, up-down cycling - II
Lecture 75 - Flow behaviour - rheology
Lecture 76 - Crosslinking
Lecture 77 - Conversion of polymers
Lecture 78 - Rheology and entanglement
Lecture 79 - Rheological models
Lecture 80 - Rheology and processing
Lecture 81 - Absorption and leaching
Lecture 82 - Swelling of polymers
Lecture 83 - Viscosity for polymer processing
Lecture 84 - Microplastics, aerosols, sediments
Lecture 85 - Biodegradation of polymers
Lecture 86 - Biodegradable polymers - 1
Lecture 87 - Biodegradable polymers - 2

NPTEL Video Course - Civil Engineering - NOC:Basic Construction Materials

Subject Co-ordinator - Prof. Radhakrishna G. Pillai, Prof. Manu Santhanam

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Introduction to Lean Construction

Subject Co-ordinator - Prof. Koshy Varghese, Prof. N Raghavan

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Course Contents, Long-term Goals, Structure and Module 1 Topics
Lecture 2 - Pedagogy, Approach, Institutions, Instructors, Audience and Pre-requisites
Lecture 3 - ILCE, Conferences, Resources, Further Work Possible
Lecture 4 - Lean Implementation in India from ILCE Directors and other Talks/Testimonials
Lecture 5 - Status of Lean Implementation in India through Industry Panel Discussion with ILCE Directors
Lecture 6 - History of Lean and other Management Philosophies; Toyota Production System (TPS); What is Lean?
Lecture 7 - Lean Construction Timeline; Lean Project Delivery vs LC; Project Management vs LC
Lecture 8 - Key Lean Concepts#1 (Wastes)
Lecture 9 - Key Lean Concepts#1 (Value, Value Stream, Flow, Pull, Perfection)
Lecture 10 - Key Lean Concepts#2 (Continuous Improvement, Collaborative working, Production System, Lean Cult
Lecture 11 - Key Lean Tools#1 (Productivity Measurement System, Work Sampling, Value Stream Mapping)
Lecture 12 - Lean Overview - Key Lean Tools#2 (5S, CPS/ LPS, Big Room Approach)
Lecture 13 - Lean Overview - Future module
Lecture 14 - Productivity Measurement and Improvement, Construction Productivtiy, Productivity levels
Lecture 15 - What is Productivity, Production?; Illustration
Lecture 16 - Productivity and Production Impact; Visualizing Activity Productivity and Production Performance
Lecture 17 - Profit, ROCE, Influences on Operational Productivity; Operational view vs. System view, Summary
Lecture 18 - Outline, Planning and monitoring levels; Productivity Measurement System
Lecture 19 - Measuring Output - Level of Effort (LOE)
Lecture 20 - Productivity and Production Calculations: daily, weekly, cumulative
Lecture 21 - Productivity and Production Calculations: Performance Evaluation
Lecture 22 - Productivity and Production Calculations: Workhour Forecast and Analysis of Trends
Lecture 23 - Factors Influencing Productivity, Productivity Improvement Approach, Summary
Lecture 24 - Sampling/ Surveying Techniques - Data Sources in Construction
Lecture 25 - Construction Activity with Workers doing VA/ NVAN/ NVA; WS vs PMS; Work Sampling
Lecture 26 - Sampling basics, Sampling in construction
Lecture 27 - Steps to Conduct a Work Sampling Study; WS Outcomes
Lecture 28 - Illustration of Tour-based Work Sampling Approach
Lecture 29 - Illustration of Crew-based Work Sampling Approach

Lecture 30 - Explore relationship between WS Categories and Productivity; Summary
Lecture 31 - Sampling/ Surveying Techniques - Foreman delay survey
Lecture 32 - Sampling/ Surveying Techniques - Foreman delay survey - Implementation
Lecture 33 - Foreman delay survey - Illustrations; Comparison - PMS vs WS vs FDS - discussion
Lecture 34 - Value Stream, Value Stream Mapping (VSM), System vs Process, References
Lecture 35 - Illustration: Value and Value Stream in Food Delivery
Lecture 36 - Value, Value Stream, VSM/PM, Language, Basic VSM - current state and future state
Lecture 37 - Key steps for VSM, Work: Degrees of Granularity, Measurement Metrics
Lecture 38 - VSM - Example 1 (Reinforcement)
Lecture 39 - VSM - Example 2 (Blockwork); Summary
Lecture 40 - Flow Process Chart, Symbols, Process mapping - steps and timing, Measurement metrics
Lecture 41 - Process mapping - Illustration: Reinforcement shifting
Lecture 42 - VSM vs PM; Process Flow chart - variations; Swim-lane diagrams; Summary
Lecture 43 - Understand the Basics of 5S, Explanations and 5S Steps
Lecture 44 -
Lecture 45 - Understand Each -S- in Detail - Standardize, Sustain
Lecture 46 - 5S: Key Points, Benefits, Signs of a 5S Site
Lecture 47 - Experiment 5S with Yourself First, Project Implementation, Facilitations, Why 5S May Fail?, Reca
Lecture 48 - Understand the Applications of 5S through Case Studies_2 cases
Lecture 49 - Understand the Applications of 5S through Case Studies_3 cases
Lecture 50 - Understand the Applications of 5S through Case Study - Ms Diamond Barretto (Godrej Construction)
Lecture 51 - Current Project Performance, Workflow Variation, Traditional PM vs Lean Production Management
Lecture 52 - Some Key Lean Concepts, Focusing on frontline Execution, CPS - Collaborative Planning System
Lecture 53 - CPS Process, Overall Schedules (Master Schedule,Phase Schedule,LAP, Weekly Plan),Constraint Anal
Lecture 54 - Collaborative -Pull- Planning, Percentage Plan Completed (PPC), Daily Huddle, Variance Analysis,
Lecture 55 - Lean Work Structuring
Lecture 56 - Impact of PPC on Productivity, Key aspects,Advantages,The Necessary Conditions,Blocks - CPS,Summ
Lecture 57 - COLPLASSE: Look-Ahead Plan, Constraint Analysis, Weekly Plan, Summary
Lecture 58 - Lean Project Delivery System, Conclusion
Lecture 59 - Understand the Applications of CPS/LPS through Case Studies
Lecture 60 - CPS/LPS implementation in Construction Projects through a Panel of Experts - Part 1
Lecture 61 - CPS/LPS implementation in Construction Projects through a Panel of Experts - Part 2
Lecture 62 - CPS/LPS implementation in Construction Projects through a Panel of Experts - Part 3
Lecture 63 - Introduction of Big Room Approach, Some Requirements for Efficient Working, Virtual BR Meetings
Lecture 64 - Big Room Approach through Case Studies
Lecture 65 - Big Room Approach - Implementation case from URC Construction
Lecture 66 - Future Construction Site, Lean Tools and Processes, Automation strategies and impact, Programmir
Lecture 67 - Document Management, Workflow Process, Communication/Collab./Authen., Sensing
Lecture 68 - Mechanisation/ Robots, Visualization, AI/ Analytics, BIM, CPS/ IOT/ Industry 4.0, Digital Twin

Lecture 69 - Challenges and Causes, Problem?, Lean, BIM?, Traditional vs BIM, Tools/Technology providers
Lecture 70 - BIM uses; Metrics
Lecture 71 - BIM and Lean, Implementation Framework, BIM Execution Plan, Evidence Cases, Key takeaway
Lecture 72 - How to Start Practicing Lean Tools in Project Sites-1: Work Sampling
Lecture 73 - How to Start Practicing Lean Tools in Project Sites-1: VSM
Lecture 74 - How to Start Practicing Lean Tools in Project Sites-1: 5S
Lecture 75 - How to Start Practicing Lean Tools in Project Sites-1: CPS/ LPS
Lecture 76 - How to Start Practicing Lean Tools in Project Sites-1: Big Room Approach
Lecture 77 - Acknowledgement

NPTEL Video Course - Civil Engineering - NOC:Design of Connections in Steel Structures

Subject Co-ordinator - Prof. Anil Agarwal

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Analysis and Design of Bituminous Pavements

Subject Co-ordinator - A. Padmarekha, J. Murali Krishnan, M. R. Nivitha, Neethu Roy

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Climate Consideration in Design Procedures
Lecture 31 - Reliability in Pavement Design - Part 1
Lecture 32 - Reliability in Pavement Design - Part 2
Lecture 33 - Reliability in Pavement Design - Part 3
Lecture 34 - Reliability in Pavement Design - Part 4
Lecture 35 - Reliability in Pavement Design - Part 5
Lecture 36 - Reliability in Pavement Design - Part 6
Lecture 37 - Distress Transfer Function - Fatigue Cracking
Lecture 38 - Rutting and Low-Temperature Cracking
Lecture 39 - KENLAYER - Nonlinear Analysis
Lecture 40 - KENLAYER - Damage Analysis
Lecture 41 - IRC design steps
Lecture 42 - Design Input and IITPAVE software
Lecture 43 - Pavement design with granular base
Lecture 44 - Pavement design with CTB
Lecture 45 - Pavement design with RAP Base
Lecture 46 - Overview of Mechanistic-Empirical Pavement Design Methods - IRC
Lecture 47 - Overview of Mechanistic-Empirical Pavement Design Methods - South Africa - Part I
Lecture 48 - Overview of Mechanistic-Empirical Pavement Design Methods - South Africa - Part II
Lecture 49 - Overview of Mechanistic-Empirical Pavement Design Methods - South Africa - Part III
Lecture 50 - Overview of Mechanistic-Empirical Pavement Design Methods - Australia - Part I
Lecture 51 - Overview of Mechanistic-Empirical Pavement Design Methods - Australia - Part II
Lecture 52 - Overview of Mechanistic-Empirical Pavement Design Methods - AASHTO - Part I
Lecture 53 - Overview of Mechanistic-Empirical Pavement Design Methods - AASHTO - Part II
Lecture 54 - Summary of the course and design projects

NPTEL Video Course - Civil Engineering - NOC:FEM and Constitutive Modelling in Geomechanics

Subject Co-ordinator - Prof. K Rajagopal

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Bilinear elastic models
Lecture 31 - Nonlinear elastic and hyperbolic models
Lecture 32 - Modified hyperbolic model and determination of material parameters
Lecture 33 - Stress correction procedures in finite element analysis
Lecture 34 - Numerical examples on working with modified hyperbolic models
Lecture 35 - Some Limit solutions in geotechnical engineering
Lecture 36 - Elastic - Plastic Constitutive Matrix
Lecture 37 - Nonassociated Elastic - Plastic Joint Element
Lecture 38 - Introduction to consolidation and dynamic analysis
Lecture 39 - Cam Clay models
Lecture 40 - Modified cam clay models
Lecture 41 - FEM in Geotechnical applications
Lecture 42 - Soil behaviour and An Introduction to the Existing Soil Models
Lecture 43 - Simulation of soil liquefaction using FLAC
Lecture 44 - Mitigation of soil liquefaction using granular columns

NPTEL Video Course - Civil Engineering - NOC:The Evolution of the Earth and life

Subject Co-ordinator - Prof. Devapriya Chattopadhyay

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:Advanced Reinforced Concrete Design

Subject Co-ordinator - Prof S. Suriya Prakash

Co-ordinating Institute - IIT - Hyderabad

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

NPTEL Video Course - Civil Engineering - NOC:Admixtures and Special Concretes

Subject Co-ordinator - Prof. Manu Santhanam

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Mineral Admixtures: Pozzolonic activity
Lecture 31 - Mineral Admixtures: Electrical Conductivity method, Frattini test and Lime saturation method
Lecture 32 - Mineral Admixtures: Strength Activity test, Lime reactivity test, Mixture Proportioning and R3 t
Lecture 33 - Mineral Admixtures: Flyash - Part 1: Introduction
Lecture 34 - Mineral Admixtures: Flyash - Part 2: Classification and structure
Lecture 35 - Mineral Admixtures: Flyash - Part 3: Effects on fresh concrete
Lecture 36 - Mineral Admixtures: Flyash - Part 4: Effects on hardened concrete
Lecture 37 - Mineral Admixtures: Silica fume - Part 1: Introduction
Lecture 38 - Mineral Admixtures: Silica fume - Part 2: Effects on fresh and hardened concrete
Lecture 39 - Mineral Admixtures: Silica fume - Part 3: Effects on Microstructure + GGBS - Part 1 : Introducti
Lecture 40 - Mineral Admixtures: GGBS - Part 2 : Properties
Lecture 41 - Mineral Admixtures: GGBS - Part 3 : Hydration of slag and Durability of slag cements
Lecture 42 - Mineral Admixtures: Metakaolin
Lecture 43 - Mineral Admixtures: LC3 - Part 1 : Introduction
Lecture 44 - Mineral Admixtures: LC3 - Part 2 : Comparision with other SCMs
Lecture 45 - Mineral Admixtures: LC3 - Part 3 : Durability Performance
Lecture 46 - Mineral Admixtures: Agricultural ashes - Part 1 : Sugarcane bagasse ash
Lecture 47 - Mineral Admixtures: Agricultural ashes - Part 2 : Rice husk ash
Lecture 48 - Mineral Admixtures: Calorimeter
Lecture 49 - Mineral Admixtures: Pore solution analysis
Lecture 50 - Mineral Admixtures: CASH analysis in blended system and Life cycle assessment of concrete - Part
Lecture 51 - Life cycle assessment of concrete - Part 2
Lecture 52 - Life cycle assessment of concrete - Part 3
Lecture 53 - Special concretes - High strength concrete - Definition, design and concept of particle packing
Lecture 54 - Special concretes - High strength concrete - Particle packing models
Lecture 55 - Special concretes - High strength concrete - Mix designs, strength and durability
Lecture 56 - Special concretes - High strength concrete - Design attributes, fresh and hardened properties
Lecture 57 - Special concretes - High strength concrete - Stress:strain relationships, applications
Lecture 58 - Special concretes - Ultra high performance concrete - Design principles, strength, durability
Lecture 59 - Special concretes: Self compacting concrete -Introduction, design requirements and plastic shrin
Lecture 60 - Special concretes: Self compacting concrete - Segregation and laboratory tests
Lecture 61 - Special concretes - Self Compacting Concrete - Workability test methods, classifications and iss
Lecture 62 - Special concretes - Self Compacting Concrete - Design principles, mix designs, concrete properti
Lecture 63 - Special concretes - Mass concrete - Introduction, materials, thermal cracking
Lecture 64 - Special concretes - Mass concrete - Design guidelines, temperature differential measurement
Lecture 65 - Special concretes - Mass concrete - Temperature differential measurement, Design
Lecture 66 - Special concretes - Mass concrete - Temperature monitoring, nomogram, minimizing restraints
Lecture 67 - Special concretes - Mass concrete - Heat modelling
Lecture 68 - Special concretes - Lightweight concrete - Introduction, classifications

Lecture 69 - Special concretes - Lightweight concrete - Foamed concrete, lightweight aggregates
Lecture 70 - Special concretes - Lightweight concrete - Light weigh aggregates, aerated concrete
Lecture 71 - Special concretes - High density concrete - Heavy weight aggregates, design, case stud
Lecture 72 - Special concretes - Concrete for 3D printing - Introduction, classification, printing process
Lecture 73 - Special concretes - Concrete for 3D printing - Developments, advantages, case study
Lecture 74 - Special concretes - Concrete for 3D printing - Critical parameters, yield stress
Lecture 75 - Special concretes - Concrete for 3D printing - Mix design approach, admixtures
Lecture 76 - Special concretes - Concrete for 3D printing - Failure modes, buildability, early-age beahaviour

NPTEL Video Course - Civil Engineering - NOC:Advanced Topics in Science and Technology of Concrete

Subject Co-ordinator - Prof. Ravindra Gettu, Prof. Manu Santhanam

Co-ordinating Institute - IIT - Madras

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

NPTEL Video Course - Civil Engineering - NOC:An Introduction to Climate Dynamics, Variability and Monitoring

Subject Co-ordinator - Prof. Sayak Banerjee

Co-ordinating Institute - IIT - Hyderabad

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

Lecture 1 - Introduction to Climate Dynamics, Variability and Monitoring - Part 1
Lecture 2 - Introduction to Climate Dynamics, Variability and Monitoring - Part 2
Lecture 3 - Climatic Variables of the Atmosphere
Lecture 4 - Atmospheric Layers; Troposphere; Temperature Lapse Rate
Lecture 5 - Atmospheric Structure and Composition
Lecture 6 - Atmospheric Gas Concentration and introduction to Atmospheric Pressure
Lecture 7 - Atmospheric Pressure and Mass
Lecture 8 - How to Measure Vertical Variation of Pressure
Lecture 9 - Fundamentals of Atmospheric Humidity and Weather Variables
Lecture 10 - Advanced Atmospheric Humidity Concepts Contours and Key Relationships
Lecture 11 - Virtual Temperature and Atmospheric Stability Concepts
Lecture 12 - Understanding Atmospheric Stability Adiabatic Relations and Lapse Rate
Lecture 13 - Potential Temperature, Adiabatic Lapse Rate of Moist Air, Three Possible Stability Relationships
Lecture 14 - Derivation of Potential Temperature, Deriving the Expression for Saturated Adiabatic Lapse Rate
Lecture 15 - Temperature Variation With Changes in Vertical Pressure
Lecture 16 - Temperature Gradient of Dry and Saturated Air Parcel, Earth Sun Relationship
Lecture 17 - Fundamentals of Earth'S Climate System Latitude, Longitude, and Temperature Dynamics
Lecture 18 - Understanding Earth'S Seasons Axial Tilt, Solstice, and Equinox Dynamics
Lecture 19 - Mean Emission Temperature of Earth and the Greenhouse Effect - Part 1
Lecture 20 - Mean Emission Temperature of Earth and the Greenhouse Effect - Part 2
Lecture 21 - Mean Emission Temperature of Earth and the Greenhouse Effect - Part 3
Lecture 22 - Net Radiative Flux Imbalance Annual Averaged and Seasonal
Lecture 23 - Derivation of Beam Spreading Effect, Derivation of the Greenhouse Effect
Lecture 24 - Derivation of Analysing the Atmosphere of Venus, Radiation Fluxes
Lecture 25 - Principles of Electromagnetic Radiation Spectral Intensity, Irradiance, and Material Interactior
Lecture 26 - Blackbody Radiation Relations
Lecture 27 - Atmospheric Absorption and Radiative Transfer
Lecture 28 - 28 Radiative Transfer in the Atmosphere Key Concepts
Lecture 29 - Infrared Radiative Transfer in the Earth'S Atmosphere

Lecture 30 - Radiative Flux and Optical Depth
Lecture 31 - Introduction to Atmospheric Heating and Heat Balance
Lecture 32 - Advanced Atmospheric Heating and Heat Balance
Lecture 33 - Temperature Distribution for a Continuously Stratified Atmosphere in Radiative Equilibrium - Par
Lecture 34 - Temperature Distribution for a Continuously Stratified Atmosphere in Radiative Equilibrium - Par
Lecture 35 - Temperature Distribution and Greenhouse Effect in a Continuously Stratified Atmosphere
Lecture 36 - Atmospheric Circulation Systems - Basic Concepts
Lecture 37 - Atmospheric Circulation Systems - Coriolis Forces
Lecture 38 - Atmospheric Circulation Systems - Pressure Forces
Lecture 39 - Atmospheric Circulation Systems - Frictional Forces and Surface Level Winds
Lecture 40 - Atmospheric Circulation Systems - High Level Winds
Lecture 41 - Seasonal Shifts - Advanced Concepts
Lecture 42 - The Ocean and the Climate
Lecture 43 - Ocean Salinity and Mixing Layer
Lecture 44 - Importance of Mixing Layer and Wind Driven Surface Current
Lecture 45 - Ocean Circulation and Deep Oceanic thermohaline Circulation
Lecture 46 - Coupled Ocean Atmosphere Variability
Lecture 47 - Global Temperature Model, Radiative Forcing and Zero Dimensional Energy Balance Model
Lecture 48 - Zero Dimensional Energy Balance Model (Continued...)
Lecture 49 - Energy Balance Model and Temperature Responce to Radiative Forcing
Lecture 50 - Temperature Responce to Radiative Forcing (Continued...)
Lecture 51 - Planck Feedback or Blackbody Radiative Feedback, Simple Radiative Balance Model
Lecture 52 - Indirect Feedback: Water Vapour Feedback and Spectral Outgoing Longwave Radiation
Lecture 53 - Absorption of Outgoing Longwave Radiation By Atmospheric CO2
Lecture 54 - Introduction to Principles of Measurement and Instrumentation - Part 1
Lecture 55 - Introduction to Principles of Measurement and Instrumentation - Part 2
Lecture 56 - Introduction to Principles of Measurement and Instrumentation - Part 3
Lecture 57 - Automatic Weather Stations, Temperature Measurements and Humidity Measurements
Lecture 58 - Humidity Measurements and Pressure Measurements
Lecture 59 - Wind Measurements Techniques
Lecture 60 - Radiation and Temperature Measurements - Part 1
Lecture 61 - Radiation and Temperature Measurements - Part 2
Lecture 62 - Radiation and Precipitation Measurements
Lecture 63 - Upper Air Measurements
Lecture 64 - Remote Sensing: Climatological Applications
Lecture 65 - Types of Satellite Orbit and its Remote Sensing Applications, VNIR Imaging through Electro Optic
Lecture 66 - Spatial and Spectral Resolution of Satellite Imagery and Application of VNIR Imaging in Climatol
Lecture 67 - Application of VNIR Imaging in Climatology and Thermal Infrared Imaging Systems
Lecture 68 - Cloud Detection, Nadir Viewing, Limb Sounding, Solar Occultation

Lecture 69 - Ground Based Atmospheric Remote Sounding

NPTEL Video Course - Civil Engineering - NOC:Indoor Air Pollution: Sources, Effects, Monitoring, Control and

Subject Co-ordinator - Prof. Asif Qureshi

Co-ordinating Institute - IIT - Hyderabad

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

Lecture 30 - TIme-activity and inhalation risk assessment
Lecture 31 - Examples
Lecture 32 - Indoor air pollution monitoring of physico-chemical pollutants: Introduction and sampling method
Lecture 33 - Indoor air pollution sampling and instruments
Lecture 34 - Indoor air pollutants analysis - 1
Lecture 35 - Indoor air pollutants analysis - 2
Lecture 36 - Indoor bioaerosol sampling methods - 1
Lecture 37 - Indoor bioaerosol sampling methods - 2
Lecture 38 - Methods for bioaerosol analysis - 1
Lecture 39 - Methods for bioaerosol analysis - 2
Lecture 40 - Guest lecture: Case study on comparison of two methdos for indoor bioaerosol sampling and analys
Lecture 41 - Indoor Air Pollution/Quality in the Indian Context
Lecture 42 - Indoor Air Quality in India - Case studies 1
Lecture 43 - Indoor Air Quality in India - Case studies 2
Lecture 44 - Guest lecture: Case study on bioaerosols in Indian indoor environment
Lecture 45 - Indoor Air Quality in India - Overview and Gaps
Lecture 46 - Indoor air quality guidelines and control: Introduction
Lecture 47 - IAQ guidelines and control: Ventilation
Lecture 48 - IAQ control methods
Lecture 49 - Introduction to Contam
Lecture 50 - Indoor air pollution effects: sick building syndrome
Lecture 51 - Managing indoor air quality
Lecture 52 - Air pollution control methods
Lecture 53 - Modeling Example

NPTEL Video Course - Civil Engineering - NOC:Geophysical Exploration Methods

Subject Co-ordinator - Prof. Elango Lakshmanan

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Geophysics for tunneling and Dam Construction - Expert Lectuer by Dr Sanjay Rana - 1
Lecture 31 - Geophysics for tunneling and Dam Construction - Expert Lectuer by Dr Sanjay Rana - 2
Lecture 32 - Seismic Reflection Method
Lecture 33 - Seismic Reflection Applications and Case Studies - 1
Lecture 34 - Seismic Reflection Applications and Case Studies - 2
Lecture 35 - Expert Lectuer (Seismic Exploration) - Dr. N. Satyavani, NGRI
Lecture 36 - Multichannel Analysis of Surface Waves (MASW)
Lecture 37 - MASW - Case Studies
Lecture 38 - Expert Lectuer (MASW) - Dr.K. Satish Kumar, NGRI
Lecture 39 - Gravity Methods Introduction
Lecture 40 - Gravity Method Principle and Types of Gravity Measurements
Lecture 41 - Types of Gravimeters
Lecture 42 - Calibration and Drift Correction
Lecture 43 - Gravity data reduction or Correction - 1
Lecture 44 - Gravity data reduction or Correction - 2
Lecture 45 - Gravity Method (Interpretation) - Quantitative Methods
Lecture 46 - Gravity Method indirect interpretation
Lecture 47 - Gravity Method Application and Case Studies
Lecture 48 - Gravity Recovery and Climate Experiment (GRACE Mission)
Lecture 49 - GRACE - Case Studies
Lecture 50 - Magnetic Methods Introduction
Lecture 51 - Magnetometers
Lecture 52 - Interpretation and Case studies
Lecture 53 - Expert Lectuer - Prof.N. Sundararajan
Lecture 54 - Ground Penetrating Radar
Lecture 55 - GPR - Field Demonstration
Lecture 56 - Synthetic Aperture Radar (SAR)
Lecture 57 - Surface Nuclear Magnetic Resonance - 1
Lecture 58 - Surface Nuclear Magnetic Resonance - 2
Lecture 59 - Expert Lectuer - Dr. Pramod Kumar Sharma
Lecture 60 - Radioactive Methods
Lecture 61 - Geophysical Well Logging methods - I
Lecture 62 - Geophysical Well Logging Methods - II
Lecture 63 - Induction Log
Lecture 64 - Radiometric logging and applications
Lecture 65 - Other logging methods - Sonic, Caliper, Temperature
Lecture 66 - Fluid conductivity and NMR logging
Lecture 67 - Bore Hole Camera and Summary of Logging methods
Lecture 68 - Answers to the Questions

NPTEL Video Course - Civil Engineering - NOC:Stability Aspects of Structural Steel Design: Concepts and Appli

Subject Co-ordinator - Prof. Mahendrakumar Madhavan

Co-ordinating Institute - IIT - Hyderabad

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

Lecture 30 - Strain energy method for obtaining critical stress for plates
Lecture 31 - Strain energy method for obtaining critical stress for plates under different loading conditions
Lecture 32 - Generic equations for elastic plate buckling coefficient, k
Lecture 33 - Development of width-to-thickness ratio limits
Lecture 34 - Concept of post critical buckling
Lecture 35 - Deriving the effective width of a plate under uniform compression as per AISI S100
Lecture 36 - Problem solving: Effective Width Method (EWM)
Lecture 37 - Tension Field Action in Plate girder - An application of post-critical buckling in thin plates
Lecture 38 - Deriving the design equations in IS 800:2007 for Simple post-critical method and Tension field m
Lecture 39 - Design of a plate girder-A design example - Part 1
Lecture 40 - Design of a plate girder-A design example - Part 2
Lecture 41 - Curved plate girders: An overview of fabrication and construction
Lecture 42 - Importance of steel structures

NPTEL Video Course - Civil Engineering - Construction Economics and Finance

Subject Co-ordinator - Prof. Nikhil Bugalia

Co-ordinating Institute - IIT Madras

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

NPTEL Video Course - Civil Engineering - NOC:Advanced Prestressed Concrete Design

Subject Co-ordinator - Prof. S. Suriya Prakash

Co-ordinating Institute - IIT - Hyderabad

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

Lecture 69 - PT one-way slabs
Lecture 70 - Two way PT slab
Lecture 71 - Design criteria fot PT slabs
Lecture 72 - Equivalent frame method
Lecture 73 - Capacity of two-way slabs
Lecture 74 - Design example of PT slab - prelimary design
Lecture 75 - Design example of PT slab - equivalent frame analysis
Lecture 76 - Design example of PT slab - design checks
Lecture 77 - Importance of external post-tensioning system for strengthening applications
Lecture 78 - Applications of external post-tensiong system for strengthening
Lecture 79 - Analysis-design considerations and case studies of external post-tensioning strengthening system

NPTEL Video Course - Civil Engineering - NOC:Sustainable Groundwater Management

Subject Co-ordinator - Prof. Elango Lakshmanan

Co-ordinating Institute - IIT Madras

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

Lecture 30 - Policy and Management Approaches for Sustainable Groundwater Recharge
Lecture 31 - Policy and Management Approaches for Sustainable Groundwater Recharge
Lecture 32 - Hydrochemistry and Groundwater Quality
Lecture 33 - Chemical Parameters and Composition of Groundwater
Lecture 34 - Groundwater Sampling and Chemical Data Representation
Lecture 35 - Geochemical Changes in Groundwater
Lecture 36 - MAR and Geochemical process
Lecture 37 - Groundwater Quality Criteria
Lecture 38 - Application of Isotopes in Groundwater Sustainability
Lecture 39 - Application of Isotopes in Groundwater Sustainability
Lecture 40 - Artificial isotopes as tracers
Lecture 41 - Groundwater Management and Contamination
Lecture 42 - Type of contaminants - 1
Lecture 43 - Type of contaminants - 2
Lecture 44 - Health Risk Assessment
Lecture 45 - Sustainable Mangement for addressing Groundwater Contamination
Lecture 46 - Applications of Isotopic Techniques in Groundwater Hydrology
Lecture 47 - Coastal Aquifers and Seawater Intrusion : Part I
Lecture 48 - Coastal Aquifers and Seawater Intrusion : Part II
Lecture 49 - Different Methods of Identification of Coastal Salinisation
Lecture 50 - Methods of Prevention/Limiting Seawater Intrusion
Lecture 51 - Sustainable management of coastal Aquifers
Lecture 52 - Groundwater Modelling for sustainable management
Lecture 53 - Numerical Approaches in Groundwater Modelling
Lecture 54 - Solute Transport Process and Stages of Modelling
Lecture 55 - Case Studies on Groundwater Modelling - South Chennai - Part I
Lecture 56 - Case Studies on Groundwater Modelling - South Chennai - Part II
Lecture 57 - Urban and Agricultural Management
Lecture 58 - Urban Groundwater Pollution, Governance, and Management
Lecture 59 - Methods of Urban Aquifer Recharge and Water Pricing : Case studies
Lecture 60 - Sustainable Groundwater Use in Agriculture
Lecture 61 - Sustainable Irrigation Practices
Lecture 62 - Water Audit : Concept and Importance
Lecture 63 - Expert Lectuer 1 - Integrated Water Resources Management (IWRM) Concepts, Challenges, and Oppurt
Lecture 64 - Expert Lectuer 2 - Groundwater Sustainability Interaction of Science and Policy
Lecture 65 - Governance, Policy and Institutional Frameworks - Part I
Lecture 66 - Governance, Policy and Institutional Frameworks - Part II
Lecture 67 - Urban Water and Agricultural Water Efficiency
Lecture 68 - Case Studeis : Rural and Urban Solutions

NPTEL Video Course - Civil Engineering - NOC:Climate Change - Extreme Events

Subject Co-ordinator - Prof. Somil Swarnkar

Co-ordinating Institute - IISER Bhopal

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

NPTEL Video Course - Civil Engineering - Foundation Engineering

Subject Co-ordinator - Prof. Priti Maheswari, Prof. N.K. Samadhiya, Prof. Mahendra Singh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Foundation Engineering - 4
Lecture 31 - Foundation Engineering - 5
Lecture 32 - Foundation Engineering - 6
Lecture 33 - Foundation Engineering - 7
Lecture 34 - Foundation Engineering - 8
Lecture 35 - Foundation Engineering - 9
Lecture 36 - Foundation Engineering - 10
Lecture 37 - Foundation Engineering - 11
Lecture 38 - Foundation Engineering - 12
Lecture 39 - Foundation Engineering - 13
Lecture 40 - Foundation Engineering - 14

NPTEL Video Course - Civil Engineering - Modern Surveying Techniques

Subject Co-ordinator - Prof. S.K. Ghosh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - GIS Data Model
Lecture 31 - GIS Data Base
Lecture 32 - Spatial Analysis
Lecture 33 - Map Overlay and Spatial Correlation
Lecture 34 - Application to Drought Management
Lecture 35 - GIS base planning model for educational facilities in rural areas
Lecture 36 - Application extraction of building attributes
Lecture 37 - Zonal based tourism planning
Lecture 38 - Zonal Planning using remote sensing
Lecture 39 - Municipal GIS for assassment of property tax
Lecture 40 - Application of remote sensing

NPTEL Video Course - Civil Engineering - Transportation Engineering II

Subject Co-ordinator - Prof. Rajat Rastogi

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Airport Obstructions
Lecture 31 - Runway Orientation
Lecture 32 - Runway Length
Lecture 33 - Runway Geometric
Lecture 34 - Taxiway
Lecture 35 - Exit Taxiway
Lecture 36 - Aprons and Aircraft Parking
Lecture 37 - Terminal Area and Building
Lecture 38 - Terminal Planning and Hangers
Lecture 39 - Visual Aids-Markings
Lecture 40 - Visual Aids-Lighting and Signage

NPTEL Video Course - Civil Engineering - NOC:Introduction to Geographic Information Systems

Subject Co-ordinator - Dr.Arun K.Saraf

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Principles and Applications of Building Science

Subject Co-ordinator - Dr. E. Rajasekar

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Solar Geometry
Lecture 2 - Climate Classification
Lecture 3 - Thermal Comfort in Built Environment - 1
Lecture 4 - Thermal Comfort in Built Environment - 2
Lecture 5 - Thermal Adaptation
Lecture 6 - Bioclimatic Assessment
Lecture 7 - Thermal Performance of Building Envelop
Lecture 8 - Thermal Performance of Building Envelop - Indices and Measures (1/2)
Lecture 9 - Thermal Performance of Building Envelop - Indices and Measures (2/2)
Lecture 10 - Glazing and Shading Systems
Lecture 11 - Shading Analysis
Lecture 12 - Energy Efficiency and Simulation
Lecture 13 - Building Acoustics - Basics
Lecture 14 - Sound Propagation
Lecture 15 - Acoustic Quality Indicators (1/2)
Lecture 16 - Acoustic Quality Indicators (2/2)
Lecture 17 - Acoustic Design Considerations
Lecture 18 - Acoustic Materials
Lecture 19 - Lighting - Basics
Lecture 20 - Lighting Â Design Concepts

NPTEL Video Course - Civil Engineering - NOC:GPS Surveying

Subject Co-ordinator - Dr.Jayanta Kumar Ghosh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Introduction (GPS Surveying and Applications)
Lecture 2 - GPS System
Lecture 3 - GPS Signal (Civilian Perspective)
Lecture 4 - GPS Receiver
Lecture 5 - GPS Software
Lecture 6 - GPS Position
Lecture 7 - GPS Positioning (Principle and Methods)
Lecture 8 - Field demonstration of GPS Positioning Method
Lecture 9 - GPS Observables (Types, Errors and Quality)
Lecture 10 - Errors in GPS Observables (Systematics Errors)
Lecture 11 - GPS Data Pre-Processing - I
Lecture 12 - GPS Data Pre-Processing - II
Lecture 13 - GPS Data Processing - I
Lecture 14 - GPS Data Processing - II
Lecture 15 - Quality Assessment of GPS Surveying
Lecture 16 - Procedure of GPS Surveying - I
Lecture 17 - Procedure of GPS Surveying - II
Lecture 18 - Procedure of GPS Surveying - III
Lecture 19 - GPS Field Surveying
Lecture 20 - GPS Data Processing

NPTEL Video Course - Civil Engineering - NOC:Digital Land Surveying And Mapping

Subject Co-ordinator - Prof. Jayanta Kumar Ghosh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Contouring
Lecture 31 - Mapping Fundamentals
Lecture 32 - Mapping Basics
Lecture 33 - Mapping Software
Lecture 34 - Automated Mapping
Lecture 35 - Working Steps
Lecture 36 - Establishment of Control Point
Lecture 37 - Detailing of Digital Land Surveying
Lecture 38 - Demonstration of Digital Land Survey Detailing
Lecture 39 - Data Preparation and Map Making
Lecture 40 - Overview of the Course

NPTEL Video Course - Civil Engineering - NOC:Digital Image Processing of Remote Sensing Data

Subject Co-ordinator - Dr.Arun K.Saraf

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Remote-sensing Image and How it is represented
Lecture 2 - Different Techniques of Image Acquisition
Lecture 3 - Why is Digital Image processing Important ?
Lecture 4 - Image characteristics and Different Resolutions in Remote Sensing
Lecture 5 - Electromagnetic spectrum, solar reflection, and thermal emission
Lecture 6 - Color Representation and Transformations
Lecture 7 - Image histograms and statistics
Lecture 8 - Geo-referencing Techniques
Lecture 9 - Image Enhancement Techniques part 1
Lecture 10 - Image Enhancement Techniques part 2
Lecture 11 - Multispectral Transform, Scatter Plot, Principal Component Analysis and Decorrelation Stretch
Lecture 12 - Spatial Filtering Techniques
Lecture 13 - Frequency Domain Fourier Transformation
Lecture 14 - Basic Image Compression Techniques and Different Image File Formats
Lecture 15 - Image Classification Techniques
Lecture 16 - Principles of Image Interpretation
Lecture 17 - SAR Interferometry (InSAR) Techniques
Lecture 18 - Image Merging and Image Mosaicing Techniques
Lecture 19 - Application of Image Analysis
Lecture 20 - Limitations and Future of Digital Image Processing

NPTEL Video Course - Civil Engineering - NOC:Applied Environmental Microbiology

Subject Co-ordinator - Dr. Gargi Singh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Applied Environmental Microbiology
Lecture 31 - Techniques in Environmental Microbiology - I
Lecture 32 - Techniques in Environmental Microbiology - II
Lecture 33 - Bioremediation - I
Lecture 34 - Bioremediation - II
Lecture 35 - Bioremediation - III
Lecture 36 - Wastewater Microbiology - I
Lecture 37 - Wastewater Microbiology - II
Lecture 38 - Built Microbiology
Lecture 39 - Exposomes - I
Lecture 40 - Exposomes - II
Lecture 41 - Drinking Water Microbiology - I
Lecture 42 - Drinking Water Microbiology - II
Lecture 43 - Drinking Water Microbiology - III
Lecture 44 - Drinking Water Microbiology - IV
Lecture 45 - Drinking Water Microbiology - V
Lecture 46 - Solid Waste Microbiology - I
Lecture 47 - Solid Waste Microbiology - II
Lecture 48 - Solid Waste Microbiology - III
Lecture 49 - Antimicrobial Resistance - I
Lecture 50 - Antimicrobial Resistance - II
Lecture 51 - Epidemiology - I
Lecture 52 - Epidemiology - II
Lecture 53 - Biosensors - I
Lecture 54 - Biosensors - II
Lecture 55 - Biosensors - III
Lecture 56 - Bioinformatics - I
Lecture 57 - Bioinformatics - II
Lecture 58 - Bioinformatics - III
Lecture 59 - Bioinformatics - IV
Lecture 60 - Bioinformatics - V

NPTEL Video Course - Civil Engineering - NOC:Digital Elevation Models and Applications

Subject Co-ordinator - Prof. Arun K. Saraf

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Environmental Engineering-Chemical Processes

Subject Co-ordinator - Prof. Bhanu Prakash Vellanki

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Environmental Remediation of Contaminated Sites

Subject Co-ordinator - Prof. Bhanu Prakash Vellanki, Prof. Thomas Boving

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Case study: Natural Attenuation
Lecture 31 - Results of Case Study: Natural Attenuation
Lecture 32 - Introduction of Soil/Sediments contamination with some examples
Lecture 33 - Case Study: Soil/Sediments Contamination and remediation by Excavation and Disposal
Lecture 34 - Hazardous waste disposal site/TSDF
Lecture 35 - Different type of fluxes through containment barrier
Lecture 36 - Introduction to Solidification and Stabilisation and Case Study
Lecture 37 - Different contaminant reactions during solidification and stabilisation
Lecture 38 - Diffusion of contaminant through solidified form
Lecture 39 - Calculations for fractions of binders, admixtures, waste and water used in solidification
Lecture 40 - Discussion of TCLP approach in solidification and its examples
Lecture 41 - Discussion of TCLP approach (contd.) and Cost estimation of Solidification
Lecture 42 - Case Study: Solidification and Stabilization
Lecture 43 - Chemical Treatment
Lecture 44 - Case Study: In-Situ Chemical Oxidation - Part I
Lecture 45 - Case Study: In-Situ Chemical Oxidation - Part II
Lecture 46 - Case Study: In-Situ Chemical Oxidation - Part III
Lecture 47 - Surfactant Extraction - Part I
Lecture 48 - Surfactant Extraction - Part II
Lecture 49 - Case Study: Surfactant Extraction - Part I
Lecture 50 - Case Study: Surfactant Extraction - Part II
Lecture 51 - Soil Vapor Extraction - Part I
Lecture 52 - Soil Vapor Extraction - Part II
Lecture 53 - Bioremediation - Part I
Lecture 54 - Bioremediation - Part II
Lecture 55 - Case Study: Bioremediation
Lecture 56 - Case Study: Soil Vapor Extraction - Part I
Lecture 57 - Case Study: Soil Vapor Extraction - Part II
Lecture 58 - Phyto-remediation
Lecture 59 - Conceptual Site Model
Lecture 60 - Adaptive Design in Remediation Engineering
Lecture 61 - Solubilization Theory - Part I
Lecture 62 - Solubilization Theory - Part II
Lecture 63 - Enhanced Aquifer Flushing Technologies

NPTEL Video Course - Civil Engineering - NOC:Global Navigation Satellite Systems and Applications

Subject Co-ordinator - Prof. Arun K. Saraf

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Geomorphology

Subject Co-ordinator - Prof. Pitambar Pati

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Dune Classification - I
Lecture 31 - Dune Classification - II
Lecture 32 - Coastal Geomorphology - I
Lecture 33 - Coastal Geomorphology and Landforms
Lecture 34 - Coastal Geomorphology - II
Lecture 35 - Coastal Geomorphology - III
Lecture 36 - Shoreline Platform
Lecture 37 - Coastal Geomorphology - IV
Lecture 38 - Coastal Geomorphology - V
Lecture 39 - Coastal Geomorphology - VI
Lecture 40 - Coastal Geomorphology - VII
Lecture 41 - Coastal Geomorphology - VIII
Lecture 42 - Coastal Geomorphology - IX
Lecture 43 - Tectonic Geomorphology
Lecture 44 - Fluvial Process
Lecture 45 - Fluvial Process - I
Lecture 46 - Fluvial Process - II
Lecture 47 - Fluvial Process - III
Lecture 48 - Fluvial Process - IV
Lecture 49 - Fluvial Process - V and Drainage Analysis
Lecture 50 - Fluvial Process - VI and Drainage Analysis
Lecture 51 - Fluvial Geomorphology River System - I
Lecture 52 - Fluvial Geomorphology River System - II
Lecture 53 - Glacial Geomorphology - I
Lecture 54 - Glacial Geomorphology - II (Valley Glacier)
Lecture 55 - Glacial Geomorphology - III
Lecture 56 - Glacial Geomorphology - IV (Geomorphic Changes by Glacier)
Lecture 57 - Exploration Geomorphology in Oil field Sandbody Geometry - I
Lecture 58 - Exploration Geomorphology in Oil Field Sandbody Geometry - II
Lecture 59 - Seismic Geomorphology - I
Lecture 60 - Seismic Geomorphology - II

NPTEL Video Course - Civil Engineering - NOC:Remote Sensing Essentials

Subject Co-ordinator - Dr.Arun K.Saraf

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Rudiments of Remote Sensing and Advantages
Lecture 2 - Historical Perspective of development of remote sensing technology
Lecture 3 - EM spectrum, solar reflection and thermal emission
Lecture 4 - Interaction of EM radiation with atmosphere including atmospheric scattering, absorption and emis
Lecture 5 - Interaction mechanisms of EM radiation with ground, spectral response curves
Lecture 6 - Laws of Radiation and their relevance in Remote Sensing
Lecture 7 - Basis of remote sensing image representation
Lecture 8 - Various Remote Sensing Platforms
Lecture 9 - Multi-spectral scanners and imaging devices
Lecture 10 - Significant characteristics of LANDSAT, SPOT, Sentinel sensors
Lecture 11 - Prominent characteristics of IRS, Cartosat, ResourceSat sensors
Lecture 12 - Unmanned Aerial Vehicle/Drone
Lecture 13 - Passive Microwave Remote Sensing
Lecture 14 - Image characteristics and different resolutions in Remote Sensing
Lecture 15 - Different techniques of Image acquisition
Lecture 16 - Importance of digital image processing
Lecture 17 - Digital Image Processing Software
Lecture 18 - Basic image enhancement techniques
Lecture 19 - Colour representations and transformtions
Lecture 20 - Image Histograms and statistics
Lecture 21 - Atmospheric errors and corrections
Lecture 22 - Geometric transformations/Geo-referencing Technique
Lecture 23 - Digital Image Processing Software Demonstration - 1
Lecture 24 - Image enhancement techniques - 1
Lecture 25 - Image enhancement techniques - 2
Lecture 26 - Digital Image Processing Software Demonstration - 2
Lecture 27 - Spatial Filtering Techniques, Band rationing and PCA
Lecture 28 - Frequency Doman Fourier Transformation
Lecture 29 - Digital Image Processing Software Demonstration - 3

Lecture 30 - Unsupervised image classification and density slicing techniques
Lecture 31 - Supervised image classification techniques and limitations
Lecture 32 - Digital Image Processing Software Demonstration - 4
Lecture 33 - LiDAR Technique and applications
Lecture 34 - Mosaicking, subsets, sub-sampling techniques and applications
Lecture 35 - False Topographic Phenomena and correction techniques - 1
Lecture 36 - False Topographic Phenomena and correction techniques - 2
Lecture 37 - High Spatial Resolution Satellite Images and limitations
Lecture 38 - Basic Image Compression techniques and different image file formats
Lecture 39 - Hyperspectral Remote Sensing
Lecture 40 - Digital Image vs Digital Photograph
Lecture 41 - NDVI and other indices
Lecture 42 - Active Microwave Remote Sensing - 1
Lecture 43 - Active Microwave Remote Sensing - 2
Lecture 44 - Radar Images interpretation and applications
Lecture 45 - SAR Interferometry (InSAR) Technique - 1
Lecture 46 - SAR Interferometry (InSAR) Technique - 2
Lecture 47 - Principles of image interpretation
Lecture 48 - Image interpretation of different geological landforms, rock types and structures
Lecture 49 - Remote Sensing of Moon and Mars
Lecture 50 - Google Earth and its Applications
Lecture 51 - Integrated applications of RS and GIS in groundwater studies - 1
Lecture 52 - Integrated applications of RS and GIS in groundwater studies - 2
Lecture 53 - Applications of Remote Sensing in Earthquake Studies - 1
Lecture 54 - Applications of Remote Sensing in Earthquake Studies - 2
Lecture 55 - Different sources of free satellite images
Lecture 56 - Limitations of Remote Sensing Techniques

NPTEL Video Course - Civil Engineering - NOC:Earthquake Resistant Design of Foundations

Subject Co-ordinator - Prof. B. K. Maheshwari

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Geographic Information Systems

Subject Co-ordinator - Prof. Arun K. Saraf

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Demonstration through GIS software
Lecture 31 - Spatial database systems and their types - 2
Lecture 32 - Concept of NoData in Raster
Lecture 33 - Different map projections
Lecture 34 - Concept of digital elevation model (DEM) and how it is represented
Lecture 35 - Demonstration through GIS software
Lecture 36 - Various techniques to generate digital elevation model - 1
Lecture 37 - Various techniques to generate digital elevation model - 2
Lecture 38 - Various techniques to generate digital elevation model - 3
Lecture 39 - Digital Elevation Models and different types of resolutions
Lecture 40 - Demonstration through GIS software
Lecture 41 - How to assess quality of a DEM?
Lecture 42 - Integration of DEMs with satellite data
Lecture 43 - Demonstration through GIS software...
Lecture 44 - Common derivatives of DEMs - Slope and aspect - 1
Lecture 45 - Common derivatives of DEMs - Slope and aspect - 2
Lecture 46 - Common derivatives of DEMs - Slope and aspect - 3
Lecture 47 - Demonstration through GIS software
Lecture 48 - DEMs derivatives - 1
Lecture 49 - DEMs derivatives - 2
Lecture 50 - DEMs derivatives - 3
Lecture 51 - DEMs derivatives - 4
Lecture 52 - Shaded relief models and their applications
Lecture 53 - DEM based Surface Hydrologic Modelling - 1
Lecture 54 - DEM based Surface Hydrologic Modelling - 2
Lecture 55 - DEMs and Dam Simulation and its application in groundwater hydrology
Lecture 56 - Applications of DEMs in Viewshed and Flood Hazard Mapping
Lecture 57 - Applications of DEMs in solar and wind energy potential estimations
Lecture 58 - DEMs Sources, limitations and future of Digital Elevation Models
Lecture 59 - Errors in GIS and key elements of maps
Lecture 60 - Limitations of GIS

NPTEL Video Course - Civil Engineering - NOC:Water and Waste Water Treatment

Subject Co-ordinator - Prof. Bhanu Prakash Vellanki

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Disinfection By-products (DBPs) and Disinfectant Removal
Lecture 31 - Water demand
Lecture 32 - Water Quality Parameters
Lecture 33 - Overview of Water Treatment
Lecture 34 - Physico-Chemical treatment
Lecture 35 - Coagulation - I
Lecture 36 - Coagulation - II
Lecture 37 - Rapid Mixing
Lecture 38 - Flocculation - I
Lecture 39 - Flocculation - II
Lecture 40 - Flocculent settling
Lecture 41 - Filtration
Lecture 42 - Depth filtration
Lecture 43 - Design of Sand filter and Surface filtration
Lecture 44 - Disinfection
Lecture 45 - Hardness - I
Lecture 46 - Hardness - II
Lecture 47 - Lime-Soda softening - I
Lecture 48 - Lime-Soda softening - II
Lecture 49 - Recarbonation
Lecture 50 - Types of Softening Basin and Adsorption
Lecture 51 - Adsorption
Lecture 52 - Adsorption Isotherms
Lecture 53 - Ion Exchange
Lecture 54 - Nanofiltration and RO
Lecture 55 - Aeration: Removal of Fe and Mn
Lecture 56 - Residual Management
Lecture 57 - Sludge Thickening
Lecture 58 - Stabilization of Sludge
Lecture 59 - Anaerobic and Aerobic digestion of sludge
Lecture 60 - Conditioning, Dewatering and Disposal of Sludge

NPTEL Video Course - Civil Engineering - NOC:Rock Engineering

Subject Co-ordinator - Prof. Priti Maheshwari

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Concept of Instantaneous c and Ï : Balmer Approach
Lecture 31 - Empirical Failure Criteria: Basics of Regression Analysis
Lecture 32 - Hoek and Brown Criterion (1980)
Lecture 33 - Parameters of Failure Criteria
Lecture 34 - Failure Criteria for Rock Mass
Lecture 35 - Tunneling: Underground Excavations
Lecture 36 - Tunneling: Ground Conditions
Lecture 37 - Elastic Stress Distribution Around Circular Tunnels - 1
Lecture 38 - Elastic Stress Distribution Around Circular Tunnels - 2
Lecture 39 - Elastic Analysis of Circular Tunnels - Displacements
Lecture 40 - Thick Wall Cylinder in Biaxial Stress Field
Lecture 41 - Elasto-Plastic Stress Distribution Around Circular Tunnel
Lecture 42 - Underground Excavation Failure Mechanisms
Lecture 43 - Structurally Controlled Failure: Roof Failure
Lecture 44 - Structurally Controlled Failure: Sidewall Failures - 1
Lecture 45 - Structurally Controlled Failure: Sidewall Failures - 2
Lecture 46 - Rock Mass Support Interaction Analysis - 1
Lecture 47 - Rock Mass Support Interaction Analysis - 2
Lecture 48 - Rock Slope Stability
Lecture 49 - Rock Slope Stability - Plane Failure
Lecture 50 - Rock Slope Stability - Wedge Failure
Lecture 51 - Rock Slope Stability - Circular Failure
Lecture 52 - Rock Slope Stability - Toppling Failure - 1
Lecture 53 - Rock Slope Stability - Toppling Failure - 2
Lecture 54 - Rock Slope Stability - Toppling Failure - 3
Lecture 55 - Rock Slope Stabilization
Lecture 56 - Foundations on Weak Rocks
Lecture 57 - Ultimate Bearing Capacity Using Bellâ s Approach
Lecture 58 - Bearing Capacity from Classification Approaches and Based on UCS
Lecture 59 - Bearing Capacity Based on Plate Load test; Treatment of Foundations
Lecture 60 - Dam Foundation Problems

NPTEL Video Course - Civil Engineering - NOC:Finite Element Method and Computational Structural Dynamics

Subject Co-ordinator - Prof. Manish Shrikhande

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Introduction to Scientific Computations - I
Lecture 2 - Introduction to Scientific Computations - II
Lecture 3 - Basic Concepts of Linear Algebra
Lecture 4 - Polynomial Interpolation and Numerical Quadrature - I
Lecture 5 - Polynomial Interpolation and Numerical Quadrature - II
Lecture 6 - Polynomial Interpolation and Numerical Quadrature - III
Lecture 7 - Polynomial Interpolation and Numerical Quadrature - IV
Lecture 8 - Mathematical Modelling and Approximate Solutions - I
Lecture 9 - Mathematical Modelling and Approximate Solutions - II
Lecture 10 - Mathematical Modelling and Approximate Solutions - III
Lecture 11 - Approximation via Variational Principles
Lecture 12 - Introduction to the Finite Element Concept
Lecture 13 - Finite Elements of C^0 Continuity in 1-D - I
Lecture 14 - Finite Elements of C^0 Continuity in 1-D - II
Lecture 15 - Finite Elements of C^0 Continuity in 1-D - III
Lecture 16 - Finite Elements of C^0 Continuity in 1-D - IV
Lecture 17 - Finite Elements of C^1 Continuity in 1-D - I
Lecture 18 - Finite Elements of C^1 Continuity in 1-D - II
Lecture 19 - Finite Elements of C^0 Continuity in 2-D and 3-D - I
Lecture 20 - Finite Elements of C^0 Continuity in 2-D and 3-D - II
Lecture 21 - Finite Elements of C^0 Continuity in 2-D and 3-D - III
Lecture 22 - Finite Elements of C^0 Continuity in 2-D and 3-D - IV
Lecture 23 - Finite Elements of C^0 Continuity in 2-D and 3-D - V
Lecture 24 - Finite Elements of C^0 Continuity in 2-D and 3-D - VI
Lecture 25 - Finite Elements of C^0 Continuity in 2-D and 3-D - VII
Lecture 26 - Finite Elements of C^0 Continuity in 2-D and 3-D - VIII
Lecture 27 - Finite Elements of C^0 Continuity in 2-D and 3-D - IX
Lecture 28 - Finite Elements of C^0 Continuity in 2-D and 3-D - X
Lecture 29 - Finite Elements of C^0 Continuity in 2-D and 3-D - XI

NPTEL Video Course - Civil Engineering - NOC:Sustainable Transportation systems

Subject Co-ordinator - Prof. Bhola Ram Gurjar

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Sustainable Transport Planning and Approaches-I: The Traditional Transport Planning Process
Lecture 31 - Sustainable Transport Planning and Approaches-II: The Contemporary Planning Process
Lecture 32 - Sustainable Transport Planning and Approaches-III: Management Strategies
Lecture 33 - Life Cycle Assessment (LCA): An Introduction
Lecture 34 - Life Cycle Assessment: Theory and Practice
Lecture 35 - LCA Case Study
Lecture 36 - Material Flow Analysis (MFA)
Lecture 37 - Material Flow Analysis: Case Study
Lecture 38 - Concept of Circular Economy
Lecture 39 - Circular Economy in Transport Sector
Lecture 40 - Modelling of Transport Emissions - I
Lecture 41 - Modelling of Transport Emissions - II
Lecture 42 - Dispersion Models for Transport Emissions
Lecture 43 - Traffic Noise Emission Models
Lecture 44 - Initiatives and Policies for Environmental Sustainability
Lecture 45 - National Clean Air Programme and Transport Sector
Lecture 46 - Decarbonizing the Transport Sector
Lecture 47 - Alternate Fuels and Sustainable Transportation
Lecture 48 - Electric Vehicles and Sustainability
Lecture 49 - Emerging Transport Technology - Hyperloop
Lecture 50 - Case Study-I: Bus Rapid Transit System (BRTS)
Lecture 51 - Case Study-II: Mass Rapid Transit (MRT) Systems
Lecture 52 - Case Study-III: Sustainability in Airports
Lecture 53 - Case Study-IV: Sustainable Water Transport
Lecture 54 - Case Study-V: Non-Motorized Transport (NMT)
Lecture 55 - openLCA - An LCA Tool
Lecture 56 - openLCA Application - Case Study
Lecture 57 - Material Flow Analysis Tool - STAN
Lecture 58 - Sustainability Indicators
Lecture 59 - Sustainable Transport Appraisal Rating (STAR)
Lecture 60 - Measuring Sustainability

NPTEL Video Course - Civil Engineering - NOC:Air Pollution and Control

Subject Co-ordinator - Prof. Bhola Ram Gurjar

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Specific Sources and Types of Indoor Air Pollutants
Lecture 31 - Health Impacts Due to Indoor Air Pollution
Lecture 32 - Assessment of Exposure to Indoor Air Pollution
Lecture 33 - Indoor Air Quality Modelling
Lecture 34 - Technologies to Mitigate Indoor Air Pollution
Lecture 35 - Personal Exposure to Fine Particles: A Case Study
Lecture 36 - Indoor Air Quality in Nursery Buildings, UAE â Case Study
Lecture 37 - Global and Regional Environmental Issues - Ozone Depletion
Lecture 38 - Global and Regional Environmental Issues - Global Warming
Lecture 39 - Global and Regional Environmental Issues - Climate Change
Lecture 40 - Global and Regional Environmental Issues - Acid Rain
Lecture 41 - Introduction to Air Pollution Control
Lecture 42 - Air Pollution Control Devices - Part 1
Lecture 43 - Air Pollution Control Devices - Part 2
Lecture 44 - Air Pollution Control Devices - Part 3
Lecture 45 - Air Pollution Control Devices - Part 4
Lecture 46 - Tutorial-II - Practice Examples on Particulate Emission Control Devices
Lecture 47 - Tutorial-III - Practice Examples on Gaseous Emission Control Devices
Lecture 48 - Air Quality Standards
Lecture 49 - Air Pollution Legislations and Regulations
Lecture 50 - National Policies for Managing the Ambient Air Quality (AAQ)
Lecture 51 - International Environmental Treaties to Reduce Air Pollution and GHG Emissions
Lecture 52 - Impact of Lockdown on Air Quality
Lecture 53 - Sector Wise Mitigation Measures to Control Air Pollution
Lecture 54 - Challenges and the Way Forward
Lecture 55 - Sampling and Analysis of PM10 in Ambient Air
Lecture 56 - Sampling and Analysis of PM2.5 in Ambient Air
Lecture 57 - Sampling and Analysis of SO2 and NO2 in Ambient Air
Lecture 58 - Stack Emission Monitoring using Isokinetic Sampling
Lecture 59 - Indoor Air Quality Assessment using Multi Gas Monitor
Lecture 60 - Sampling and Analysis of PM10 and PM2.5 using Spectrometer

NPTEL Video Course - Civil Engineering - NOC:Underground Space Technology

Subject Co-ordinator - Prof. Priti Maheshwari

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Basics of Rock Engineering: Introduction
Lecture 2 - Basics of Rock Engineering: coring, sampling, UCS of intact rock
Lecture 3 - Basics of Rock Engineering: Tensile strength and shear strength of intact rock
Lecture 4 - Basics of Rock Engineering: Classification of intact rocks, concept of rock mass, RQD
Lecture 5 - Basics of Rock Engineering: Classification of rock mass - 1
Lecture 6 - Basics of Rock Engineering: Classification of rock mass: Q-system and GSI
Lecture 7 - Basics of Rock Engineering: Failure criteria for rocks - 1
Lecture 8 - Basics of Rock Engineering: Empirical failure criteria
Lecture 9 - Tunneling: Underground excavations
Lecture 10 - Tunneling: Ground conditions
Lecture 11 - Planning of and exploration for underground construction projects
Lecture 12 - Underground excavation failure mechanisms
Lecture 13 - Application of stereographic projection method: roof failure
Lecture 14 - Application of stereographic projection method: sidewall failures - 1
Lecture 15 - Application of stereographic projection method: sidewall failures - 2
Lecture 16 - Elastic stress distribution around circular tunnels - 1
Lecture 17 - Elastic stress distribution around circular tunnels - 2
Lecture 18 - Elastic analysis of circular tunnels-displacements
Lecture 19 - Thick wall cylinder in biaxial stress field
Lecture 20 - Stress distribution around non-circular openings in elastic ground conditions - 1
Lecture 21 - Stress distribution around non-circular openings in elastic ground conditions - 2
Lecture 22 - Stress distribution under different in-situ stress conditions: design principles
Lecture 23 - Stress distribution for multiple openings
Lecture 24 - Openings in laminated rocks - 1
Lecture 25 - Openings in laminated rocks - 2
Lecture 26 - Openings in laminated rocks - 3
Lecture 27 - Openings in laminated rocks - 4
Lecture 28 - Elasto-plastic analysis of tunnels: Tresca yield criterion - 1
Lecture 29 - Elasto-plastic analysis of tunnels: Tresca yield criterion - 2

Lecture 30 - Elasto-plastic analysis of tunnels: Mohr-Coulomb criterion
Lecture 31 - Application of rock mass classification system: TerzaghiÃ¢s rock load theory - 1
Lecture 32 - Application of rock mass classification system: TerzaghiÃ¢s rock load theory - 2
Lecture 33 - Application of rock mass classification system: rock mass rating (RMR)
Lecture 34 - Tunnel hazards
Lecture 35 - Tunnel hazards: squeezing ground conditions
Lecture 36 - Application of rock mass classification system: rock mass quality system - 1
Lecture 37 - Application of rock mass classification system: rock mass quality system - 2, NATM, NMT
Lecture 38 - Modulus of deformation of rock mass using Q-system, rock mass number, plate loading test
Lecture 39 - Modulus of deformation of rock mass: uni-axial jacking/plate jacking test
Lecture 40 - Modulus of deformation of rock mass: radial jacking test and Goodman jack test
Lecture 41 - Rock mass support interaction analysis: ground response and support reaction curves - 1
Lecture 42 - Rock mass support interaction analysis: ground response and support reaction curves - 2
Lecture 43 - Rock mass support interaction analysis: influencing factors, LadanyiÃ¢s E-P analysis
Lecture 44 - LadanyiÃ¢s elasto-plastic analysis of tunnels: analysis of stresses and deformations
Lecture 45 - Rock-support interaction analysis: required support line, analysis of available support
Lecture 46 - Rock-support interaction analysis: for shotcrete/concrete lining and blocked steel sets
Lecture 47 - Rock-support interaction analysis: for ungrouted rock bolts, grouted rock bolts/cables
Lecture 48 - Calculation sequence for rock-support interaction analysis - 1
Lecture 49 - Calculation sequence for rock-support interaction analysis - 2
Lecture 50 - Calculation sequence for rock-support interaction analysis - example
Lecture 51 - Methods of tunnel excavation, various support systems: shotcrete
Lecture 52 - Shotcrete
Lecture 53 - Various support systems: rock bolts
Lecture 54 - Permeability and groutability - 1
Lecture 55 - Permeability and groutability - 2
Lecture 56 - Rock stress determination: flat jack test
Lecture 57 - Rock stress determination: hydraulic fracturing technique
Lecture 58 - Instrumentation and monitoring of tunnels - 1
Lecture 59 - Instrumentation and monitoring of tunnels - 2
Lecture 60 - Few case studies

NPTEL Video Course - Civil Engineering - NOC:Environmental Modeling and Simulation

Subject Co-ordinator - Prof. Gargi Singh

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Introduction - Part I
Lecture 2 - Introduction - Part II
Lecture 3 - 1D Models - Part I
Lecture 4 - 1D Models - Part II
Lecture 5 - Logistic Growth Models - Part I
Lecture 6 - Logistic Growth Models - Part II
Lecture 7 - 1D Models: Auto Catalysis
Lecture 8 - Semi Quantitative Approach to Solve 1D Models
Lecture 9 - Using MATLAB for 1D systems
Lecture 10 - Using R for 1D Systems
Lecture 11 - Bifurcations - I
Lecture 12 - Bifurcations - II
Lecture 13 - Bifurcations - III
Lecture 14 - Bifurcations - IV
Lecture 15 - Bifurcations - V
Lecture 16 - Insect Outbreak Model
Lecture 17 - 2D Systems - I
Lecture 18 - 2D Systems - II
Lecture 19 - 2D Systems - III
Lecture 20 - 2D Systems - IV
Lecture 21 - 2D Systems - V
Lecture 22 - 2D Systems - VI
Lecture 23 - 2D Systems - VII
Lecture 24 - 2D Systems - VIII
Lecture 25 - 2D Systems - IX
Lecture 26 - 2D Systems - X
Lecture 27 - 2D Systems - XI
Lecture 28 - 2D Systems - XII
Lecture 29 - Limit Cycles - I

NPTEL Video Course - Civil Engineering - NOC:Advanced Geomatics Engineering

Subject Co-ordinator - Prof. Pradeep Kumar Garg

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - GPS Surveying - Sources of Errors
Lecture 31 - GPS - Applications
Lecture 32 - LiDAR - An Introduction
Lecture 33 - Data Collection with Mobile Laser Scanners
Lecture 34 - Data Collection with Airborne LiDAR Systems
Lecture 35 - Unmanned Aerial Vehicles - An Introduction
Lecture 36 - Classifications of UAVs/Drones
Lecture 37 - Various Components of Drone and Their Functions
Lecture 38 - Flying Drones for Data Collection
Lecture 39 - Unmanned Aerial Vehicles - Various Applications
Lecture 40 - Digital Image Processing - An Introduction
Lecture 41 - Pre-processing - Atmospheric Corrections
Lecture 42 - Pre-processing - Geometric Corrections
Lecture 43 - Pre-processing - Resampling Methods
Lecture 44 - Digital Image Enhancement Methods
Lecture 45 - Spatial Filtering in Digital Remote Sensing
Lecture 46 - Digital Image Transformation Methods
Lecture 47 - Supervised Classification Methods
Lecture 48 - Unsupervised Classification Methods
Lecture 49 - Accuracy Assessment of Classification
Lecture 50 - Geographic Information System - An Introduction
Lecture 51 - Various Components of a GIS
Lecture 52 - GIS - Various Data Types and Their Characteristics
Lecture 53 - Geographic Information System - Data Input
Lecture 54 - GIS Databases and Their Uses
Lecture 55 - GIS - Based Extraction of Parameters from DEM
Lecture 56 - Buffering and Overlay Analysis in GIS
Lecture 57 - Spatial and Network Analysis in GIS
Lecture 58 - Geomatics Applications - Site Suitability Analysis
Lecture 59 - Geomatics Applications - Transportation Route Planning
Lecture 60 - Geomatics Applications - Smart City Planning

NPTEL Video Course - Civil Engineering - NOC:Pavement Materials (Under Pavement Engineering)

Subject Co-ordinator - Prof. Nikhil Saboo

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Geometric Design of Highways

Subject Co-ordinator - Prof. Rajat Rastogi

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Alignment Design - 4
Lecture 31 - Alignment Design - 5
Lecture 32 - Alignment Design - 6
Lecture 33 - Alignment Design - 7
Lecture 34 - Alignment Design - 8
Lecture 35 - Alignment Design - 9
Lecture 36 - Alignment Design - 10
Lecture 37 - Alignment Design - 11
Lecture 38 - Alignment Design - 12
Lecture 39 - Alignment Design - 13
Lecture 40 - Alignment Design - 14
Lecture 41 - Alignment Design - 15
Lecture 42 - Alignment Design - 16
Lecture 43 - Intersection Layouts - 1
Lecture 44 - Intersection Layouts - 2
Lecture 45 - Intersection Layouts - 3
Lecture 46 - Intersection Layouts - 4
Lecture 47 - Intersection Layouts - 5
Lecture 48 - Intersection Layouts - 6
Lecture 49 - Intersection Layouts - 7
Lecture 50 - Intersection Layouts - 8
Lecture 51 - Intersection Layouts - 9
Lecture 52 - Intersection Layouts - 10
Lecture 53 - Design of Facilities - 1
Lecture 54 - Design of Facilities - 2
Lecture 55 - Design of Facilities - 3
Lecture 56 - Design of Facilities - 4
Lecture 57 - Design of Facilities - 5
Lecture 58 - Design of Facilities - 6
Lecture 59 - Design of Facilities - 7
Lecture 60 - Design of Facilities - 8
Lecture 61 - Design of Facilities - 9
Lecture 62 - Design of Facilities - 10

NPTEL Video Course - Civil Engineering - NOC:Plate Tectonics

Subject Co-ordinator - Prof. Pitambar Pati

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Destructive Plate Margins - VI, Gravity Anomaly and Thermal Structure at Subduction Zone
Lecture 31 - Magmatism and Metamorphism at Different Plate Settings - I, Magmatism at Subduction Zone
Lecture 32 - Magmatism and Metamorphism at Different Plate Settings - II, Metamorphic at Subduction Zone
Lecture 33 - Orogeny and Epiorogeny - I, Ocean-Continent Collision
Lecture 34 - Orogeny and Epiorogeny - II, Continent-Continent Collision
Lecture 35 - Orogeny and Epiorogeny - III, Arc-Continent Collision
Lecture 36 - Fault Plane Solution
Lecture 37 - Plate Tectonics and Mineralisation - I
Lecture 38 - Plate Tectonics and Mineralisation - II
Lecture 39 - Plate Tectonics and Mineralisation at Divergent Margins - III
Lecture 40 - Plate Tectonics and Mineralisation at Divergent Margins - IV
Lecture 41 - Plate Tectonics and Mineralisation at Convergent Margins - V
Lecture 42 - Plate Tectonics and Mineralisation at Convergent Margins - VI
Lecture 43 - Plate Tectonics and Mineralisation at Convergent Margins - VII
Lecture 44 - Plate Tectonics and Mineralisation at Intraplate Tectono-Metallogenic System - VIII
Lecture 45 - Plate Tectonics and Hydrocarbon Exploration - I
Lecture 46 - Plate Tectonics and Hydrocarbon Exploration - II
Lecture 47 - Plate Tectonics and Climate Change
Lecture 48 - Stability of Triple Junction
Lecture 49 - Volcano
Lecture 50 - Volcano and its Products - I
Lecture 51 - Volcano and its Products - II
Lecture 52 - Himalayan Tectonics - I
Lecture 53 - Himalayan Tectonics - II
Lecture 54 - Indian Seismicity
Lecture 55 - Neotectonics - I
Lecture 56 - Neotectonics - II
Lecture 57 - Continental Drift - I
Lecture 58 - Continental Drift - II
Lecture 59 - Seafloor Spreading
Lecture 60 - Global Positioning System (GPS) and Plate

NPTEL Video Course - Civil Engineering - NOC:Earthquake Geotechnical Engineering

Subject Co-ordinator - Prof. B.K. Maheshwari

Co-ordinating Institute - IIT - Roorkee

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

NPTEL Video Course - Civil Engineering - NOC:Railway Engineering

Subject Co-ordinator - Prof. Rajat Rastogi

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Permissible Wear, LWR and CWR
Lecture 31 - LWR and CWR
Lecture 32 - Fastenings - Rail to Rail
Lecture 33 - Fastenings - Rail to Sleeper (Elastic)
Lecture 34 - Fastenings - Rail to Sleeper (Others)
Lecture 35 - Track Alignment
Lecture 36 - Speed on Track
Lecture 37 - Circular Curve on Track
Lecture 38 - Superelevation on Track - I
Lecture 39 - Superelevation on Track - II and Transition Curves - I
Lecture 40 - Transition Curves - II, Extra Clearances
Lecture 41 - Widening of Gauge and Vertical Curves
Lecture 42 - Realignment of Curves
Lecture 43 - Turnouts, Points and Crossings - I
Lecture 44 - Turnouts, Points and Crossings - II
Lecture 45 - Crossings and Turnout Design
Lecture 46 - Turnout Design and Maintenance
Lecture 47 - Track Junctions and Design - I
Lecture 48 - Track Junctions and Design - II
Lecture 49 - Signaling - I
Lecture 50 - Signaling - II
Lecture 51 - Signaling - III
Lecture 52 - Interlocking Systems - I
Lecture 53 - Interlocking Systems - II
Lecture 54 - Interlocking Systems - III
Lecture 55 - Interlocking Systems - IV
Lecture 56 - Train Control Systems - I
Lecture 57 - Train Control Systems - II
Lecture 58 - Stations, Yards, Level Crossings
Lecture 59 - Track Maintenance - I
Lecture 60 - Track Maintenance - II
Lecture 61 - Track Maintenance - III
Lecture 62 - Track Maintenance - IV
Lecture 63 - Track Renewals and Drainage
Lecture 64 - High Speed Tracks

NPTEL Video Course - Civil Engineering - NOC:Groundwater Engineering

Subject Co-ordinator - Prof. Arun K. Saraf

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - Theis Equation and example of superposition for solution
Lecture 31 - Theis Equation Theis Equation Assumptions and Applications - 1
Lecture 32 - Theis Equation Theis Equation Assumptions and Applications - 2
Lecture 33 - Geologic Formations as Aquifers - 1
Lecture 34 - Geologic Formations as Aquifers - 2
Lecture 35 - Geologic Formations as Aquifers - 3
Lecture 36 - Springs
Lecture 37 - Springs in India - 1
Lecture 38 - Springs in India - 2
Lecture 39 - Groundwater Exploration - 1
Lecture 40 - Groundwater Exploration - 2
Lecture 41 - Groundwater Exploration - 3
Lecture 42 - Groundwater Exploration - 4
Lecture 43 - Groundwater Exploration - 5
Lecture 44 - Groundwater Exploration - 6
Lecture 45 - Groundwater Exploration - 7
Lecture 46 - Groundwater Exploration - 8
Lecture 47 - Groundwater Exploration - 9
Lecture 48 - Groundwater Exploration - 10
Lecture 49 - Groundwater Exploration - 11
Lecture 50 - Groundwater Exploration - 12
Lecture 51 - Groundwater Exploration - 13 : Sampling
Lecture 52 - Groundwater Exploration - 14 : Hydrogeological Well Logging
Lecture 53 - Groundwater Exploration - 15 : Spontaneous potential logging
Lecture 54 - Groundwater Exploration - 16 : Selection of types of wells and Exploration for Art-Rec sites
Lecture 55 - Groundwater Exploration - 17 : Exploration for hot springs
Lecture 56 - Groundwater Exploration - 18 : Pollution related exploration
Lecture 57 - Groundwater Quality
Lecture 58 - Conjunctive use of ground and surface water
Lecture 59 - Groundwater Modelling - 1
Lecture 60 - Groundwater Modelling - 2
Lecture 61 - Groundwater Recharge Methods in India
Lecture 62 - Artificial Recharge Techniques and Designs

NPTEL Video Course - Civil Engineering - NOC:Introduction to Sequence Stratigraphy

Subject Co-ordinator - Prof. Biplab Bhattacharya

Co-ordinating Institute - IIT Roorkee

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

Lecture 30 - Basic Concepts of Sequence Stratigraphic Elements - IV
Lecture 31 - Surfaces in Sequence Stratigraphy - I: Introduction
Lecture 32 - Surfaces in Sequence Stratigraphy - II: Unconformity
Lecture 33 - Surfaces in Sequence Stratigraphy - III: Correlative Conformity
Lecture 34 - Surfaces in Sequence Stratigraphy - IV: BSFR
Lecture 35 - Surfaces in Sequence Stratigraphy - V: RSME
Lecture 36 - Surfaces in Sequence Stratigraphy - VI: MRS
Lecture 37 - Surfaces in Sequence Stratigraphy - VII: MFS
Lecture 38 - Surfaces in Sequence Stratigraphy - VIII: TRS - Part 1
Lecture 39 - Surfaces in Sequence Stratigraphy - IX: TRS - Part 2
Lecture 40 - Surfaces in Sequence Stratigraphy - X: Within Trend Facies Contacts
Lecture 41 - The Systems Tracts - I: Introduction
Lecture 42 - The Systems Tracts - II: Highstand Systems Tract - Part 1
Lecture 43 - The Systems Tracts - III: Highstand Systems Tract - Part 2
Lecture 44 - The Systems Tracts - IV: Falling-stage Systems Tract - Part 1
Lecture 45 - The Systems Tracts - V: Falling-stage Systems Tract - Part 2
Lecture 46 - The Systems Tracts - VI: Falling-stage Systems Tract - Part 3
Lecture 47 - The Systems Tracts - VII: Falling-stage Systems Tract - Part 4
Lecture 48 - The Systems Tracts - VIII: Lowstand Systems Tract - Part 1
Lecture 49 - The Systems Tracts - IX: Lowstand Systems Tract - Part 2
Lecture 50 - The Systems Tracts - X: Lowstand Systems Tract - Part 3
Lecture 51 - The Systems Tracts - XI: Transgressive Systems Tract - Part 1
Lecture 52 - The Systems Tracts - XII: Transgressive Systems Tract - Part 2
Lecture 53 - The Systems Tracts - XIII: Transgressive Systems Tract - Part 3
Lecture 54 - The Systems Tracts - XIV: Transgressive Systems Tract - Part 4
Lecture 55 - The Systems Tracts - XV: Regressive Systems Tract
Lecture 56 - Sequence Stratigraphy of Fluvial Environment
Lecture 57 - Sequence Stratigraphy of Carbonate Depositional Environments - I
Lecture 58 - Sequence Stratigraphy of Carbonate Depositional Environments - II
Lecture 59 - Sequence Stratigraphy of Carbonate Depositional Environments - III
Lecture 60 - Sequence Stratigraphy of Carbonate Depositional Environments - IV

NPTEL Video Course - Civil Engineering - Ground Improvement Techniques

Subject Co-ordinator - Dr. G.L. Sivakumar Babu

Co-ordinating Institute - IISc - Bangalore

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

Lecture 30 - Reinforced soil slopes
Lecture 31 - Reinforced Soil Walls
Lecture 32 - Reinforced Soil Walls - I
Lecture 33 - Soil Nailing
Lecture 34 - Design of embankments on soft soil using geosynthetics
Lecture 35 - Design of embankments on soft soil using geocells, Use of geosyntheticsfor filtration and draina
Lecture 36 - Applications in filtration and drainage & erosion control
Lecture 37 - Geosynthetics in pavements
Lecture 38 - Sustainable development and energy geotechnology
Lecture 39 - Microbial geotechnology and Ground Improvement
Lecture 40 - Nano-technologies in ground improvement and site remediation

NPTEL Video Course - Civil Engineering - Stochastic Hydrology

Subject Co-ordinator - Prof. P.P. Mujumdar

Co-ordinating Institute - IISc - Bangalore

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

NPTEL Video Course - Civil Engineering - Stochastic Structural Dynamics

Subject Co-ordinator - Prof. C.S. Manohar

Co-ordinating Institute - IISc - Bangalore

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

Lecture 30 - Monte Carlo simulation approach - 4
Lecture 31 - Monte Carlo simulation approach - 5
Lecture 32 - Monte Carlo simulation approach - 6
Lecture 33 - Monte Carlo simulation approach - 7
Lecture 34 - Probabilistic methods in earthquake engineering - 1
Lecture 35 - Probabilistic methods in earthquake engineering - 2
Lecture 36 - Probabilistic methods in earthquake engineering - 3
Lecture 37 - Probabilistic methods in earthquake engineering - 4
Lecture 38 - Fatigue failure & Vibration energy flow models
Lecture 39 - Problem solving session - 1
Lecture 40 - Problem solving session - 2
Lecture 41 - Problem solving session - 3
Lecture 42 - Problem solving session - 4

NPTEL Video Course - Civil Engineering - Water Resources Systems : Modeling Techniques and Analysis

Subject Co-ordinator - Prof. P.P. Mujumdar

Co-ordinating Institute - IISc - Bangalore

NPTEL Video Course - Civil Engineering - Finite Element method for vibration and Stability analyses

Subject Co-ordinator - Prof. C.S. Manohar

Co-ordinating Institute - IISc - Bangalore

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

Lecture 30 - FEM for stability analysis. Euler-Bernoulli beam and general formulations
Lecture 31 - 3D beam element; plate element; imperfection sensitive structures; beams on elastic foundations;
Lecture 32 - Dynamic analysis of stability and analysis of time varying systems
Lecture 33 - Dynamic analysis of stability and analysis of time varying systems
Lecture 34 - FE modelling of vehicle structure interactions
Lecture 35 - Inverse response sensitivity analysis
Lecture 36 - Inverse response sensitivity analysis (Continued...)
Lecture 37 - Introduction and review of continuum mechanics
Lecture 38 - Review of measures of strain and stress; balance laws
Lecture 39 - Total and updated Lagrangian formulations
Lecture 40 - Closure

NPTEL Video Course - Civil Engineering - NOC:Introduction to Engineering Seismology

Subject Co-ordinator - Dr. P. Anbazhagan

Co-ordinating Institute - IISc - Bangalore

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

Lecture 30 - Recapitulation - 2
Lecture 31 - Recapitulation - 3
Lecture 32 - Recapitulation - 4
Lecture 33 - Recapitulation - 5
Lecture 34 - Recapitulation - 6
Lecture 35 - Recapitulation - 7
Lecture 36 - Recapitulation - 8
Lecture 37 - Earthquake Prediction
Lecture 38 - Earthquake prediction (Continued...)
Lecture 39 - Seismic Gap
Lecture 40 - Earthquake Prediction (some Precautions)
Lecture 41 - Seismic zonation and microzonation
Lecture 42 - Seismic zonation and microzonation (Continued...)
Lecture 43 - Seismic microzonation of various Indian cities
Lecture 44 - Seismic microzonation of various Indian cities (Continued...)
Lecture 45 - Global Equation model
Lecture 46 - Global Earthquake risk map
Lecture 47 - Seismic Microzonation of Bangalore
Lecture 48 - Seismic Microzonation of Bangalore
Lecture 49 - Seismic zonation of India
Lecture 50 - IS 1893 version 2002 and 2016 explained
Lecture 51 - Zonation Map of India
Lecture 52 - Seismicity of India
Lecture 53 - Seismicity of India
Lecture 54 - SeismoTectonics of India - 1
Lecture 55 - SeismoTectonics of India - 2
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Lecture 57 - Seismic Hazard Analysis - Introduction
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