

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

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

Lecture 1 - Course Contents
Lecture 2 - Preliminary Concepts
Lecture 3 - Introduction to Reynolds Transport Theorem
Lecture 4 - Derivation of Reynolds Transport Theorem - Part I
Lecture 5 - Derivation of Reynolds Transport Theorem - Part II
Lecture 6 - Conservation Laws
Lecture 7 - Numerical Examples
Lecture 8 - Summary of Module - I
Lecture 9 - Atmospheric Water
Lecture 10 - Water Vapor Dynamics
Lecture 11 - Precipitable Water in the Static Atmospheric Column
Lecture 12 - Numerical Examples on Basic Atmospheric Parameters
Lecture 13 - Precipitation-Types and Formation
Lecture 14 - Terminal Velocity
Lecture 15 - Thunderstorm Cell Model
Lecture 16 - Numerical Examples on Terminal Velocity and Thunderstorm Cell
Lecture 17 - Forms of Precipitation
Lecture 18 - Measurement of rainfall
Lecture 19 - Raingauge Network
Lecture 20 - Presentation of Rainfall Data
Lecture 21 - Analysis of Rainfall Data
Lecture 22 - Average Areal Rainfall
Lecture 23 - Evaporation
Lecture 24 - Evaporation-Energy Balance Method
Lecture 25 - Evaporation-Aerodynamic Method
Lecture 26 - Evaporation-Combined Method
Lecture 27 - Numerical Examples on Evaporation
Lecture 28 - Evaporation-Empirical method
Lecture 29 - Evapotranspiration

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- Lecture 30 - Evapotranspiration-Numerical Example
- Lecture 31 - Summary of Module - II
- Lecture 32 - Subsurface Water
- Lecture 33 - 1-D Unsteady Unsaturated Flow Equation
- Lecture 34 - Infiltration
- Lecture 35 - Measurement of Infiltration
- Lecture 36 - Estimation of Infiltration-Empirical Equations
- Lecture 37 - Numerical examples - Infiltration estimation using empirical equations
- Lecture 38 - Estimation of Infiltration-Theoretical Equation
- Lecture 39 - Infiltration-Green Ampt Equation
- Lecture 40 - Ponding time
- Lecture 41 - Numerical Examples on Green Ampt Infiltration Equation
- Lecture 42 - Summary of Module - III
- Lecture 43 - Surface Water
- Lecture 44 - Excess Rainfall and Direct Runoff
- Lecture 45 - Numerical Examples on Direct Runoff
- Lecture 46 - Overland flow
- Lecture 47 - Streamflow Measurement - I
- Lecture 48 - Streamflow Measurement - II
- Lecture 49 - Representation of Streamflow
- Lecture 50 - Numerical Examples on Streamflow Measurement
- Lecture 51 - Summary of Module - IV
- Lecture 52 - Hydrologic Analysis - Introduction
- Lecture 53 - Linear System Theory
- Lecture 54 - Hydrograph Analysis-UH
- Lecture 55 - Hydrograph Analysis-DRH
- Lecture 56 - Numerical examples on UH and DRH
- Lecture 57 - S-Hydrograph
- Lecture 58 - Unit Hydrograph of Different Duration
- Lecture 59 - Numerical examples UH of Different Duration
- Lecture 60 - Instantaneous Unit Hydrograph
- Lecture 61 - Instantaneous Unit Hydrograph-Nash's Model
- Lecture 62 - Numerical Examples on IUH
- Lecture 63 - Synthetic Unit Hydrograph
- Lecture 64 - SCS-Synthetic Unit Hydrograph
- Lecture 65 - Numerical Examples on SUH
- Lecture 66 - Hydrograph Routing
- Lecture 67 - Reservoir Routing
- Lecture 68 - Numerical Example on Reservoir Routing

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- Lecture 69 - Hydrologic Channel Routing
- Lecture 70 - Numerical Examples on Channel Routing
- Lecture 71 - Summary of Module - V
- Lecture 72 - Hydrologic Statistics-Preliminary Concepts
- Lecture 73 - Probability Distribution and Basic Descriptive Statistics
- Lecture 74 - Probability Distributions
- Lecture 75 - Frequency Analysis
- Lecture 76 - Extreme Value Analysis
- Lecture 77 - Summary of Module - VI
- Lecture 78 - Hydrologic Design
- Lecture 79 - Numerical examples on probability and risk
- Lecture 80 - Design Storm
- Lecture 81 - Design Flood
- Lecture 82 - Summary of Module - VII
- Lecture 83 - Closure of Engineering Hydrology