

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

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

Subject Co-ordinator - Prof. Sreedeeep S

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Introduction to course content  
Lecture 2 - Stress acting at a point - Cauchy stress  
Lecture 3 - Stress acting at a point - Stress tensor  
Lecture 4 - Stress acting on a plane  
Lecture 5 - Stress acting on a plane example  
Lecture 6 - Transformation of stress tensor  
Lecture 7 - Stress invariants  
Lecture 8 - Relationship between stress invariants  
Lecture 9 - Principle stresses and Eigen vectors  
Lecture 10 - Strain in soils  
Lecture 11 - Cause effect relationship  
Lecture 12 - Important constitutive relationship  
Lecture 13 - 3D to 2D idealization  
Lecture 14 - Mathematical formulation plane stress plane strain  
Lecture 15 - Mathematical formulation axisymmetric  
Lecture 16 - Summary of Module 1  
Lecture 17 - Basics of shear strength  
Lecture 18 - Stress representation  
Lecture 19 - Shear strength granular soil - I  
Lecture 20 - Shear strength granular soil - II  
Lecture 21 - Shear strength cohesive soil  
Lecture 22 - Shear strength cohesive soil - Stress strain  
Lecture 23 - Pore water pressure and Skemptions equation  
Lecture 24 - Overall pore water pressure parameter  
Lecture 25 - Pore water pressure - plane strain-effect of sampling  
Lecture 26 - Pore water pressure estimation  
Lecture 27 - Triaxial test  
Lecture 28 - Interpretation triaxial test - UU UCS  
Lecture 29 - Interpretation triaxial test - CU

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- 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