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Lecture 15 - Impact of Oil and Gas Industry on Marine Environment

Lecture 16 - Oil Hydrocarbon in Marine Environment

Lecture 17 - Chemicals and Wastes from Offshore and Oil Industry

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- Lecture 2 - Continuation of layout of ports
- Lecture 3 - Visakhapatnam port
- Lecture 4 - Ships and size of ships
- Lecture 5 - Port planning
- Lecture 6 - Harbour layout
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- Lecture 9 - Tide, surge, tsunami and wave
- Lecture 10 - Wave rose diagram
- Lecture 11 - Breakwater
- Lecture 12 - Design of breakwater - Part-1
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- Lecture 14 - Berm breakwater
- Lecture 15 - Dredging & methods of disposal
- Lecture 16 - Berthing structures modelling
- Lecture 17 - Berthing structures - analyses
- Lecture 18 - Loads
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- Lecture 23 - Estimation seismic forces
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- Lecture 25 - Load combinations and design
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- Lecture 27 - Mechanical handling system
- Lecture 28 - Single buoy mooring and open sea jetty - Part 1
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- Lecture 30 - Slipway, drydock, floating dock, shiplift
- Lecture 31 - Soil structure interaction

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Lecture 33 - Pile load test

Lecture 34 - Ground improvement techniques

Lecture 35 - Analysis of pile with spring support

Lecture 36 - UPV,Half cell potential, Low high Integrity Test

Lecture 37 - Mooring Dolphin at KPT

Lecture 38 - Coastal structures and environmental management

Lecture 39 - BOQ and Cost Estimate

Lecture 40 - Proposed Mega Terminal Chennai

Lecture 41 - Preliminary Project Report on Shipyard

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Lecture 43 - Detailed project report

Lecture 44 - Environmental studies of a project

Lecture 45 - Design of pile

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Lecture 6 - Bulbous Bow on Ship Resistance

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Lecture 8 - Dimensional Analysis - II, Model Tests and Ship Resistance Prediction Methods - I

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Lecture 11 - Resistance in Shallow Water

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Lecture 13 - Ship Resistance Prediction Methods - I

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Lecture 11 - Longshore sediment transport - II

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**NPTEL : Wave Hydrodynamics (Ocean Engineering)**

**Co-ordinators : Prof. V. Sundar**

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- Lecture 3 - Introduction
- Lecture 4 - Wave Motion - I
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- Lecture 6 - Wave Motion - III
- Lecture 7 - Wave Motion Problems
- Lecture 8 - Standing Wave Theory
- Lecture 9 - Wave Deformation - I
- Lecture 10 - Wave Deformation - II
- Lecture 11 - Wave Deformation and Problems
- Lecture 12 - Random Waves
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- Lecture 15 - Random Waves and Problems - III
- Lecture 16 - Simulation of Random Waves
- Lecture 17 - Directional waves
- Lecture 18 - Wave Loads on Structures - I
- Lecture 19 - Wave Loads on Structures - II
- Lecture 20 - Wave Loads on Structures and Problems - I
- Lecture 21 - Wave Loads on Structures and Problems - II
- Lecture 22 - Wave loads on Large Boies
- Lecture 23 - Finite Amplitude Wave Theories
- Lecture 24 - Hydrodynamic Testing Facility
- Lecture 25 - Hydrodynamic Testing Facility at IITM

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- Lecture 2 - Fixed type offshore structures
- Lecture 3 - Compliant type offshore structures - I
- Lecture 4 - Compliant type offshore structures - II
- Lecture 5 - Drill ships and basics of drilling
- Lecture 6 - Subsea production systems
- Lecture 7 - Environmental loads - I
- Lecture 8 - Environmental loads - II
- Lecture 9 - Types of coastal structures - I
- Lecture 10 - Types of coastal structures - II
- Lecture 11 - Summary of coastal structures
- Lecture 12 - Tutorials on Module - I
- Lecture 13 - Outline of planning of ocean structures
- Lecture 14 - Introduction to design
- Lecture 15 - Construction techniques
- Lecture 16 - Dredging - I
- Lecture 17 - Dredging - II
- Lecture 18 - Uncertainties in analysis and design
- Lecture 19 - Design adequacy - Example I
- Lecture 20 - Design adequacy - Example II
- Lecture 21 - Dredging equipments' specifications
- Lecture 22 - Ocean Pollution
- Lecture 23 - Foundation and sea bed anchors
- Lecture 24 - Introduction to materials - I
- Lecture 25 - Introduction to materials - II
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- Lecture 27 - Concrete: problems and solutions
- Lecture 28 - Repair materials for marine structures
- Lecture 29 - Corrosion in concrete - I
- Lecture 30 - Corrosion in concrete - II
- Lecture 31 - Material sin repair and rehabilitation

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- Lecture 2 - Introduction to different types of ocean structures - II
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- Lecture 4 - Types of Compliant towers
- Lecture 5 - New Generation offshore and Coastal structures
- Lecture 6 - Environmental forces
- Lecture 7 - Wave forces, Current
- Lecture 8 - Introduction to Structural dynamics
- Lecture 9 - Characteristics of single degree - of - freedom model
- Lecture 10 - Methods of writing equation of motion
- Lecture 11 - Free and forced vibration of single degree - of - freedom systems
- Lecture 12 - Undamped and damped systems - I
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- Lecture 15 - Comparison of methods
- Lecture 16 - Examples
- Lecture 17 - Numerical problems in single degree - of - freedom systems
- Lecture 18 - Two degrees - of - freedom systems
- Lecture 19 - Eigenvalues and Eigenvectors
- Lecture 20 - Orthogonality of modes
- Lecture 21 - Study of Multi degrees - of - freedom systems
- Lecture 22 - Equations of motion
- Lecture 23 - Natural frequencies and mode shapes
- Lecture 24 - Stodla, Rayleigh - Ritz and influence coefficient methods, Dunkerley
- Lecture 25 - Continuous system
- Lecture 26 - Structural action of offshore structures
- Lecture 27 - Fluid - Structure interaction - I
- Lecture 28 - Fluid - Structure interaction - II Dynamic analysis of offshore jacket platforms
- Lecture 29 - Steps of analysis using software
- Lecture 30 - Steps of analysis using software (Continued...)
- Lecture 31 - Dynamic analysis of articulated towers

Lecture 32 - Iterative frequency domain - I

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Lecture 34 - Multi - legged articulated towers

Lecture 35 - Response control of multi-legged articulated towers using tuned mass dampers Experimental and analytical studies on MLAT

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Lecture 37 - Dynamic analyses of TLPs

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Lecture 39 - Estimate of classical damping

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Lecture 45 - Narrow band process

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Lecture 29 - Plastic capacity of sections under combined loads - II

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- Lecture 32 - Ultimate capacity of tubular joints
- Lecture 33 - Fluid structure interaction - I
- Lecture 34 - Fluid structure interaction - II
- Lecture 35 - Fluid induced vibration - I
- Lecture 36 - Fluid induced vibration - II
- Lecture 37 - Flow through perforated members - I
- Lecture 38 - Flow through perforated members - numerical studies - II
- Lecture 39 - Flow through perforated members - III - Analytical studies
- Lecture 40 - Introduction to Reliability - I
- Lecture 41 - Introduction to Reliability - II
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- Lecture 43 - Reliability framework in Marine structures
- Lecture 44 - Ultimate Limit state and Reliability approach - I
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- Lecture 47 - FOSM and AFOSM methods of Reliability
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- Lecture 50 - Fatigue loading and fatigue analysis
- Lecture 51 - Deterministic fatigue analysis
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- Lecture 6 - Equations of Motion
- Lecture 7 - Free Vibration of SDOF systems
- Lecture 8 - Damped and Undamped Forced Vibration
- Lecture 9 - Damped Forced Vibration
- Lecture 10 - Response building
- Lecture 11 - Numerical Example (SDOF)
- Lecture 12 - Numerical Example II
- Lecture 13 - Numerical Example
- Lecture 14 - Numerical Example - MDOF
- Lecture 15 - Numerical Example - Eigen value problems
- Lecture 16 - Orthogonality of modes - MDOF system models
- Lecture 17 - Numerical Methods for MDOF systems
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- Lecture 19 - STODLA Method - MDOF
- Lecture 20 - Stodla Method - Examples
- Lecture 21 - Rayleighs Method
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- Lecture 25 - Damping Matrix by Super Positioning Method
- Lecture 26 - Duhamels Integral
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- Lecture 28 - Modal participation and missing mass corrections
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