

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

NPTEL Video Course - Engineering Design - Vehicle Dynamics

Subject Co-ordinator - Dr. R. Krishnakumar

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction to Vehicle Dynamics
- Lecture 2 - Longitudinal Dynamics
- Lecture 3 - Vehicle Load Distribution - Acceleration and Braking
- Lecture 4 - Brake Force Distribution, Braking Efficiency and Braking Distance
- Lecture 5 - Tractor - Semi Trailer
- Lecture 6 - Tire Mechanics - An Introduction
- Lecture 7 - Mechanical Properties of Rubber
- Lecture 8 - Slip, Grip and Rolling Resistance
- Lecture 9 - Tire Construction and Force Development
- Lecture 10 - Contact Patch and Contact Pressure Distribution
- Lecture 11 - Tire Brush Model
- Lecture 12 - Lateral Force Generation
- Lecture 13 - Ply Steer and Conicity - Part 1
- Lecture 14 - Ply Steer and Conicity - Part 2
- Lecture 15 - Tire Models - Magic Formula
- Lecture 16 - Classification of Tyre Models and Combined Slip
- Lecture 17 - Lateral Dynamics - An Introduction
- Lecture 18 - Lateral Dynamics - Bicycle Model
- Lecture 19 - Lateral Dynamics - Stability and Steering Conditions
- Lecture 20 - Understeer Gradient and State Space Approach
- Lecture 21 - Handling Response of a Vehicle
- Lecture 22 - Mimuro Plot for Lateral Transient Response - Part 1
- Lecture 23 - Mimuro Plot for Lateral Transient Response - Part 2
- Lecture 24 - Parameters affecting vehicle handling characteristics
- Lecture 25 - Subjective and Objective Evaluation of Vehicle Handling - Part 1
- Lecture 26 - Subjective and Objective Evaluation of Vehicle Handling - Part 2
- Lecture 27 - Subjective and Objective Evaluation of Vehicle Handling and Rollover P
- Lecture 28 - Rollover Prevention (Continued...) and Vertical Dynamics
- Lecture 29 - Vertical Dynamics - An Introduction

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- Lecture 30 - Vertical Dynamics - Quarter Car Model
- Lecture 31 - Noise, Vibration and Harshness - Random Processes
- Lecture 32 - Random Process and Conclusion (Continued...)