

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

NPTEL Video Course - Mechanical Engineering - NOC:IC Engines and Gas Turbines

Subject Co-ordinator - Dr. Vinayak Kulkarni, Prof. Pranab K. Mondal

Co-ordinating Institute - IIT - Guwahati

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

- Lecture 1 - External and Internal combustion engines, Engine components, SI and CI engines
- Lecture 2 - Four-stroke and Two-stroke engines, Comparison between SI and CI engines, and Four-stroke and Two
- Lecture 3 - Classification of IC engines
- Lecture 4 - Engine operating characteristics
- Lecture 5 - Otto, Diesel and Dual cycles
- Lecture 6 - Otto, Diesel and Dual cycles (Continued...)
- Lecture 7 - Otto, Diesel and Dual cycles (Continued...)
- Lecture 8 - Otto, Diesel and Dual cycles (Continued...)
- Lecture 9 - Comparison between the cycles, Actual cycles and their analysis
- Lecture 10 - Carburetor, Mixture requirements
- Lecture 11 - Carburetor, Mixture requirements (Continued...)
- Lecture 12 - Idling, cruising and power ranges
- Lecture 13 - Idling, cruising and power ranges (Continued...)
- Lecture 14 - Classification, types of nozzles, Ignition system, Battery and Magneto ignition systems
- Lecture 15 - Classification, types of nozzles, Ignition system, Battery and Magneto ignition systems (Continu
- Lecture 16 - Classification, types of nozzles, Ignition system, Battery and Magneto ignition systems (Continu
- Lecture 17 - Engine friction, Lubrication systems, forces on piston
- Lecture 18 - Lubricating oils, Thermochemistry and Fuels, Self-ignition
- Lecture 19 - Octane and Cetane Numbers, Alternative Fuels - Methanol, Ethanol, hydrogen, Natural Gas
- Lecture 20 - Octane and Cetane Numbers, Alternative Fuels - Methanol, Ethanol, hydrogen, Natural Gas (Continu
- Lecture 21 - Combustion in SI and CI Engines, Pressure Crank Angle Diagram
- Lecture 22 - Combustion in SI and CI Engines, Pressure Crank Angle Diagram (Continued...)
- Lecture 23 - Combustion in SI and CI Engines, Pressure Crank Angle Diagram (Continued...)
- Lecture 24 - SI engine injection system, Energy distribution, Engine temperatures, Heat transfer in combustio
- Lecture 25 - SI engine injection system, Energy distribution, Engine temperatures, Heat transfer in combustio
- Lecture 26 - CI engine injection systems, Air-cooled and liquid-cooled engines, Modern trends
- Lecture 27 - CI engine injection systems, Air-cooled and liquid-cooled engines, Modern trends (Continued...)
- Lecture 28 - CI engine injection systems, Air-cooled and liquid-cooled engines, Modern trends (Continued...)
- Lecture 29 - Problems on IC engine

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- Lecture 30 - Turbomachines, Gas Turbine theory
- Lecture 31 - Open Cycle Gas Turbine Power Plant, Twin Shaft Arrangement
- Lecture 32 - Closed Cycle, Multi-Spool Arrangement, Steam Power Plant
- Lecture 33 - Basic Thermodynamics
- Lecture 34 - Brayton Cycle
- Lecture 35 - Brayton Cycle
- Lecture 36 - Brayton Cycle with Heat Exchanger/Reheater
- Lecture 37 - Brayton Cycle with Intercooler
- Lecture 38 - Real Brayton Cycle, Solved Example for Ideal Cycle
- Lecture 39 - Solved Examples for Real Brayton Cycle
- Lecture 40 - Introduction and Performance Parameters of Propulsion System
- Lecture 41 - Basics of Various Aircraft Engine
- Lecture 42 - Euler Turbomachinery Equation
- Lecture 43 - Introduction and Flow Analysis of Centrifugal Compressors
- Lecture 44 - Thermodynamics Analysis of Centrifugal Compressors
- Lecture 45 - Axial Compressor
- Lecture 46 - Axial Compressor
- Lecture 47 - Complete Analysis of Axial Flow Gas Turbine
- Lecture 48 - Solved Examples for Axial Compressors, Centrifugal Compressors and Turbine
- Lecture 49 - Radial Flow Turbine, Solved Example of Free vortex Condition
- Lecture 50 - Nozzles and Diffusers