

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

NPTEL Video Course - Mechanical Engineering - NOC:Experimental Methods in Fluid Mechanics

Subject Co-ordinator - Prof. Pranab K. Mondal

Co-ordinating Institute - IIT - Guwahati

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

- Lecture 1 - Basic concepts, Calibration
- Lecture 2 - Dimensions, Units, Standards, Systems of dimensions, System of units, Unit conversion table
- Lecture 3 - Basic concept of dynamic measurements
- Lecture 4 - Basic concept of dynamic measurements (Continued...)
- Lecture 5 - Basic concept of dynamic measurements (Continued...)
- Lecture 6 - System response and distortion, Impedence matching
- Lecture 7 - Dimensional measurement Gauge blocks, The pneumatic displacement gauge
- Lecture 8 - Dimensional measurement Gauge blocks, The pneumatic displacement gauge
- Lecture 9 - Pressure Measurements
- Lecture 10 - Mechanical pressure measurement devices, U-tube manometer, The inclined well type manometer
- Lecture 11 - The aneroid barometer, Diaphragm and Bellows Gauges
- Lecture 12 - The Mcleod gauge, The Pirani gauge, The Ionization gauge
- Lecture 13 - The Mcleod gauge, The Pirani gauge, The Ionization gauge (Continued...)
- Lecture 14 - The Mcleod gauge, The Pirani gauge, The Ionization gauge (Continued...)
- Lecture 15 - Pressure measurement using 3 holes/probes
- Lecture 16 - Pressure measurement using 3 holes/probes (Continued...)
- Lecture 17 - Flow obstruction flow rate measuerement(venturimeter/orificemeter), the Rotameter
- Lecture 18 - Flow obstruction flow rate measuerement(venturimeter/orificemeter), the Rotameter (Continued...)
- Lecture 19 - Thermal Anemometry(hot wire/hot film), Hot wire anemometer
- Lecture 20 - Thermal Anemometry(hot wire/hot film), Hot wire anemometer (Continued...)
- Lecture 21 - Laser Doppler anemometry
- Lecture 22 - Measurement of velocity components by 3 holes and 4 holes probes
- Lecture 23 - Ideal gas thermometer, Temperature measurement by mechanical and electrical effects
- Lecture 24 - Ideal gas thermometer, Temperature measurement by mechanical and electrical effects (Continued...)
- Lecture 25 - Thermostatic temperature, Resistance Temperature Detectors (RTD), Thermistors, Thermocouples
- Lecture 26 - Temperature measurement by Radiation, The optical pyrometer
- Lecture 27 - Transient response of thermal system, Thermocouple compensation, high speed flow
- Lecture 28 - Transient response of thermal system, Thermocouple compensation, high speed flow (Continued...)
- Lecture 29 - Transient response of thermal system, Thermocouple compensation, high speed flow (Continued...)

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- Lecture 30 - Constant temperature hot-wire anemometer, LDA
- Lecture 31 - Use of PIV
- Lecture 32 - Use of PIV (Continued...)
- Lecture 33 - Use of PIV (Continued...)
- Lecture 34 - Measurement of pitch angle
- Lecture 35 - Measurement of torque by dynamometers, strain gauge, transducers
- Lecture 36 - Measurement of microscale flow features - I
- Lecture 37 - Measurement of microscale flow features - II
- Lecture 38 - Transient and Frequency response consideration
- Lecture 39 - Examples
- Lecture 40 - Analysis of experimental data, causes and types of experimental errors
- Lecture 41 - Rejection of data
- Lecture 42 - Error propagation
- Lecture 43 - The Method of Least square with example