

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

NPTEL Video Course - Metallurgy and Material Science - NOC:Dealing with Materials Data: Collection, Analysis

Subject Co-ordinator - Dr. M.P. Gururajan

Co-ordinating Institute - IIT - Bombay

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

Lecture 1 - Descriptive Statistics - I
Lecture 2 - Descriptive Statistics - II
Lecture 3 - Probability and Distribution
Lecture 4 - Random variable and Expectation - I
Lecture 5 - Random variable and Expectation - II
Lecture 6 - Random variable and Expectation - III
Lecture 7 - Random variable and Expectation - IV
Lecture 8 - Module
Lecture 9 - R
Lecture 10 - R as calculator and plotter
Lecture 11 - R as calculator and plotter
Lecture 12 - Data in tabular form
Lecture 13 - Tabular data in R
Lecture 14 - Dataframe in R
Lecture 15 - R libraries for plotting
Lecture 16 - Importing and plotting data
Lecture 17 - Property charts
Lecture 18 - Introduction to R
Lecture 19 - Descriptive statistics
Lecture 20 - Presenting experimental results
Lecture 21 - Property based reports, errors, significant digits
Lecture 22 - Dealing with distributions
Lecture 23 - Grain size data
Lecture 24 - Case study
Lecture 25 - Grain size in a two phase steel
Lecture 26 - Presenting experimental results
Lecture 27 - Errors and their propagation
Lecture 28 - Fitting experimental data to distributions
Lecture 29 - Combining uncertainties

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- Lecture 30 - Summary
- Lecture 31 - Special Random Variables - I
- Lecture 32 - Special Random Variables - II
- Lecture 33 - Special Random Variables - III
- Lecture 34 - Special Random Variables - IV
- Lecture 35 - Special Random Variables - V
- Lecture 36 - Probabilty Plots
- Lecture 37 - Probability distributions
- Lecture 38 - Properties of probability distributions
- Lecture 39 - Bernoulli trials and binomial distributions
- Lecture 40 - Atom probe technique and negative binomial distribution
- Lecture 41 - Atom probe and hypergeometric distribution
- Lecture 42 - Atom probe
- Lecture 43 - Nucleation and Poisson distribution
- Lecture 44 - Normal distribution
- Lecture 45 - Normal distribution and error function
- Lecture 46 - Probability scale
- Lecture 47 - Sampling Distribution - I
- Lecture 48 - Sampling Distribution - II
- Lecture 49 - Sampling Distribution - III
- Lecture 50 - Parameter Estimation - I
- Lecture 51 - Parameter Estimator - II
- Lecture 52 - Parameter Estimator - III
- Lecture 53 - Parameter Estimator - IV
- Lecture 54 - Bayesian Estimation
- Lecture 55 - Log normal distribution
- Lecture 56 - Lorentz/Cauchy distribution
- Lecture 57 - Lifetime and exponential distributions
- Lecture 58 - Distributions from statistical mechanics
- Lecture 59 - Uniform distribution and summary of probability distributions
- Lecture 60 - Data processing
- Lecture 61 - Distribution function of a data series
- Lecture 62 - Estimating mean and mean-square-deviation of data
- Lecture 63 - Data with unequal weights
- Lecture 64 - Robust estimates
- Lecture 65 - From data to underlying distribution
- Lecture 66 - Bootstrap method
- Lecture 67 - Summary
- Lecture 68 - Hypothesis Testing - I

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Lecture 70 - Hypothesis Testing - III
Lecture 71 - Hypothesis Testing - IV
Lecture 72 - Hypothesis Testing - V
Lecture 73 - Hypothesis Testing - VI
Lecture 74 - Graphical handling of data
Lecture 75 - Fitting and graphical handling of data
Lecture 76 - Data transformable to linear
Lecture 77 - Data of known functional form
Lecture 78 - Calibration, Fitting, Hypotheses testing
Lecture 79 - Analysis of variance
Lecture 80 - Summary
Lecture 81 - Regression Analysis - I
Lecture 82 - Regression Analysis - II
Lecture 83 - Regression Analysis - III
Lecture 84 - Regression Analysis - IV
Lecture 85 - Analysis of Variance - I
Lecture 86 - Analysis of Variance - II
Lecture 87 - Design of Experiment - I
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