

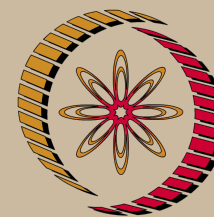
# NOC: Biostatistics, and Design of Experiments - Video course

## COURSE OUTLINE

Biostatistics is the application of statistics to different topics in biology including medicine, pharmacy, public health science, agriculture and fishery. It involves the analysis of data from experiments; its interpretation and drawing conclusion from the results. It is very relevant to all UG and PG level degree programmes majoring in Biotechnology and allied fields as well as practicing scientists. It involves the application of statistical theory to real-world problems, the practice of designing and conducting biomedical experiments and clinical trials. Design of experiments is planning experimental strategy, screening a large number of parameters and selecting the important ones, determining the minimum number of experiments and deciding on the mode and manner in which experiment have to be conducted. The course encompasses topics such as distribution of data, sample size, tests of significance, data reduction, regression analysis, comparison of performance of drugs in clinical trials, design of experiments, screening and second order designs.

## COURSE DETAIL

ModuleNo.	Topics
1.	Introduction to statistics (various distributions) Normal distribution Sample and population Sample and population
2.	Z distribution Z distribution/confidence interval Tests of significance – t test Tests of significance – t test
3.	Tests of significance – t test Tests of significance – t test Tests of significance – t test Tests of significance – t test
4.	F test ANOVA
5.	2 test/Odds ratio Non parametric tests Other tests
6.	Design of experiment- introduction Design of experiment Screening designs Screening design - Data analysis
7.	Screening design - Data analysis Higher order designs Higher order designs Higher order designs
	Regression analysis



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### Pre-requisites:

Basics of probability and statistics

### Coordinators:

**Prof. Mukesh Doble**  
Department of  
Biotechnology/IIT Madras

8.

Regression analysis  
Data reduction  
Data reduction