JE 213: INTRODUCTION TO STATISTICAL HYPOTHESIS TESTING
Credits: 3:0
Instructors: A. Joshi and T. N. C. Vidya

This course is aimed at providing (a) an overview of the role of statistical hypothesis testing in empirical science, and (b) an introduction to experimental design and the formal testing of hypotheses using parametric and non-parametric methods.

Outline:

The nature of understanding and the epistemology of models as explanations; role of hypothesis testing in such an epistemology; basic introduction to the propensity and frequency interpretations of probability; basic principles of probability and random variables; commonly used discrete and continuous random variables; sampling and estimation; different methods of estimation; Bayesian vs frequentist approaches; the basic logic of hypothesis testing; sampling distributions and confidence intervals; t-tests and F-tests; linear regression; analysis of variance and experimental design; non-parametric equivalents for frequently used parametric tests; matrix correlations; randomization methods.