

# Introduction to Probability and Statistics

## Statistics

### Descriptive Statistics

#### Collection of Data

Randomly

Intentionally

#### Representation of Data

##### Tables

Frequency  
Tables

Frequency  
Distribution  
Tables

##### Graphics

Pie Charts

Bar Charts

Histograms

Polygons

#### Numerical Characteristics of Data

##### Central Tendency Measures

Mean

Median

Mode

##### Measures of Position

Percentiles

Deciles

Quartiles

##### Measures of Dispersion

Standard Deviation

Range

Interquartile Range

##### Form Measures

Skewness

## Correlation and Regression Analysis

### Simple Linear Correlation

Pearson's  
Correlation  
Coefficient

### Simple Linear Regression

Yon  $X$   
Regression  
Straight

### Inferential Statistics

#### Sampling

Random  
Samples

Sampling  
Distributions

#### Estimation

Point  
Estimation

Interval  
Estimation

#### Testing

Testing for  
Mean of  
Normal  
Population

Testing for  
Proportion  
of Bernoulli  
Population

## Probability

### General Concepts

Fundamental Principles  
of Calculating

Probability Space and  
Calculating of  
Probabilities of Events

### Random Variables

#### Discrete Random Variables

Bernoulli

Binomial

Discrete Uniform

Geometric

#### Continuous Random Variables

Continuous Uniform

Exponential

Normal