

List of Topics

ENGR 241 Probability and Statistics for Engineers w Data Science Applications

Probability Theory

- Probabilities
- Events
- Combinations
- Intersections and Unions
- Conditional probability
- Theorem of Total Probability
- Baye's rule
- Counting methods

Random Variables

- Discrete
- Continuous
- Expected Value
- Variance
- Joint Distributions
- Functions

Binomial Process

- Binomial
- Negative Binomial
- Geometric
- Hypergeometric
- Multinomial

Poisson Process

- Poisson
- Exponential
- Weibull

Normal Distribution, Lognormal Distribution

Uniform Distribution

Central Limit Theorem

Normal Approximations to Binomial and Poisson

Confidence Intervals and Hypothesis Testing

- Population Mean
- Difference between two means
- Proportions
- Difference between two proportions

Simple and Multi Linear Regression

ANOVA tables for goodness of fit

Data Analysis and Linear Regression Modeling using Python