

Length: Two Semesters

Unit 1: Introduction to Statistics

- What Is Statistics?
- Collecting Data
- Random Sampling
- Experimental Design
- Introduction to Statistics Wrap-Up

Unit 2: Describing Data Graphically

- Categorical Data
- Numerical Data
- Two-Way Frequency Tables
- Describing Data Graphically Wrap-Up

Unit 3: Measures of Center and Spread

- Measures of Center
- Measures of Spread
- Box Plots
- Project
- Measures of Center and Spread Wrap-Up

Unit 4: Describing Data Sets

- Describing Distributions
- Comparing Distributions
- Transforming Univariate Data
- Describing Data Sets Wrap-Up

Unit 5: Modeling Data

- Linear Models in Data
- Correlation
- Regression Methods
- Assessing Data Models
- Nonlinear Models
- Transforming Bivariate Data
- Modeling Data Wrap-Up

Unit 6: Semester 1 Review and Exam

Unit 7: Introduction to Probability

- Random Outcomes, Sample Spaces, and Events
- Permutations and Combinations
- Independent and Dependent Events
- Conditional Probability
- Introduction to Probability Wrap-Up

Unit 8: Applications of Probability

- Using Two-Way Frequency Tables
- Expected Value and Fair Decisions
- Simulations
- Project
- Applications of Probability Wrap-Up

Unit 9: Discrete Probability Distributions

- Discrete Random Variables
- Binomial Probability Distributions
- Cumulative Binomial Probability Distributions
- Discrete Probability Distributions Wrap-Up

Unit 10: Continuous Probability Distributions

- Continuous Random Variables
- Normal Distributions
- z -Scores
- Continuous Probability Distributions Wrap-Up

Unit 11: Sample Distributions and Confidence Intervals

- Single Sample Means
- Single Sample Proportions
- Confidence Intervals: Sample Means
- Confidence Intervals: Sample Proportions
- Evaluating Statistical Studies
- Sample Distributions and Confidence Intervals Wrap-Up

Unit 12: Semester 2 Review and Exam