Statistical Reasoning

Days	Unit	Topics
30	Unit 1 Data Analysis	• Introduction to Statistics • Categorical Data Displays • Relative Frequencies • Comparing Two Categorical Variables • Describing and Comparing Data with Dotplots and Stemplots • Describing and Comparing Data with Histograms • Measures of Center and Location • Measures of Variability • Boxplots and Outliers
15	Unit 2 The Normal Distribution	• Calculating and Interpreting z-scores • Uniform Density Curves • Normal Distributions • Finding Areas within a Normal Distribution • Finding Values from Probabilities
28	Unit 3 Simple Linear Regression	• The Relationship between Two Quantitative Variables • Correlation • Making Predictions from a Least-Squares Regression Line • Residuals • R-squared and s • Transforming to Achieve Linearity • Choosing the Best Model
42	Unit 4 Sampling and Experimentation	• Introduction to Sampling Methods • Simple Random Sample • Other Sampling Methods • Considerations When Sampling • Observational Studies and Experiments • Additional Principles of Experimental Design • How to Experiment Well • Experimental Designs • Scope of Inference

25	Unit 5 Sampling Distributions	• Introduction to Sampling Distributions • Sampling Distributions – Center and Variability • Sampling Distribution of the Sample Proportion • Calculating Probabilities for Sampling Distribution • Sampling Distribution of the Sample Mean • Using the Central Limit Theorem
22	Unit 6 Estimating Proportions with Confidence	• Introduction to Confidence Intervals • More about Confidence Intervals • Preparing to Estimate a Population Proportion • Estimating a Population Proportion • Estimating the Difference between Two Population Proportions
23	Unit 7 Testing Claims about Proportions	• Introduction to Hypothesis Testing • Type I and Type II Errors • Preparing to Test a Claim about a Population Proportion • Testing a Claim about a Population Proportion • Testing a Claim about a Difference between Proportions
19	Unit 8 Estimating Means with Confidence	• Preparing to Estimate a Population Mean • Estimating a Population Mean • Estimating a Difference in Two Population Means • Estimating the Mean Difference
22	Unit 9 Testing Claims about Means	• Preparing to Test a Claim about a Mean • Testing a Claim about a Population Mean • Significance Test and Confidence Intervals • Testing a Claim about a Difference between Means • Testing a Claim about a Mean Difference • Choosing the Appropriate Inference Procedure
20	Unit 10 Inference for Distributions and Relationships	• Preparing to Conduct a Chi-Square Test for Goodness of Fit • Conducting a Chi-Square Test for Goodness of Fit • Preparing to Conduct Inference for Two-Way Tables • Chi-Square Test for Homogeneity • Chi-Square Test of Association/Independence