Probability and Statistics Module

Required Materials

Day 0-Set Theory	
Review of Set Theory	Computer for Power Point Presentation
Day 1-Counting	
Basic Principles of Counting	Computer for Power Point Presentation
Permutations and Combinations	Computer for Power Point Presentation
Day 2-Probability	
What is Probability?	Dice, Coins, Calculators or other Random Number Generator device
Activity: Garbage In, Garbage Out	Pennies
Probability of an Event	Computer for Power Point Presentation
Activity: How Much Does a Grecian Urn?	Red and white marbles or cubes (4 red and 4 white for each group)
Activity: Hidden Treasure	None
Union and Intersection of Events, Complement of an Event, Odds	Computer for Power Point Presentation
Activity: A Game of Darts, Vader?	One set of Tangrams for each group of four
Activity: Split the Pot	Two dice for each group
Activity: Does One-and-One Make Two?	For each group, two dice, two coins, one deck of cards, two spinners, one set of number tiles 0-9, 5 marbles-2 red and 3 yellow
Day 3-Probability (continued)	
Conditional Probability	Computer for Power Point Presentation
Activity: With and Without Ewe	Graph paper for each participant
Activity: Car Trouble	None
Random Variables and Probability Distributions	Computer for Power Point Presentation
Activity: Game of Chuck-a-Luck	Three dice for each group
Expected Value	Computer for Power Point Presentation
Activity: Rock Concert	Three dice for each group
Activity: One-and-One Revisited	None
Day 4- Statistics	
Describing Data	Computer for Power Point Presentation

Summarizing Data – Measures of Central Tendency	Computer for Power Point Presentation, Computers for each participant
Activity: Measures of Central Tendency	Graphing calculators for each participant and overhead calculator
Summarizing Data – Measures of Variability	Computer for Power Point Presentation, Computers for each participant
Activity: Measures of Variability	Graphing calculators for each participant and overhead calculator
Day 5- Statistics (continued)	
Graphing Data – Pie Charts and Bar Charts	Computer for Power Point Presentation, Computers for each participant
Graphing Data – Stem-and-Leaf Plots	Computer for Power Point Presentation, Computers for each participant
Activity: Stem-and-Leaf Plots	Graphing calculators for each participant and overhead calculator
Graphing Data – Box-and-Whisker Plots	Computer for Power Point Presentation, Computers for each participant
Activity: Box-and-Whisker Plots	Graphing calculators for each participant and overhead calculator
Graphing Data – Histograms	Computer for Power Point Presentation, Computers for each participant
Activity: Frequency Tables and Histograms	Graphing calculators for each participant and overhead calculator
Graphing Data – Cumulative Frequency Polygons	Computer for Power Point Presentation, Computers for each participant
Graphing Data – Scatterplots	Computer for Power Point Presentation, Computers for each participant
Sampling from a Population	Computer for Power Point Presentation, Computers for each participant
Day 6- Statistics (continued)	
Estimation – Standard Normal Distribution	Computer for Power Point Presentation, Computers for each participant
Estimation – Z-Scores	Computer for Power Point Presentation, Computers for each participant
Activity: Standardizing Scores	Graphing calculators for each participant and overhead calculator
Estimation – Linear Regression	Computer for Power Point Presentation, Computers for each participant
Estimation – Correlation	Computer for Power Point Presentation, Computers for each participant