FULLERTON JOINT UNION HIGH SCHOOL DISTRICT

MATHEMATICS - Probability and Statistics

I. Course Information
1. Course Title: Probability and Statistics
2. Length of Course: Year
3. Units of Credit: Ten
4. Prerequisites: Refer To Registration Presentation
5. Grade Level: 11 (if completed Algebra 2 with C- or better)
12 (if completed Algebra 1/equivalent with C- or better;
Geometry recommended)
6. Special Course Designation: None
7. Course Code Number:
8. Course Materials: Title: Statistics and Probability with Applications, 3rd ed. (2017)

Authors: Starnes and Tabor
Publisher: Bedford, Freeman and Worth
online site for students & teachers: Launchpad

II. Course Description
This course is an introduction to the study of probability, interpretation of data, and fundamental statistical problem
solving. Students will collect and organize data and apply an understanding of chance and inference. Mastery of
this academic content will provide students with a solid foundation in probability and facility in processing
statistical information.

III. Course Goals
Students will complete this course with knowledge and proficiency in the following topics:
1. Producing data
2. Organizing data
3. Chance
4. Inference
5. Recognizing sampling methods
6. Designing experiments
7. Performing and interpreting statistical analysis
8. Calculating elementary probability
9. Performing hypothesis testing
10. Finding confidence intervals

IV. Content and Course Objectives
Objectives
1.0 Students know the Definition of the notion of independent events and can use the rules for addition,
multiplication, and complementation to solve for probabilities of particular events and finite sample spaces.
2.0 Students know the definition of conditional probability and use it to solve for probabilities in finite sample
spaces.

3.0 students demonstrate an understanding of the notion of discrete random variables are using them to solve for
the probabilities of outcomes, such is the probability of the occurrence of five head skin 14 coin tosses.
4.0 Students are familiar with the standard distribution (normal, binomial, and exponential) and can use them to
solve for events in problems in which the distribution belongs to those families.
5.0 Students determine the mean and standard deviation of a normally distributed random variable.
6.0 Students know the definition of the mean, median, and mode of a distribution of data and can compute each
in particular situations.
7.0 Students compute the variance and the standard deviation of the distribution of data.
8.0 Students organize and describe distributions of data by using a number of different methods, including
frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplot, and box-and-whisker plots.
Content

Chapter 6 - Sampling Distributions
Lesson 6.1 - What Is a Sampling Distribution?
Lesson 6.2 - Sampling Distributions: Center and Variability
Lesson 6.3 - The Sampling Distribution of a Sample Count (The Normal Approximation to the Binomial)
Lesson 6.4 - The Sampling Distribution of a Sample Proportion
Lesson 6.5 - The Sampling Distribution of a Sample Mean
Lesson 6.6 - The Central Limit Theorem

Lesson 10.3 - Testing the Relationship between Two Categorical Variables
Lesson 10.4 - Chi-Square Tests for Association
Lesson 10.5 - Testing the Relationship between Two Quantitative Variables
Lesson 10.6 - Inference for the Slope of a Least-Squares Regression Line