Department of Teaching & Learning
Parent/Student Course Information

DUAL ENROLLMENT ELEMENTARY STATISTICS
TIDEWATER COMMUNITY COLLEGE
(MTH 157)
One-half VBCPS credit, 3 TCC credits, One semester course

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION
Elementary Statistics is a dual enrollment, one semester course providing the successful student with three college semester credits and one-half Virginia Beach City Public Schools (VBCPS) elective credit. The course presents elementary statistical methods and concepts including descriptive statistics, estimation, hypothesis testing, linear regression and categorical data analysis.

*Tuition, fees and textbook fees are the responsibility of the student in accordance with the dual enrollment regulation (5-30.2).

PREREQUISITE
Algebra II
Objectives for MTH 157: Elementary Statistics

Chapter 1: Introduction to Data
1.1 What Are Data
1.2 Classifying and Storing Data
1.3 Organizing Categorical Data
1.4 Collecting Data to Understand Causality

Chapter 2: Picturing Variation with Graphs
2.1 Visualizing Variation in Numerical Data
2.2 Summarizing Important Features of a Numerical Distribution
2.3 Visualizing Variation in Categorical Data
2.4 Summarizing Categorical Distributions
2.5 Interpreting Graphs

Chapter 3: Numerical Summaries of Center and Variation
3.1 Summaries for Symmetric Distributions
3.2 What’s Unusual? The Empirical Rule and z-Scores
3.3 Summaries for Skewed Distributions
3.4 Comparing Measures of Center
3.5 Using Boxplots for Displaying Summaries

Chapter 4: Regression Analysis: Exploring Associations between Variables
4.1 Visualizing Variability with a Scatterplot
4.2 Measuring Strength of Association with Correlation
4.3 Modeling Linear Trends
4.4 Evaluating the Linear Model

Chapter 5: Modeling Variation with Probability
5.1 What is Randomness?
5.2 Finding Theoretical Probabilities
5.3 Associations in Categorical Variables
5.4 The Law of Large Numbers

Chapter 6: Modeling Random Events: The Normal and Binomial Models
6.1 Probability Distributions are Models of Random Experiments
6.2 The Normal Model
6.3 The Binomial Model

Chapter 7: Survey Sampling and Inference
7.1 Learning about the World through Surveys
7.2 Measuring the Quality of a Survey
7.3 The Central Limit Theorem for Sample Proportions
7.4 Estimating the Population Proportion with Confidence Intervals

Chapter 8: Hypothesis Testing for Population Proportions
8.1 The Main Ingredients of Hypothesis Testing
8.2 Characterizing p-Values
8.3 Hypothesis Testing in Four Steps
8.5 Understanding Hypothesis Testing
Chapter 9: Inferring Population Means
9.1 Sample Means of Random Samples
9.2 The Central Limit Theorem for Sample Means
9.3 Answering Questions about the Mean of a Population
9.5 Overview of Analyzing Means

Chapter 10: Analyzing Categorical Variables and Interpreting Research
10.1 The Basic Ingredients for Testing with Categorical Variables
10.2 Chi-Square Tests for Association between Categorical Variables
10.3 Reading Research Papers
Notice of Non-Discrimination Policy

Virginia Beach City Public Schools does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation/gender identity, pregnancy, childbirth or related medical condition, disability, marital status, age, genetic information or veteran status in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. School Board policies and regulations (including, but not limited to, Policies 2-33, 4-4, 4-6, 4-43, 5-7, 5-19, 5-20, 5-44, 6-7, 7-48, 7-49, 7-57 and Regulations 4-4.1, 4-4.2, 4-6.1, 4-43.1, 5-44.1, 7-11.1, 7-17.1 and 7-57.1) provide equal access to courses, programs, counseling services, physical education and athletic, vocational education, instructional materials and extracurricular activities.

To seek resolution of grievances resulting from alleged discrimination or to report violations of these policies, please contact the Title VI/Title IX Coordinator/Director of Student Leadership at (757) 263-2020, 1413 Laskin Road, Virginia Beach, Virginia, 23451 (for student complaints) or the Section 504/ADA Coordinator/Chief Human Resources Officer at (757) 263-1133, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (for employees or other citizens). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student’s school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Laskin Road Annex, 1413 Laskin Road, Virginia Beach, Virginia, 23451.

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