VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

Department of Teaching & Learning
Parent/Student Course Information

PROBABILITY AND STATISTICS
(MA 3190)
One-half credit, One semester
Grade 12

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
This course provides an understanding of the kinds of regularity that occur in random functions and also provides experiences in associating probabilistic mathematical models with phenomena in the real world. Topics include averages, measures of variation, frequency distributions and probability functions associated with random variables, binomial distributions, sampling, the normal curve and statistical methods available for decision making. The course can be taken at any point after the completion of Algebra II/Trigonometry or Algebra II.

PREREQUISITE
Algebra II or Algebra II/Trigonometry

OPTIONS FOR NEXT COURSE
Trigonometry and/or Discrete Mathematics

REQUIRED TEXTBOOK
Elementary Statistics: Picturing the World, Sixth Edition, Larson and Farber, Pearson Education (2014)

RECOMMENDED CALCULATOR
TI-83 Plus, TI-84 Plus, TI-84 Plus C or TI-84 Plus CE

Virginia Beach Instructional Objectives
Probability and Statistics (1 Semester) – MA3190

VBO#	Objective
	Unit 1: Descriptive Statistics and Experimental Design
MA.PS.1.1	The student will describe sampling techniques. **(SOL PS.9)**
MA.PS.1.2	The student will describe methods of data collection. **(SOL PS.8)**
MA.PS.1.3	The student will plan and conduct a survey. **(SOL PS.9)**
MA.PS.1.4	The student will construct a visual form of a data set and draw conclusions from the data. **(SOL PS.1, PS.3)**
MA.PS.1.5	The student will compute and interpret measures of central tendency and variation given a set of data and identify outliers. **(SOL PS.2, PS.3)**
	Unit 2: Probability
MA.PS.2.1	The student will utilize empirical and classical methods for finding probabilities. **(SOL PS.12)**
MA.PS.2.2	The student will classify two or more events as complementary, dependent, independent and/or mutually exclusive. **(SOL PS.11, PS.12)**
MA.PS.2.3	The student will apply the law of large numbers concept and the addition and multiplication rules of compound events. **(SOL PS.11, PS.12)**
	Unit 3: Discrete Distributions
MA.PS.3.1	The student will construct a discrete probability distribution and find the mean and standard deviation and apply those skills in problem-solving settings. **(SOL PS.13)**
MA.PS.3.2	The student will compute the mean, standard deviation and probabilities in a binomial experiment and apply those skills in problem-solving settings. **(SOL PS.13)**
	Unit 4: Continuous Distributions
MA.PS.4.1	The student will identify properties of a normal distribution and use a table or graphing calculator to apply the normal distribution to determine probabilities in order to solve problems. **(SOL PS.16)**
MA.PS.4.2	The student will compute probabilities and scores for standard and nonstandard normal distributions and apply those skills to solve problems. **(SOL PS.16)**
	Unit 5: Inferential Statistics
MA.PS.5.1	The student will construct a confidence interval to estimate a population mean, the difference in two population means and the mean difference of paired data. **(SOL PS.17)**
MA.PS.5.2	The student will construct a confidence interval to estimate a population proportion and the difference in two population proportions. **(SOL PS.17)**
	Unit 6: Correlation and Regression
MA.PS.6.1	The student will analyze scatterplots to identify and describe the relationship between two variables, using shape; strength of relationship; clusters; positive, negative, or no association; outliers; and influential points. **(SOL PS.4)**

Dr. Aaron C. Spence, Superintendent
Virginia Beach City Public Schools
2512 George Mason Drive, Virginia Beach, VA 23456-0038

Produced by the Department of Media and Communications for the Department of Teaching and Learning.
For further information please call (757) 263-1070.

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.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email him at Emmanuel.Cenizal@VBSchools.com

vbschools.com
your virtual link to Hampton Roads' largest school system

VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

(Revised August 2017)