



VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

Department of Teaching & Learning
Parent/Student Course Information

DUAL ENROLLMENT APPLIED CALCULUS
TIDEWATER COMMUNITY COLLEGE
(MTH 270)

One-half VBCPS credit, 3 TCC credits, One semester

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

Applied Calculus 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. This course provides an overview of calculus for students in the fields of business, economics and certain sciences. It covers limits, differentiation and integration of algebraic, exponential and logarithmic functions and introduces the calculus of several variables. It emphasizes the use of these concepts in various application problems.

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

PREREQUISITE

MTH 163 or appropriate score on the placement test

Objectives for MTH 270: Applied Calculus

Chapter 2: Derivatives and Their Uses

- 2.1 Limits and Continuity
- 2.2 Rates of Change, Slopes and Derivatives
- 2.3 Some Differentiation Formulas
- 2.4 The Product and Quotient Rules
- 2.5 Higher Order Derivatives
- 2.6 The Chain Rule and Generalized Power Rule
- 2.7 OMIT

Chapter 3: Further Applications of Differentiation

- 3.1 Graphing Using the First Derivative
- 3.2 Graphing Using the First and Second Derivative
- 3.3 Optimization
- 3.6 Implicit Differentiation and Related Rates
- 3.7 Differentials, Approximations and Marginal Analysis (cover lightly)

Chapter 4: Exponential and Logarithmic Functions

- 4.3 Differentiation of Logarithmic and Exponential Functions
- 4.4 Two Applications to Economics: Relative Rates and Elasticity of Demand

Chapter 5: Integration and Its Applications

- 5.1 Antiderivatives and Indefinite Integrals
- 5.2 Integration Using Logarithmic and Exponential Functions
- 5.3 Definite Integrals and Area (Just Cover the Definite Integral)
- 5.4 Further Applications of Definite Integrals: Average Value and Area between Curves
- 5.5 Two Economic Applications: Consumers' Surplus and Income Distribution
- 5.6 Integration by Substitution

Chapter 6: Integration Techniques and Differential Equations

- 6.1 Integration by Parts
- 6.3 Improper Integrals

Chapter 7: Calculus of Several Variables

- 7.1 Functions of Several Variables
- 7.2 Partial Derivatives

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For further information please call (757) 263-1070.

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