

# *Norwood Public Schools*

## *Curriculum Overview*

### *Honors Calculus/Discrete Math 241*

#### **Description:**

Calculus is a full-year course concentrating on the calculus of functions of a single variable. Students will study functions, limits, differentiation, and integration. This course is designed for students who have passed Honors Pre-Calculus/Trigonometry. They should have a thorough knowledge of algebra, Euclidean geometry, trigonometry, and analytic geometry (rectangular and polar coordinates, equations and graphs, lines, conics). Before studying calculus, all students should complete four years of secondary mathematics designed for college-bound students. Knowledge of linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric, and piecewise-defined functions is a must. In particular, before studying calculus, students must be familiar with the properties of functions, the algebra of functions, and the graphs of functions. Students must also understand the language of functions (domain and range, odd and even, periodic, symmetry, zeros, intercepts, etc) and know the values of the six trigonometric functions of angles, both in degrees and radians.

#### **Learning Experiences:**

Students will experience learning through many formats in addition to routine classroom experiences. The variety of technology includes the use of the ENO Board in conjunction with the programs, such as Easiteach and Workspace, with technological devices, such as MOBI and e-Clickers. Additionally, these calculus students are exposed to resources such as the computer lab and the library to complement the primary Calculus content (i.e. Khan Academy) Students complete projects and other various activities.

#### **Content:**

##### *Differential Calculus*

Chapter 1: Prerequisites for Calculus

Chapter 2: Limits and Continuity

Chapter 3: Derivatives

Chapter 4: Application of Derivatives

##### *Integral Calculus*

Chapter 5: The Definite Integral

Chapter 6: Differential Equations and Mathematical Modeling

Chapter 7: Applications of Definite Integrals

#### **Resources Used:**

Resources include the textbook:

CALCULUS: Graphical, Numerical, Algebraic (Finney, Demana, Waits, Kennedy) 2003  
ISBN: 0-13-063131-0