AP Calculus BC Course Overview

Content Area: **Math**
Course(s): **AP CALCULUS BC**
Time Period:
Length: **Full Year**
Status: **Published**

Cover

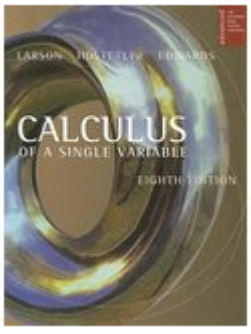
Course Overview

COURSE DESCRIPTION:

This course will build on the students' understanding of the concepts of calculus including the understanding of the derivative and the integral. The course emphasizes the relationship between the graphical, numerical, verbal and analytical representations of problems and solutions. Through the exploration of problems, students also develop fluency in computational procedures for find derivatives and antiderivatives of algebraic, rational, exponential, parametric and trigonometric functions. Technology is used regularly by students to reinforce the understanding of the relationships.

Textbooks and other resources

Textbook: Calculus of a Single Variable; Larson, Hoestetler, Edwards; Houghton Mifflin; copyright 2006; adopted 4/21/2007



- TI 83 or TI – 84 graphing calculator is required for this course.

- Teachers Guide – AP Calculus
- Learning by Discovery a lab manual for Calculus by Anita Solow, MAA Notes Volume 27, 1997
- Multiple Choice & Free-Response Questions in Preparation for the AP Calculus (AB) Examination, 8th Edition by David Lederman, D & S Marketing, 2003
- Calculus in Motion, Dynamic Animation in Calculus, by Audrey Weeks 2003

- Exploring Calculus with the Geometer's Sketchpad

Standards for Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Grading and Evaluation Guidelines

GRADING GUIDELINES:

As per Math Department Policy, grades will be determined by a variety of assessment strategies, including Major Assessments, Minor Assessments, and Performance Assessments. In addition to tests and quizzes, students will be evaluated on a combination of performance assessment instruments, including homework completions, cooperative group participation, note-taking, open ended question responses, lab reports and/or supplemental projects.

GRADING PROCEDURES:

Grading procedures must be described in sufficient detail so that a pupil will understand, the minimal to advanced proficiency, expected of him/her as the outcome of each unit, for the marking period and for the course as a whole. Benchmark level assessments associated with the course also need to be identified. While assessments of proficiency levels must be valid and reliable they do not need be the same for all students. Other criteria to be considered in grading must be identified and the degree to which such criteria will be considered in a grade. Each pupil must receive a copy of the grading procedures, proficiencies and criteria for each unit and/or marking period.

COURSE EVALUATION:

Course achievement will be evaluated as the percent of all pupils who achieve the minimum level of proficiency (final average grade) in the course. Student achievement levels above minimum proficiency will also be reported. Final grades, and where relevant mid-term and final exams, will be analyzed by staff for the total cohort and for sub-groups of students to determine course areas requiring greater support or modification.

In terms of proficiency the East Brunswick grades are as follows:

A	**Excellent**	**Advanced Proficient**
B	**Good**	**Above Average Proficient**
C	**Fair**	**Proficient**
D	**Poor**	**Minimally Proficient**
F	**Failing**	**Partially Proficient**

In this course the goal is that a minimum of 95% of the pupil's will meet at least the minimum proficiency level (D or better) set for the course. The department will analyze the achievement of students on Unit Assessments, Mid-term and Final Exams and Final Course Grades, and for Final Course Grades the achievement of sub-groups identified by the state to determine if modifications in the curriculum and instructional methods are needed.

Course evaluation requires the answering of the following questions:
1. Are course content, instruction and assessments aligned with the required NJSLS? 2. Is instruction sufficient for students to achieve the Standards? 3. Do all students achieve the set proficiencies/benchmarks set for the course?

Other Details

Mathematics (AAAN)

A.P. Calculus BC

Course No. 1165

SCED

02125 AP Calculus BC

Following the College Board's suggested curriculum designed to parallel college-level calculus courses, AP Calculus BC courses provide students with an intuitive understanding of the concepts of calculus and experience with its methods and applications, and also require additional knowledge of the theoretical tools of calculus. These courses assume a thorough knowledge of elementary functions, and cover all of the calculus topics in AP Calculus AB as well as the following topics: vector functions, parametric equations, and polar coordinates; rigorous definitions of finite and nonexistent limits; derivatives of vector functions and parametrically defined functions; advanced techniques of integration and advanced applications of the definite integral; and sequences and series.