

**Franklin High School**

**AP Calculus AB Course Syllabus 2019-20**

**Deb Wasserman**

Course Title: AP Calculus AB

Grade Level(s): 9th, 10th,  
11th, 12th

Prerequisites:

Successful completion of Pre-Calculus.

Course description:

AP Calculus AB is an introductory college-level calculus course. Students cultivate their understanding of differential and integral calculus through engaging with real-world problems represented graphically, numerically, analytically, and verbally and using definitions and theorems to build arguments and justify conclusions as they explore concepts like change, limits, and the analysis of functions.

Standards/Final Proficiencies:

1. Prerequisites for Calculus. Lines, functions and graphs, exponential functions, parametric equations, functions and logarithms, trigonometric functions.
2. Limits and Continuity. Rates of change and limits, limits involving infinity, continuity, rates of change and tangent lines.
3. Derivatives and Applications of Derivatives.  
Review of derivatives, rules for differentiation, derivatives of trigonometric functions, applications of derivatives. This review will cover calculator programs, functions, and methods.
4. Definite Integrals and Differential Equations and Modeling. Review of integrals, slope fields, and numerical methods, definite integral and antiderivatives, integration by substitution and parts, and applications.
5. Applications of Definite Integrals. Integral of Net Change, Areas in the Plane, and Volumes.

Schedule of topics/units covered:

1. Prerequisites for Calculus.
2. Limits and Continuity.
3. Derivatives
4. Applications of Derivatives.
5. Definite Integrals
6. Differential Equations and Modeling.
7. Applications of Definite Integrals.

Students will have the opportunity to complete practice AP multiple choice and free response questions throughout the year, as well as several full-length, timed, multiple choice tests, so that they are well-prepared for the AP exam in May.

Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):

Ability to retake and/or revise assessments. Clearly posted agenda, daily learning target(s) and content vocabulary. Investigative, problem-based curricular model to attend to CCSS Mathematical Practices of 'making sense of problems and persevere in solving them'; 'Reason abstractly'; and 'look for and make use of structure,' for example. Explicit instruction using guided notes and teacher-provided notes.

Assessment (pre/post)/evaluation/grading policy:

*Grades should be based the student's demonstration of understanding of the standards.*

Standard Grading Scale:

90-100% - A

80-89% - B

70-79% - C

60-69% - D

59- below - F

No notes on tests unless IEP or 504 plan states otherwise.

Grades will be weighted as follows:

Individual Tests: 70%

Team Tests: 20%

Assignment: 10%

Behavioral expectations:

Students are expected to be respectful to their teacher and peers at all times. Students are also expected to work both independently and collaboratively in study teams. Students and teachers will refer to the Franklin High School Student Climate Guide.

Safety issues and requirements:

Students and teachers will refer to the Franklin High School Student Climate Guide.