



Course Overview

High School | AP Calculus AB - Last Updated on April 2, 2025

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- With confidence and perseverance, young people can tackle complex and novel mathematical challenges, becoming skilled problem solvers who take ownership over their learning process.
- Young people possess the ability to reason mathematically, make conjectures, solve problems and build understanding through effective dialogue and collaboration.
- Learners exhibit critical inquiry through the deliberate asking of questions and the integration of conceptual understanding, reasoning abilities, and procedural fluency.
- Strategically selecting materials, technology, and other resources support mathematical learning and aid in achieving mathematical goals. (NCTM, 2024)

Course Description

This course, for the accelerated pathway, gives high school students an opportunity to experience the expectations and requirements of a college-level mathematics course. Areas of study include limits, differentiation and integration of polynomial, rational, algebraic, exponential, logarithmic and trigonometric functions, an introduction to integration, area, volumes of rotation, separable differential equations, slope fields, and the Fundamental Theorem of Calculus. Applications use algebra, geometry, trigonometry and some principles of physics and economics. A scientific calculator is needed for this course. Students enrolled in this course are encouraged to take the AP Calculus AB Exam.

STANDARDS

College Board - AP Calculus AB/BC - Skills (2020)

APCALCAB.IMP.1A

APCALCAB.IMP.1B

APCALCAB.IMP.1C

APCALCAB.IMP.1D

APCALCAB.IMP.1E

APCALCAB.IMP.1F

APCALCAB.CR.2A

APCALCAB.CR.2B

APCALCAB.CR.2C

APCALCAB.CR.2D

APCALCAB.CR.2E

APCALCAB.J.3A

APCALCAB.J.3B

APCALCAB.J.3C

APCALCAB.J.3D

APCALCAB.J.3E

APCALCAB.J.3F

APCALCAB.J.3G

APCALCAB.CN.4A

APCALCAB.CN.4B

APCALCAB.CN.4C

APCALCAB.CN.4D

APCALCAB.CN.4E

College Board - AP Calculus AB - Objectives (2020)



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CHA-1.A

CHA-2.A

CHA-2.B

CHA-2.C

CHA-2.D

CHA-3.A

CHA-3.B

CHA-3.C

CHA-3.D

CHA-3.E

CHA-3.F

CHA-4.A

CHA-4.B

CHA-4.C

CHA-4.D

CHA-4.E

CHA-5.A

CHA-5.B

CHA-5.C

LIM-1.A

LIM-1.B

LIM-1.C

LIM-1.D

LIM-1.E

LIM-2.A

LIM-2.B

LIM-2.C

LIM-2.D

LIM-3.A

LIM-4.A

LIM-5.A

LIM-5.B

LIM-5.C

FUN-1.A

FUN-1.B

FUN-1.C

FUN-2.A

FUN-3.A

FUN-3.B

FUN-3.C

FUN-3.D

FUN-3.E

FUN-3.F

FUN-4.A

FUN-4.B

FUN-4.C

FUN-4.D

FUN-4.E

FUN-5.A

FUN-6.A

FUN-6.B

FUN-6.C

FUN-6.D

FUN-7.A

FUN-7.B

FUN-7.C

FUN-7.D

FUN-7.E

FUN-7.F

FUN-7.G

COURSE OBJECTIVES

This course is aligned to the College Board Advanced Placement Calculus AB skills and objectives.

ASSESSMENT TYPES

The following assessment types will be used during the course:

- Formative Assessments
- Summative Assessments

SUGGESTED METHODS OF INSTRUCTION

Below is a list of suggested strategies for high-quality instruction in Mathematics:

- Instructional components outlined in the *Framework for Teaching by Charlotte Danielson*
- Teacher-Centered Instruction
- Inquiry-Based Learning
- Small Group Instruction
- Cooperative Learning
- Student-Centered/Constructivist Approach
- Project-Based Learning
- Flipped Classroom



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RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
<ul style="list-style-type: none"> • <i>Calculus: Graphical Numerical Algebraic. AP Edition.</i> 6th Edition. 2020, Finney. • Pearson My Labs Math https://mylab.pearson.com/northamerica/mylab/ 	<ul style="list-style-type: none"> • Additional Teacher Resources • Brock, D. and Hockett, S. Barrons AP Calculus 2019 11th Edition • College Board AP Classroom https://apclassroom.collegeboard.org/ • Khanacademy https://www.khanacademy.org/math/ap-calculus-ab • Stewart, James. Single variable calculus 5th Edition 2003. Brooks/Cole. • TI-Calculators 84Central https://education.ti.com/en/84activitycentral/us/calculus • Teacher created materials 	<ul style="list-style-type: none"> • TI84CE Graphing Calculators (with software programs) • District Approved Technology