

MATHEMATICS DEPARTMENT
ADVANCED PLACEMENT & INTERNATIONAL BACCALAUREATE COURSES

Advanced Placement Pre-Calculus

<https://apcentral.collegeboard.org/courses/ap-precalculus>

Grade: 9-12 Course: One Year

Recommended Prerequisites:

Completion of Algebra 2 with a C or better.

Advanced Placement Calculus AB

http://www.collegeboard.com/student/testing/ap/sub_calab.html?calcab

Grade: 9-12 Course: One Year

Recommended Prerequisites:

Completion of CP or AP Pre-Calculus with a C or better.

Advanced Placement Calculus BC

http://www.collegeboard.com/student/testing/ap/sub_calbc.html?calcbc

Grade: 10-12 Course: One Year

Recommended Prerequisites:

Completion of AP Pre-Calculus with a C or better or completion of Calculus AB with a C or better.

Advanced Placement Statistics*

http://www.collegeboard.com/student/testing/ap/sub_stats.html?stats

Grade: 11-12 Course: One Year

Recommended Prerequisites:

Completion of Algebra 2 and Geometry with a C or better.

**Seniors are given priority placement.*

IB SL Mathematics Applications and Interpretations

Grade: 11-12 Course: Two Years

Recommended Prerequisites:

Completion of Geometry with a C or better.

This course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling. To give this understanding a firm base, this course also includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics.

The course makes extensive use of technology to allow students to explore and construct mathematical models. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify conjectures.

IB SL and HL Mathematics Analysis and Approaches

Grade: 11-12 Course: Two Years

Recommended Prerequisites:

SL: Completion of Algebra 2 with a C or better.

HL: Completion of Honors/Pre-calc with a C or better

This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series at both higher level (HL and standard level (SL), and proof by induction at HL.

The course allows the use of technology, as fluency in relevant mathematical software and hand-held technology is important regardless of choice of course. However, there is a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments. There will be a recognition that the development of mathematical thinking is important for a student.

Students who choose this subject at SL or HL should be comfortable in the manipulation of algebraic expressions and enjoy the recognition of patterns and understand the mathematical generalization of these patterns. Students who wish to take Mathematics: analysis and approaches at HL will have strong algebraic skills and the ability to understand simple proof. They will be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems.