



Wichita East High School IB Program
Exam Group Five Overview: Mathematics

EHS PIB Algebra 1

Instructor: Katy Dannar

This course covers the topics of Algebra 1 in depth and provides students with a good foundation in order to move on to Algebra 2. In this course, students will learn to communicate algebraically and to apply algebraic skills. Students will develop skills in manipulating signed numbers, graphing, applications of algebra, working with formulas, and solving linear, radical, and quadratic equations.

EHS PIB Algebra 2

Instructor: Sara Schrader

This fast-paced course continues the topics of Algebra 1 and moves into additional topics including relations and functions, matrices and determinants, irrational and complex numbers, quadratic functions, polynomial equations, graphs of rational functions, conic sections, rational exponents, logarithms, logarithmic equations, and exponential equations. Algebraic concepts covered in this class are tested in all levels of IB testing.

Prerequisite: Algebra 1

EHS PIB Geometry

Instructors: Cody O'Brien, Xan Tolbert

This course is a rigorous, honors level course. Geometry topics include definitions and postulates, angles, lines, angle sums of polygons, proofs, similarity, tangents, arcs, segments, chords, areas and perimeters of polygons, areas and volumes of pyramids, cones, spheres, and cylinders. Geometry is included in all levels of IB tests.

Prerequisite: Algebra 1

IB SL Math Applications

Instructor: Maria Cicenas

Math Applications may be taken during either the junior or senior year and serves as a survey of all mathematics. Students review and expand knowledge on topics from algebra, geometry, trigonometry, probability, and statistics. In addition, students end the year with an introduction into calculus. During the course, students also develop a project where they use mathematical techniques to explore a

real-world interest. Completion of this course not only prepares students to take the IB SL Mathematics Applications exam, but also serves as great preparation for the math sections of both the ACT and SAT.

Prerequisites: EHS PIB Geometry, EHS PIB Algebra 2

IB Precalculus/Trigonometry

Instructor: Stan Reimer

This honors-level course covers the first year of the IB Math Analysis content. The International Baccalaureate Organization notes in their general description of Math Analysis that students who choose this class will “be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems.” Topics include functions, logarithms, trigonometry, systems of equations, sequences, binomial theorem, basic probability, conic sections, and limits. The use of technology will be embedded within these topics when appropriate; consequently, students will need to have access to a graphing calculator throughout the year. Due to the nature of IB testing in mathematics, this course is not open to freshmen.

Prerequisites: EHS PIB Algebra 2 (with an A or B or instructor’s consent) and EHS PIB Geometry

IB SL AP Calculus AB

Instructor: Stan Reimer

The name of this course may be confusing at first, but it is so named to indicate the dual nature of the content covered. The “IB SL” portion of the name points out that students will be prepared to take the IB SL test by completing the remaining topics required for the IB Math Analysis exam. The remaining part of the name, “AP Calculus AB”, designates that this course is equivalent to a first-semester college calculus course. Topics covered can be found on the advanced placement syllabus for calculus. Accordingly, all students will prepare to take the Advanced Placement Calculus AB exam in order to receive college credit in calculus. Students in their junior year may take the IB SL exam, or they may opt to go on to the IB HL math course.

Prerequisite: IB Precalculus/Trigonometry with an A or B or with instructor’s consent

IB HL AP Calculus BC

Instructor: Maria Cicenas

This course assumes extremely sophisticated knowledge of fundamental mathematics and calculus as well as an enthusiasm for advanced mathematics. Topics include discrete and continuous probability distributions, functions, applications of integration, sequences and series, parametric and polar curves, differential equations, vectors, and an in-depth study of analysis and approximation. Students also complete an independent investigation into a mathematical topic of their choice. Successful completion of this course prepares students to test at the IB Mathematics HL level and prepares students for the Advanced Placement Calculus BC exam.

Prerequisite: IB SL AP Calculus AB with an A or B or with instructor’s consent