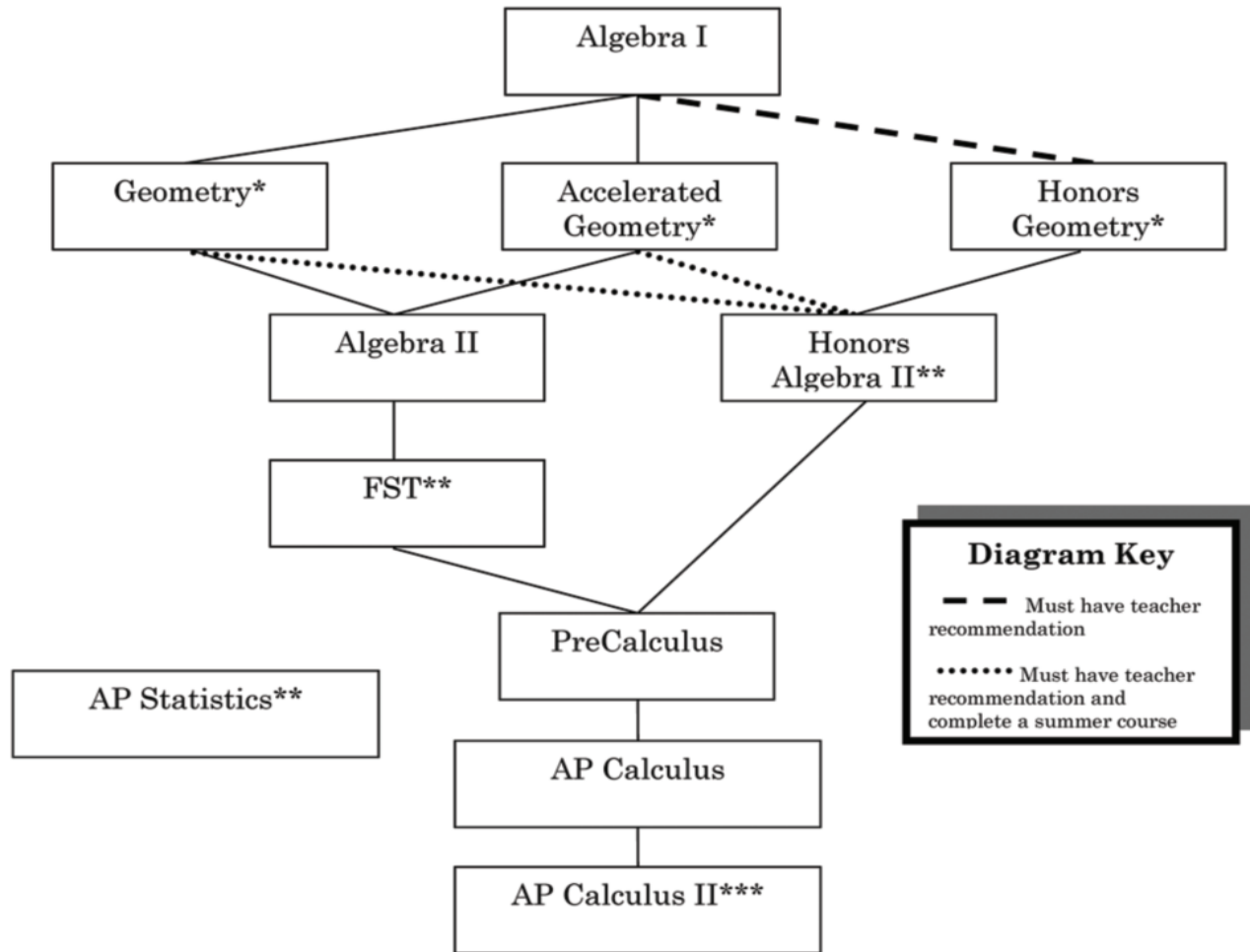


Mathematics Curriculum

The mathematics department of Holy Family Catholic High School serves the needs of all students. This means preparing students for the pursuit of science and math beyond high school as well as developing necessary life skills. Students will be expected to use mathematics as a tool to learn the reasoning skills to look beyond the surface of a situation in order to see the realities and assumptions that lie beneath. Additionally, in a world in which technology is an integral yet often abused part of our lives, students will be taught appropriate and ethical use of such advances.



Successful completion of Algebra II and three credits of mathematics are required for graduation.

Students enter Holy Family Catholic High School with diverse mathematic backgrounds. Consequently, we offer a variety of courses to meet the needs of all our students. Freshmen have a number of options when starting Holy Family Catholic High School.

* Freshmen who would like to take a course other than **Algebra I** must pass a placement test given in the spring and have appropriate course work prior to high school.

** AP Statistics can be taken anytime after successful completion of **Honors Algebra II** or **Functions, Statistics, and Trigonometry**.

*** **AP Calculus II** may be taken during the same academic year as **AP Calculus I**.

All students will need TI-83+ or TI-84+ graphing calculators.

203/204 Algebra I **1 credit**

Algebra I will cover the topics of solving linear and quadratic equations, graphing linear and quadratic equations, solving systems of equations, solving and graphing linear inequalities, exponent rules, polynomials, and factoring.

211/212 Geometry **1 credit**

Prerequisite: Algebra I at Holy Family or qualifying score on summer Math Placement Test I.

Geometry will cover topics of reasoning skills, constructions, line and angle conjectures, linear equations, polygon and circle properties, area of polygons, introduction to trigonometry, Pythagorean Theorem, volume, and similarity in a hands-on discovery approach. Part of this discovery will be accomplished with the use of Geometer's Sketchpad in the computer lab. The course also continues to review and practice topics from **Algebra I**.

228/229 Accelerated Geometry **1 credit**

Prerequisite: Algebra I at Holy Family or a qualifying score on summer Math Placement Test I.

Accelerated Geometry will utilize a hands-on discovery approach to the material with reduced emphasis on proofs. Part of this discovery will be accomplished with the use of Geometer's Sketchpad in the computer lab. The course will cover the topics of geometry in depth with less emphasis on reviewing **Algebra I**.

213/214 Honors Geometry **1 credit**

Prerequisite: "A" or "B" in Algebra I at Holy Family or qualifying score on the Math Placement Test I.

This is a fast-paced course with a blend of discovery and proof-driven approaches to the material. The topics covered in **Accelerated Geometry** will be addressed from this integration of approaches so that not only will students understand many types of proofs, but they will also be able to create many types of proofs in order to draw conclusions. Elementary probability will be introduced.

221/222 Algebra II **1 credit**

Prerequisite: Geometry at Holy Family or qualifying score on the Math Placement Test II.

Algebra II continues the work begun in **Algebra I**. Topics such as linear and quadratic equations, functions, radicals, and polynomials will be explored further. In addition, basic trigonometry, exponential functions, and logarithmic functions will be covered.

223/224 Honors Algebra II **1 credit**

Prerequisite: Honors Geometry at Holy Family or Geometry or Accelerated Geometry at Holy Family with teach recommendation and completion of a summer course, or qualifying score on the Math Placement Test II.

All of the topics of **Algebra II** will be covered, although they will be studied in more detail and at a faster pace. Additional topics include: sequences and series, introductory trigonometry, and elementary statistics in preparation for **PreCalculus**.

226/227 Functions, Statistics, and Trigonometry **1 credit**

Prerequisite: Algebra II

This is a full-year course that covers functions and their properties, trigonometry and its applications, and fundamental probability and statistics. Specific topics include: reasoning skills, right triangle ratios, the six trigonometric functions, identities, vectors, and inverse trigonometric functions.

231/232 PreCalculus **1 credit**

Prerequisite: Honors Algebra II or Functions, Statistics, and Trigonometry

PreCalculus is a challenging year-long course that prepares students to take calculus in college. The primary topics include: functions, trigonometry (with application and identities), and abstract thinking.

233/234 AP Calculus I **1 credit**
Prerequisite: PreCalculus

Advanced Placement Calculus I is a college level course. Topics will include further work with limits, derivatives, and integration with considerable focus on applications. Students passing the **AP Calculus AB** exam in spring may earn college credit and/or advanced standing at their chosen post-secondary institutions.

239 AP Calculus II **.5 credit**
Prerequisite: AP Calculus or current enrollment in AP Calculus with teacher recommendation.

Advanced Placement Calculus II is a semester long college level course. Topics include parametric, polar and vector equations, integral applications, polynomial approximations, and the use of series including the Taylor and Maclauran series. Students passing the **AP Calculus BC** exam in spring may earn college credit and/or advanced standing at their chosen post-secondary institutions.

240/241 AP Statistics **1 credit**
Prerequisite: Honors Algebra II or FST.

Advanced Placement Statistics is a college level course in probability and statistics. Topics include elementary probability, binomial probability, hypothesis testing, regression and correlation, normal distributions, Chi-Squared and F distributions. A passing score on the AP exam in spring may result in advanced standing and/or college credits.