



Secondary Math

Overview

In our secondary program (grades 7-12), we have one full-time Math teacher and three multidisciplinary teachers that are responsible to teach mathematics classes for each grade level. Students are on a split track based on their math abilities and goals. The sequence of math classes is shown below:

Grade	Regular	Advanced Track
7	Math 7	Pre-Algebra
8	Pre-Algebra	Algebra 1
9	Algebra 1	Geometry
10	Geometry	Algebra 2
11	Algebra 2	Pre-Calculus
12	Pre-Calculus	AP Calculus or AP Statistics

Qualifications

- 4-year degree in Mathematics, Secondary Mathematics Education or related field
- Teacher certification and 2 years experience preferred
- Evangelical Christian testimony with active local church experience
- Sense of calling to serve in a developing nation
- Creativity, willingness to grow as a teacher, willingness and ability to teach both middle and high school students, attention to detail, good interpersonal skills and excellent organizational abilities
- Willingness to make a three (or more) year commitment
- Full fluency and expertise in English; conversational Spanish preferred but not required

Sample Schedule

Although the actual assignment will be created based on the strengths of the teacher and availability of the other teachers, a sample schedule is as follows:

Time	Period	Class	Notes
7:15-7:25	0H	Homeroom, devotional	10-15 students; same gender as teacher
7:28-8:18	1	Math 7	Approximately 10-15 students
8:21-9:11	2	Algebra 1 or Algebra 2	Two sections of same class; approximately 10-15 students
9:11-9:26	Break		
9:26-10:16	3	Algebra 1 or Algebra 2	Two sections of same class; approximately 10-15 students
10:19-11:09	4	AP Statistics	Approximately 5-15 students
11:09-11:39	Lunch		
11:39-12:29	5	Planning Period	
12:32-1:22	6	Planning Period	
1:25-2:15	7	Bible class	3 days per week

Math Curriculum

For all core secondary math courses, we use Prentice Hall student and teacher textbooks. In addition to the resources that accompany the teacher's edition of the textbook, we have very well-developed lesson plans, supplemental resources, and access to web resources for every course. Students are graded on mastery of the content shown through daily classwork and homework assignments, regular quizzes, tests, in-class projects, and class participation. Descriptions of specific classes are provided below.

Math 7: Students will build a foundation for higher-level math classes. Major themes include working with integers, fractions and decimals, number theory, ratios, proportions, geometry, measurement and data analysis. Using hands-on and interactive lessons, as well as incorporating organizational skills, are vital for student success in this course. Required materials: scientific calculator, 3-ring binder, loose-leaf graph paper. The textbook is Pearson Hall Mathematics: Course 2.

Pre-Algebra: Students will build a foundation for higher-level math classes. Major themes include communicating with variables and signed numbers and expressions; using formulas and solving equations; rates and proportion, similarity, scaling, and basic trigonometry; probability; dependent relationships and linear functions; working with coordinate graphs, spreadsheets, and graphing and analyzing data; symmetry, transformations and patterns; spatial relationships, nets, surface area and volume. Required materials: scientific calculator, 3-ring binder, loose-leaf graph paper. The textbook is Pearson Hall Prealgebra.

Algebra 1: Algebra I is the principle course in the high school mathematics sequence at NCA. It is an introduction to working with variables in many forms. This course emphasizes data organization and analysis, numerical patterns as a means of understanding functions, as well as solving and graphing equations. Students will learn to express mathematical relationships graphically, symbolically, and verbally. Additional topics include linear functions, linear inequalities, systems of equations, matrix solutions, polynomials, quadratic functions and quadratic equations. Graphing calculator required. The textbook is Pearson Hall Algebra 1.

Geometry: Geometry focuses students on understanding the properties and relationships that govern shape and size in our everyday lives. Beginning with an introduction to logical thinking, topics in geometry include angles, arcs, chords, parallel lines and transversals, triangles, polygons, circles, area, surface area, volume, rotation, transformation, and optimization. Proofs are used throughout the course to encourage students to think logically and sequentially. Geometric patterns and special theorems that are useful throughout a student's math career are also covered. Graphing calculator required. The textbook is Pearson Hall Geometry.

Algebra 2: Algebra II builds on and reinforces the skills and concepts covered in Algebra I. This course challenges students with new material such as arithmetic and geometric growth, sets and fields, complex numbers and fractal geometry, conic sections, permutation and combination, exponential and logarithmic functions, and finally trigonometry. Graphing calculator required. The textbook is Pearson Hall Algebra 2.

Pre-Calculus: This comprehensive Pre-Calculus course is designed to prepare students for further Calculus study whether at NCA or in college. Combining topics from Algebra, Trigonometry, and Geometry, Pre-Calculus unifies and develops a student's understanding of the world through mathematical models and allows students to solve complex problems and make predictions using their models. Graphical and algebraic representations of topics are stressed throughout the course. Graphing calculator required. The textbook is Pearson Hall Precalculus.

AP Calculus AB: The AP Calculus course is designed to prepare students for college calculus courses with a heavy emphasis on the AP Exam which is typically administered in early May. The four main topics explored in this course are limits, derivatives, indefinite integrals, and definite integrals. Students are expected to master the concepts of these topics graphically, numerically, and analytically both with and without the aid of a graphing calculator. Graphing calculator required. The textbook is Prentice Hall Calculus.

AP Statistics*: The AP Statistics course is equivalent to a one-semester introductory, non-calculus based college course. The course explores four main topics: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Classroom activities and discussions, as well as projects, are important parts of the course. Graphing calculator required. The textbook is McGraw Hill Elementary Statistics. *Embedded into the first semester of the course is a non-AP Statistics option available to seniors who do not wish to take the year-long AP Statistics course.