

# CATHOLIC CENTRAL HIGH SCHOOL

## 2011-2012 High School Curriculum

### Faith, Knowledge, and Tradition

#### CCHS Mission

Catholic Central High School is a four-year co-educational high school committed to providing a Catholic based education. It offers a student of any race, religion, or ethnic origin the opportunity to develop and expand their abilities and creative talents in all aspects of their life. Catholic Central is committed to creating a strong academic curriculum and instilling life-long Christian values so a student can become a responsible and contributing member of our intellectual, spiritual, moral, emotional, social, and physical community.

#### CCHS Graduation Requirements-26 credits

##### Mathematics: 3 credits

- 1-Algebra
- 1-Geometry
- 1-Elective

#### MATH Courses

\*A calculator is required for all math courses.

##### ALGEBRA I #212, #213

Freshman Requirement

2 Semesters - 1.0 credit

The goal of this course is to introduce students to the study of mathematics on a more advanced level than arithmetic and to equip them to deal with mathematical concepts that they will encounter in science and other areas of life. The course covers: signed numbers, linear graphing, radical expressions, quadratic formula, and solving systems of equations. Students apply the concepts they learn in problem solving situations.

##### ANALYTICAL GEOMETRY #224, #225

Freshman/Sophomore Requirement

2 Semesters - 1.0 credit

**Pre-Requisite: Successful completion of Algebra I**

Analytical Geometry with proofs teaches a student to think logically, to solve problems, and to analyze real world situations. Through systemic reasoning, the student will learn to apply properties of geometric figures and set up proofs to

complete problems successfully. Course topics deductive reasoning, parallel lines, congruent triangles, quadrilaterals, similarity, right triangles, areas and volumes, analytic geometry, trigonometry and geometric proofs. Algebra skills are also maintained and enhanced. Students will learn to read and write mathematics on a daily basis.

##### PROBABILITY & STATISTICS #233

Sophomore/Junior/Senior Elective

1 Semester- 0.5 credit

**Pre-Requisite: Concurrently taking or having completed Algebra II Trig; TI-83 or TI-84 Graphing Calculator is required.**

This course is designed for students planning on entering fields such as business, education, psychology, biology, etc., which require statistics for their effective study. The course covers topics such as mean, standard deviation, probability distributions, the normal distribution, the Central Limit Theorem, and confidence intervals. Students will be expected to use statistical formulas and tables to make inferences about how a survey applies to an entire population.

##### ALGEBRA II TRIGONOMETRY #235,

#236

Sophomore/Junior/Senior Requirement

2 Semesters - 1.0 credit

**Pre-Requisite: Scientific Calculator is required.**

**Sophomores will need an "A" in Algebra I and CONSENT OF INSTRUCTOR to double up with Geometry.**

Algebra II is an extension of the work begun in Algebra I.

Topics from Algebra that are further developed include: number systems and field properties, linear and quadratic functions, systems of equations, factoring, graphing, working with exponents, logarithmic functions, and radical expressions. Trigonometry will be included in this course.

### **HONORS PRE-CALCULUS #242, #243**

Junior/Senior Elective

2 Semesters - 1.0 credit

**Pre-Requisite: B average in Algebra II/Trigonometry, CONSENT OF INSTRUCTOR; TI-83 or TI-84 Graphing Calculator is required**

Pre-Calculus is designed for students who plan to continue their study of mathematics after high school. Graphical approaches to problem solving will be emphasized along with traditional analytical methods. In addition to the further treatment of linear, quadratic, exponential and logarithmic functions, this course includes topics in trigonometry, analytical trigonometry, discrete mathematics and applications involving these topics.

### **HONORS AP CALCULUS #253, #254**

Senior Elective

2 Semesters - 1.0 credit

***Pre-Requisite: B Average in Pre-Calculus, CONSENT OF INSTRUCTOR; TI-83 or TI-84 Graphing Calculator is required***

Calculus includes both the study of differential calculus and integral calculus with special stress placed on methods of differentiating and integrating, plus practical applications. After completion of the course, the students may participate in the National AP Testing Program in May. This test enables the student to receive possible college credits and/or Advanced Placement. This is a very demanding course that will cover about 1.5 semesters of college calculus. It is expected that students in this course will take the AP exam.

### **ENGINEERING FOR THE FUTURE** **#298, #299**

Junior/Senior Elective

2 Semesters – 1.0 credits

This full year course is designed to introduce students to the world of technology and engineering, as a first step in becoming technologically literate citizens. The course will help high school students begin to answer the question "Why I study math, science, and engineering if I don't plan on a technical career?" Through this course's practical real-world connections, students will have the opportunity to see how science, mathematics, and engineering are part of their everyday world, and why it is important for every citizen to be technologically and scientifically literate. **Limited class size of 16 students due to lab constraints.**