

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

Science: 3 credits

- 1-Integrated Science
- 1-Biology
- 1-Elective

SCIENCE Courses

INTEGRATED SCIENCE #312, #313

Freshman Requirement

2 Semesters - 1 credit

This course will build a strong foundation by introducing students to the broad spectrum of science study while developing reading and math skills. The class maintains a traditional emphasis on physical science while integrating earth science and life science. The students will develop an understanding of the basic concepts needed to be successful in chemistry, earth science and physics. During the year technology, laboratory investigations, hands-on, small group activities and field trips are integrated to show the students how science relates to everyday life.

BIOLOGY #320, #321

Sophomore Requirement

2 Semesters - 1 credit

Pre-requisite: Integrated Science

This course approaches Biology through a sequential study of living organisms. It begins by laying a foundation common to

the study of Biology: the scientific method, classification, cell structure and cell function. Concentration is then placed on the six kingdoms of living organisms. Moving from simple to the more complex organisms, the student's understanding of life on earth will be broadened and focused to the relationships they have with other living things. Strong emphasis is placed on lab skills and teamwork.

BIOTECHNOLOGY # 322

Junior/Senior Elective

1 semester – 0.5 credit

Pre-requisites: **B or better in Biology and Chemistry**

Biotechnology is the science for this century. This course will give students a first glimpse at the tools used in modern biotechnology and will be taught through hands-on instruction. Students will learn the techniques and use the technology to analyze and manipulate DNA. The course focuses on biotechnology lab techniques and the practical application of biotechnology for such things as crime scene investigation and social ethics. After completion of this class, students will understand and appreciate the opportunities available for a career in biotechnology. **Limited class size of 16 students.**

CHEMISTRY #330, #333

Sophomore/Junior/Senior Elective

2 Semesters - 1 credit

Pre-requisite: Must have completed or be enrolled in the following classes: Biology and Algebra II Trigonometry

Chemistry covers matter and its changes. Basic topics discussed are: the scientific method, energy and matter, atomic structure, the Periodic Table and its implications, elements, groups of elements, chemical formulas and bonding, chemical reactions and equations. The mole, stoichiometry, heat in chemical reactions, and solutions are also studied in depth. Skills in problem solving and organization are utilized and further developed. The applications and implications of chemistry in daily life are emphasized. Lab time and complete formal lab write-ups are required.

PHYSICS #331, #334

Junior/Senior Elective

2 Semesters - 1 credit

Pre-requisite: Completion of Algebra II/Trig

Physics offers conceptual and applied approach studies of topics with widespread practical applications as well as a solid foundation for post-secondary study. Topics covered are: matter, energy, forces, motion, heat, sound, light, electrical theory, and electronics. The application of these concepts is stressed and involves in-depth problem solving. Lab activities are required, along with formal lab write-ups.

EARTH SCIENCE #332, #335

Junior/Senior Elective

2 Semesters - 1 credit

During the year the students will explore three major branches of earth science: geology, oceanography and astronomy. Technology, hands-on, small group activities, laboratory investigations and field trips are integrated into the course. After developing an understanding of our physical home within the universe, the students will be able to make wise and informed decisions both now and in the future.

ENVIRONMENTAL SCIENCE #337

Junior/Senior Elective

1 Semesters – 1/2 credit—Offered even years only

This course will provide students with the scientific principles required to understand the interrelationships of the natural world, to identify environmental problems both natural and human-made and to examine solutions for resolving and/or preventing them. Environmental science is interdisciplinary; it focuses on topics from different areas of science.

HONORS ADVANCED CHEMISTRY II #342, #344

Junior/Senior Elective

2 Semester - 1 credit

Pre-requisite: B+ or better in Chemistry, completion of Algebra II Trigonometry AND CONSENT OF INSTRUCTOR

This course is an advanced study of Chemistry topics. A year long course, Chemistry II will cover an in-depth study of inorganic chemistry topics including acids, bases and salts, oxidation/reduction, solubility product constants, equilibrium, reaction rates and mechanisms, thermochemistry, and nuclear chemistry. Other special units will be included as time

allows. There will be an emphasis on individual lab work, formal lab write-ups, and bi-quarterly Chemistry issue papers.

HONORS BIOLOGY-ZOOLOGY #340, #345

Junior/Senior Elective

2 Semesters - 1 credit Offered Odd Years Only

Pre-requisite: B or better in Biology and Chemistry, Interview with instructor is required, CONSENT OF INSTRUCTOR

This course is an advanced study of The Kingdom Animalia with a strong lab/dissection emphasis. Use of both living and preserved specimen required. Advanced biological techniques will be practiced, and various field trips will be required. Monday thru Thursday 0 hour lab is provided for extra lab time. Limited class size of 18

HONORS ANATOMY & PHYSIOLOGY #341, #343

Junior/Senior Elective

2 Semesters - 1 credit Offered Even Years Only

Pre-requisite: B or better in Biology and Chemistry, Interview with instructor is required, CONSENT OF INSTRUCTOR

Anatomy and Physiology is a study of the functions and structures of the human body. Dissection of various organs and cats is an integral part of the course, in addition to other types of lab work. It is open to any student who wants to have a more comprehensive understanding of the human body, but is designed mainly for students interested in careers in Biology, Medicine, and Physical Education. It must be emphasized that while this course will prove useful to those students going into the aforementioned careers, it is not a high school requirement for those areas. This course is for the serious-minded student. Monday thru Thursday 0 hour lab is provided for extra lab time. Limited class size of 18. **Labs and field trips are mandatory.**

BOTANY #353

Sophomore/Junior/Senior

1 Semesters – 0.5 credit—Offered odd years only

Pre-requisites: Biology

This course takes us through the study of plant life and development. Besides covering a wide range of Kingdom Plantae disciplines, a brief excursion into Horticulture and medicinal plants will be included. There is limited class size and labs and field trips are mandatory. Students will be exposed to a wide range of Botany techniques and handling. Allergies may be a concern for some students