

BERKS CATHOLIC HIGH SCHOOL

GOD | FAMILY | ACADEMICS | FUN

The Science Department helps the student:

Develop an appreciation of the unity and beauty of the universe.

- ❖ Develop an inquiring mind, so as to discover the basic principles of science and have a gratifying intellectual experience.
- ❖ Develop facility in analytical and critical thinking in order to recognize logical and quantitative relationships in problem solving.
- ❖ Develop a useful, science vocabulary.
- ❖ Develop skills in using common scientific apparatus.
- ❖ Acquire knowledge of safe laboratory practices and the proper care of scientific equipment.
- ❖ Develop some familiarity with scientific literature.

**** AP Biology and AP Chemistry will be offered in alternating years. AP Chemistry will be offered 2021-2022 and AP Biology will be offered 2022-2023.**

Biology 1

Grade 9

College Prep

CP-Modified

Placement test, standardized test scores, 8th grade science grade and Department recommendation determine level. Biology 1 College Prep provides students with a study of living organisms. Students are led to develop a respect for and an appreciation of life by investigating the underlying similarities in all living things. Concepts presented in class are reinforced with lab activities.

Biology 1

Grade 9

Honors

Placement test, standardized test scores, 8th grade science grade and Department recommendation determine level. Biology 1 Honors is a sequential study of living systems from simplest to the most complex. Students gain an understanding of life and life processes through a study of the unifying principles applicable to all living organisms. There is an emphasis placed on lab work in which students collect, organize and analyze data. *A science project is required.*

Biology 1

Grade 9

Pre-AP

This class is for students who have demonstrated academic excellence in science. Placement test, standardized test scores, 8th grade science grade, and Department recommendation determine level. Pre-AP Biology 1 is a sequential study of living systems from simplest to the most complex. Students gain an understanding of life and life processes through a study of the unifying principles applicable to all living organisms. There is an emphasis placed on lab work in which students collect, organize and analyze data. *A science project is required.*

Physical Science

Grade 10

General

Prerequisite: Department Approval

Physical Science explores some basic scientific principles and shows how these principles are important both in our world and our daily lives. Topics for discussion include classical forces, forms of energy, how energy is made, the fundamental nature of matter, and the kinds of substances important to daily life, as well as technological advances and what impact they have on our environment and society in general.

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Disease and Its Impact on Society: Semester 2

Disease has been part of human existence throughout history. Many diseases have come and gone with little impact, but others have contributed to the way we live our lives. Those would include: Bubonic Plague, Smallpox, and Polio. Analysis of pertinent literature and film treatment of disease outbreaks will be studied for accuracy.

Forensic Science **Grade 11, 12** **College Prep**

Prerequisite: Successful completion of Biology I and Chemistry

This course introduces the basic principles and relationships between the application of chemistry, biology, and physics to forensic science as they relate to the criminal investigative process. This course is designed to give students insight into the many areas of forensic science and to study the newest techniques used by forensic laboratories.

Physics I **Grade 11, 12** **College Prep**

Prerequisites: 80% in Chemistry and 85% in College Prep Algebra I

This class covers the different branches of Physics, using basic mathematical, descriptive, and experimental methods. Therefore, while learning the principles of physics, students will learn to think critically. Students must have a basic working knowledge of algebra and trigonometry. The course includes lab investigation.

Physics I-Honors **Grade 11, 12** **Honors**

Prerequisites: 85% in Chemistry Honors and Honors Algebra II OR 90% in Chemistry and College Prep Algebra 2 Physics Honors covers the different branches of Physics, using mathematical, descriptive and experimental methods. Therefore, while learning the principles of Physics, the student will learn to think critically. Physics Honors prepares the student for further studies in Physics. Students must have a good working knowledge of algebra and trigonometry. Lab investigation is included in this course.

AP Physics 1: Algebra-Based **Grade 12** **Advanced Placement**

Prerequisite: 90% in Algebra 2 and/or Department Head Approval. Students must have completed Trigonometry or Pre-calculus. Prior coursework in physics is not required; Honors Chemistry (or higher) is strongly recommended. Advanced Placement Physics is a hands-on lab class, with laboratory exercises comprising 25% of the class time. The Physics 1 course will utilize guided inquiry and student-centered learning to foster the development of critical thinking skills. The topics covered include: Newtonian mechanics (kinematics and dynamics), energy, rotational dynamics, mechanical waves and sound, and basic electrostatics and electricity. Students must complete 12 mandated labs with a lab notebook or portfolio. There is a summer assignment developing both math and basic physics skills prior to the start of the course.

Biology II **Grade 11, 12** **Honors**

Prerequisites: 83% in Biology 1, successful completion of Chemistry (lab course) and department recommendation

Biology II applies many principles of Biology to the specific areas of entomology, taxonomy, human anatomy and physiology. Students are expected to successfully complete an insect

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collection and vertebrate dissections. Course includes lab investigation. This class may be offered as a Dual Credit class through Alvernia University.

AP Biology Grade 11, 12 Advanced Placement (Not Offered 2021-2022) Prerequisites: 90% in Honors Biology 1 OR 95% in College Prep Biology 1, 93% in Honors Chemistry, and Department Head approval. This class may be offered for Dual Credit. AP Biology is the equivalent of a college introductory course usually taken by Biology majors during their first year. The course provides students with the conceptual framework, factual knowledge and analytical skills necessary to deal critically with the rapidly changing science of biology. Topics include organisms and populations, molecules and cells, and heredity and evolution. Two double laboratory periods per week are required. This class runs every other year. **This class will be offered 2022-2023 but will not be offered 2021-2022.**

All students enrolled in AP Biology are required to take the AP Biology examination. Prior to the student's enrollment in AP Biology, parents and student will be required to sign a letter of understanding. This class may also be taken as a Dual Credit class through Alvernia University.

AP Chemistry Grade 11, 12 Advanced Placement (2021-2022)

Prerequisites: 93% in Honors Chemistry, 90% in Honors Math, and Department Head approval. AP Chemistry furthers the students' understanding of chemistry and prepares them for more advanced chemistry courses. The course helps students keep up to date in this continually developing science through familiarity with new concepts and applications. One double lab per week is required. All students enrolled in AP Chemistry are required to take the AP Chemistry examination. Prior to the student's enrollment in AP Chemistry, parents and student will be required to sign a letter of understanding. This class runs every other year. **This class will be offered 2021-2022 but will not be offered 2022-2023.**

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