

## West Campus Science Electives

- West Campus offers many science electives from which to choose.
- Each course has its own set of prerequisites which must be met prior to enrollment.
- Students must successfully complete courses in Biology and Chemistry prior to enrolling in these electives.
- Most four-year colleges require successful completion of three years of science to be considered for admission.
- Students with an interest in the sciences may choose to enroll in more than one science elective at a time.

## AP Biology

### Prerequisites:

- The AP Biology course is designed to be taken by students after the successful completion of courses in high school biology and high school chemistry.
- It is suggested that students enrolling in AP Biology have earned a "B" or above in Honors Biology or an "A" in Biology (S) and a "B" or above in Honors Chemistry or an "A" in Chemistry (S). It is also highly recommended that students have successfully completed or are concurrently enrolled in Algebra II.
- This course can be taken concurrently with Physics.

### Description:

- AP Biology is designed to be the equivalent of a two-semester college biology course taken by biology majors during their first year.
- After showing themselves to be qualified on the AP Exam, some students, in their freshman year, are permitted to undertake upper-level courses in biology or to register for courses for which biology is a prerequisite. Other students may have fulfilled a basic requirement for a laboratory-science course and will be able to undertake other courses to pursue their majors.
- Students will develop advanced inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains.
- The main topics covered are cellular biology, molecular biology, heredity, evolution, plant and animal physiology as well as ecology.

## AP Chemistry

**Prerequisites:**

- Chemistry and Advanced Algebra; completion of or concurrent enrollment in Physics
- It is suggested that students enrolling in AP Chemistry have earned a "B" or above in Honors Chemistry or an "A" in Chemistry
  - This course can be taken concurrently with Physics Junior year

**Description:**

- The AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year (2 semesters).
- After showing themselves to be qualified on the AP Exam, for some students this course enables them to undertake, in their first year, second-year work in the chemistry sequence at their institution or to register in courses in other fields where general chemistry is a prerequisite.
- For other students, the AP Chemistry course fulfills the laboratory science requirement and frees time for other courses. The emphasis is on chemical calculations and the mathematical formulation of principles, and the kind of laboratory work done by students in college.

*Ken Costello*

## AP Environmental Science

**Prerequisites:**

- The APES course is designed to be taken by students after the successful completion of courses in high school biology, chemistry, and algebra.
- It is suggested that students enrolling in APES have earned a "C" or above in Honors Sciences or a "B" or above in Biology (S) and Chemistry (S) and a "C" or above in Honors Math or a "B" or above in Algebra I or an "A" in Double-Period Algebra.
- This course can be taken concurrently with Physics.

**Description:**

- AP Environmental Science is a rigorous course designed to be the equivalent of an introductory college course in environmental science.
- Students, who prove they are qualified on the AP Environmental Science Exam, could fulfill a basic requirement for a laboratory science or enable themselves, as first-year college students, a more advanced study of topics in environmental science.
- AP Environmental Science will provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solution for resolving or preventing them.
- AP Environmental Science has a strong laboratory and field (outdoor) component to ensure that students learn about the environment through firsthand observation.

# AP Physics

## Prerequisites:

- Grade 12
- Above average achievement in Physics and completion of, or concurrent enrollment in Calculus.

## Description:

- Advanced Placement Physics is a second-year physics program for students who desire a college-level course while still in high school.
- The content emphasizes problem-solving in mechanics. Advanced mathematics, including calculus, will be used.
- Satisfactory completion of Advanced Placement Physics will prepare students to take the Advanced Placement Physics C mechanics examination.
- This course is designed for students interested in such careers as engineering, physics, astronomy, biophysics, and mechanical design.

# Anatomy & Physiology

## Prerequisites:

- Biology and Chemistry
- Recommended: Successful completion of Honors Biology and Honors Chemistry, an "A" or "B" in Biology(S) and Chemistry(S), or an "A" in Biology(G) and Chemistry(G).
- This course can be taken concurrently with Physics Junior year

## Description:

- Anatomy and Physiology is a course designed for students who would like a more in-depth study of the human body. Emphasis is placed on the body's organizational structure and function.
- Laboratory work is an integral part of the course, including an emphasis on the body systems, various organ dissections, and the culmination of the fetal pig dissection.
- Students contemplating a career in a health-related field should consider this course.

# Astronomy

## Prerequisites:

- Two years of science and two years of mathematics
- Recommended: Strong knowledge of physics or concurrent enrollment in Physics

## Description:

- This course provides an outlet for talented science and mathematics students who have an interest in astronomy.
- This course provides a practical application of concepts from physics, earth and space science, and mathematics courses currently taught at Lake Park.
- Evening observation/laboratory periods are encouraged.

# Earth & Space Science

## Prerequisite:

- Two years of science.
- Recommended: An "A" or "B" in Biology G and Chemistry G, or a "C" in Biology (S) and Chemistry (S) or successful completion of Honors Biology and Honors Chemistry

## Description:

- Earth and Space Science is a lab-based science elective which allows students to pursue studies in astronomy, meteorology, geology and environmental science.
- The course is essential for students who would like an introduction to earth science and/or environmental science which can be continued as a major in college or help with general studies requirements in college.
- Topics include, but are not limited to: Planets, stars, galaxies, black holes, astrobiology, wind and pressure relationships, weather forecasting, tornadoes, hurricanes, volcanoes, earthquakes, global warming, pollution, energy sources, and how to protect our home - the Earth.

# Forensic Science

## Prerequisite:

- Successful completion of one year of science
- This course can be taken concurrently with Physics Junior year

## Description:

- Forensic Science will introduce the student to the world of forensic science and crime scene investigation.
- This course is designed to cover topics in biology, chemistry, earth science, and physics.
- The focus of this course will be real-life scenarios implemented in the laboratory.
- Students will be expected to think critically, apply theory, analyze data and draw conclusions to solve simulated crimes.