

Science Department

511 H Biology I (1 Cr.)

Grade 9

This course is designed for the above average student and covers an in-depth sequence of topics including the diversity of life, heredity and genetics, cellular anatomy and physiology, and kingdom classification. Along with other laboratory activities, dissection of various specimens will be performed.

512 CP Biology (1 Cr.)

Grade 9

This course presents a general survey of biological topics including the diversity of life, heredity and genetics, cellular anatomy and physiology, and kingdom classification. Along with other laboratory activities, dissection of various specimens will be performed in class.

521 H Physical Science (1 Cr.)

Grade 10

This course introduces and explores many scientific principles that students will encounter in future science courses. A hands-on approach is utilized to demonstrate and explain topics involving energy, matter, motion, light and sound, as well as other topics in chemistry and physics. Students will be challenged with problem-solving techniques and critical thinking application.

90 in Honors Biology and Honors Math; 93 in CP Biology and Math; Department Approval

522 CP Physical Science (1 Cr.)

Grade 10

This course is an introduction to the study of matter and energy with an emphasis on everyday application of physical laws. Topics include matter, energy, motion, sound and light. Student involvement in classroom demonstrations and discussions are encouraged.

531 H Chemistry I (1 Cr.)

Grade 11

This course is designed to introduce students to the science that deals with the composition, structure, and properties of substances, and of the transformations that these substances undergo. This is a college level chemistry class with problems and labs that reflect that. Students learn the use of the metric system, basic lab equipment and techniques, and laboratory safety methods.

Prerequisites: 90 in Honors Physical Science and Honors Math; 93 in CP Physical Science and CP Math

532 CP Chemistry I (1 Cr.)

Grade 11

This course is designed to introduce students to the science that deals with the composition, structure, and properties of substances, and of the transformations that these substances undergo. Students learn the use of the metric system, basic lab equipment and techniques, and laboratory safety methods.

534 Chemistry

Grade 11

This course is designed to introduce the student to chemical principles. Students learn the theory behind chemical principles, and application of said principles. Basic math skills are required. The course concentrates on the theory as opposed to the math but some is required. Students will also learn the metric system and how to use lab equipment incorporating lab safety.

541 H Physics (1 Cr.) (VIRTUAL)

Grade 12

First Semester - This part of the course delves into the interactions of matter and energy, from the subatomic level of quarks and leptons to the astronomical level of the Big Bang and black holes. The first part of the course focuses on the ordinary interactions seen in our everyday world, including Newton's Laws. This course examines these topics in an in-depth manner applying quantitative methods and analyzing the implications of physical forces.

Second Semester- This part of the course investigates the energy of waves and their fields, electromagnetism, nuclear reactions and subatomic physics. The course takes you into the world of the very small to see how physicists discovered that the laws that govern tiny things explain how larger masses act while making connections to the everyday world.

Prerequisites: 87 in Honors Chemistry; 87 in Honors Math; 93 in CP Chemistry and Math; Department

542 CP Physics (1 Cr.) (VIRTUAL)**Grade 12**

This course covers a broad knowledge base including Newtonian laws of mechanics, gravitation, vectors, basic trigonometry, forces, motion, acceleration, energy, heat, and waves. The student will keep a reflective journal in which research and investigations will be included to enrich the topics covered. The student will also have the opportunity to locate current news articles that reflect physics in everyday life as it applies to the concepts presented.

545 H Anatomy and Physiology (1 Cr.)**Grade 12**

This course is designed for students interested in a medical/health related career and examines the interrelationship between human anatomy and physiology. Emphasis is placed on terminology, the study of cells and some of their processes including protein synthesis, tissues, and the cardiovascular system. Examination of the skeletal and muscular systems is supplemented with a cat dissection in the second semester. Additional supplements include videoconferences of an autopsy, live knee replacement and a kidney transplant.

Prerequisites: 90 in Honors Biology; 93 in CP Biology; Teacher approval

546 CP Biology II (1 Cr.)**Grade 12**

This course is designed for students interested in general biology. It is a continuation of Biology I. Topics include all the systems of the human body and disease control. *Approval of Biology I teacher is required.*

547 H Organic Chemistry (1 Cr.)**Grade 12**

This course, a survey course of general organic chemistry principles, will cover the nomenclature and reactions of all the major kinds of organic molecules, from Alkanes to Polymers. The last part of the course will focus on biochemistry.

Prerequisites: 87 in Honors Chemistry; 93 in Regular Chemistry; approval of Chemistry I teacher

922 CP STEM (.5)**Grade 9 and 10**

This is a semester elective for students to be introduced to basic STEM projects working individually and collaboratively gaining “hand-on” experiences. This course is designed to enhance individual learning styles. This course may be scheduled in place of an APP – Academic Prep Period.

932 CP STEM Virtual & Robotics (1 Cr.) - FULL YEAR COURSE**Grade 11 or 12**

In this course, students will be fully engaged in in-depth projects working individually and collaboratively in a variety of STEM project experiences which focus on “hands-on” project-based learning. Through each experience, students will come to the realization of how virtually important Science, Technology, Engineering, and Math is to our world in the 21st Century. This course is designed to be a student-centered experience to enhance each learning preference and/or style. Students will participate in activities such as building and engineering, coding and programming on an introductory level, designing and testing drones and utilizing 3D printing technology for the creation of parts and materials. Students will lead their own learning through self-discovery and become a representative of their chosen area of STEM throughout the year.

942 CP STEM (.5 Cr.)**Grade 11 or 12**

In this semester course, students will work on both individual and collaborative “hands-on” projects teaching them the importance of STEM in the 21st century. They will participate in activities such as building and engineering, introductory coding and programming, designing and testing drones and utilizing 3D printing technology. This course is a compressed course designed to be a student centered experience to enhance individual learning styles through self-discovery.