

SCIENCE

Science

Required courses by grade level

9th Grade - Biology
 10th Grade - Chemistry
 11th Grade - Elective

10-12

Electives available by grade level

AP Biology
 Anatomy
 Earth & Solar System
 Ecological Studies
 Medical Interventions
 Principles of Biomedical Sciences
 Science & Society

11-12

AP Chemistry
 Physics
 AP Physics 1
 AP Physics 2

Electives Aligned to Career Clusters Pathways

Business, Management and Administration
Finance & Marketing, Sales, and Service

Physics
 Science and Society

Transportation, Distribution & Logistics

AP Chemistry
 AP Physics 1 & 2
 Earth & Solar System
 Ecological Studies
 Science & Society

Education and Training Hospitality and Tourism & Human Services

Ecological Studies
 Science & Society

Architecture and Construction Government and Public Administration & Manufacturing

Physics
 AP Physics 1
 AP Physics 2
 Science & Society

Law, Public Safety, Corrections & Security

Anatomy
 AP Biology
 AP Chemistry
 AP Physics 1 & 2
 Medical Interventions
 Principles of Biomedical Sciences

Agriculture, Food and Natural Resources

AP Biology
 Physics
 AP Physics 1 & 2
 Earth & Solar System
 Ecological Studies
 Medical Interventions
 Principles of Biomedical Sciences
 Science & Society

Health Science

Anatomy
 AP Biology
 AP Physics 1 & 2
 Medical Interventions
 Principles of Biomedical Sciences

Science, Technology, Engineering, & Mathematics

AP Biology
 AP Chemistry
 AP Physics 1 & 2
 Earth & Solar System
 Principles of Biomedical Sciences

Arts, A/V Technology, and Communications & Information Technology

Physics
 Science & Society

SCIENCE

3131 BIOLOGY

3132

1 Credit

●9 ○10 ○11 ○12

Students cultivate their scientific mind-set and understanding of biology through inquiry-based study of topics like biochemistry, cellular processes, heredity and evolution.

3431 CHEMISTRY

3432

1 Credit

○9 ●10 ●11 ●12

Chemistry is the study of matter, its properties, composition, and reactivity. Students will perform laboratory work to learn connections between evidence, reasoning, and models that explain natural phenomena.

3511 PHYSICS

3512

Recommended Prerequisites: "C" or better in Biology, Chemistry, Algebra and Geometry
Recommendation of previous science and math teachers

1 Credit

○9 ○10 ●11 ●12

Students will study the nature and properties of matter and energy. Students will use laboratory work for a significant part of the course and will aid in making connections between evidence, reasoning, and models that explain natural phenomena.

3551 HUMAN ANATOMY AND PHYSIOLOGY

3552

Recommended Prerequisites: "C" in Biology or Honors Biology

1 Credit

○9 ●10 ●11 ●12

In Anatomy & Physiology, students will utilize rigorous academic content, laboratory experiences, and clinical applications to familiarize students with the structures and functions of their own body systems. Students will gain a more detailed explanation of human body systems and their related organs. Students will explore the interactions of these systems and the mechanisms of maintaining a fine balance within each one and within the body as a whole. Students will participate in a significant amount of laboratory work to teach about these connections within this college preparatory course.

3570 ECOLOGICAL STUDIES

Recommended Prerequisites: Completion of One Year of Biology

.5 Credit

○9 ●10 ●11 ●12

This is an introductory course for students to study the environment which includes the earth's biomes and the role and impact of human activities on natural systems. This course will help students identify and analyze natural and human-induced environmental problems after studying energy and cycling of matter, different biomes and ecosystems, and human population dynamics. It will enable students to learn how to assess the risks associated with population dynamics and human activities on the natural systems and evaluate or suggest alternative solutions for resolving and preventing these risks and current issues. There will be some laboratory work to support the study of topics.

3580 EARTH AND THE SOLAR SYSTEM

.5 Credit

○9 ○10 ●11 ●12

Students will build on their current understanding of Earth processes, as well as aspects of astronomy such as Earth's place in the universe and in our solar system. Units include Earth's interior and exterior, Earth's atmosphere and climate, and our solar system. The class will include structured class discussions, labs, and research presentations.

3730 SCIENCE AND SOCIETY

Recommended Prerequisites: Biology

.5 Credit

○9 ●10 ●11 ●12

Students will consider the various ways that science influences society, and how society influences science/technology. The goal of this course is to consider a wide variety of science/technology applications and allow room for students choice.

3751 PRINCIPLES OF THE BIOMEDICAL SCIENCES (PBS) (2021-22)

3752

Recommended Prerequisites Grade 10: B or better in Biology

1 Credit

○9 ●10 ●11 ●12

In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine the factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

3721 MEDICAL INTERVENTIONS (MI) (2022-23)1 Credit**3722** Recommended Prerequisites:

○9 ●10 ●11 ●12

Grade 10: Honors Biology or Principles of Biomedical Science required

Grades 11/12: Successful completion of Anatomy and Physiology or AP Biology highly recommended

In this course, students will learn about the medical interventions used to diagnose, treat, and prevent various medical conditions. Students will learn about each type of intervention from multiple perspectives, including research, individual patient, public health, medical ethics, global, and historical contexts. This course should help students to prepare for a healthcare career, better understand how the human body works, and make more informed medical decisions.

3621 ADVANCED PLACEMENT (AP) BIOLOGY1 Credit**3622** Recommended Prerequisites: "A" in Biology, "B" or better in Chemistry

○9 ●10 ●11 ●12

Honors Biology and Honors Chemistry, or with consent of AP teacher.

AP Biology is an introductory college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore topics like evolution, energetics, information storage and transfer, and system interactions.

3641 ADVANCED PLACEMENT (AP) CHEMISTRY1 Credit**3642** Recommended Prerequisites: Grades 11, 12; "B" or better average in all

○9 ○10 ●11 ●12

Math courses and in Chemistry, or with consent of AP teacher.

This is a second year chemistry course that offers the opportunity to earn college credit upon successful completion of the AP test in the spring. The class is equivalent to a first semester college course in chemistry. The AP Chemistry course provides students with a college-level foundation to support future advanced coursework in chemistry.

Students will cultivate their understanding of chemistry through inquiry-based investigations, as they explore content such as: atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium.

3661 ADVANCED PLACEMENT (AP) PHYSICS 11 Credit**3662** Recommended Prerequisites: "C" or better in Biology, Chemistry, Algebra and Geometry

○9 ○10 ●11 ●12

In this first year physics course, students will have the opportunity to earn college credit upon successful completion of the AP test in the spring. The class is equivalent to a first semester college course in algebra-based physics.

3671 ADVANCED PLACEMENT (AP) PHYSICS 21 Credit**3672** Recommended Prerequisites: "C" or better in Biology, Chemistry, Algebra and Geometry

○9○10 ●11 ●12

This is a full year physics course, students will have the opportunity to earn college credit upon successful completion of the AP test in the spring. The class is equivalent to a second semester college course in algebra-based physics.