

UPPER SCHOOL COURSES

COURSE DESCRIPTIONS SCIENCE DEPARTMENT COURSE DESCRIPTIONS

Biology (1.0 Credits)

The biology program is designed to provide students with a solid background in preparation for freshman level college biology. With the major emphasis on molecular biology, the students gain experience in lab procedures and the use of lab equipment as they participate in units covering cytology, biochemistry, genetics, microbiology, ecology, and zoology.

Text: Biology, Glencoe 2017 Edition ISBN: 978-0076774289

Anatomy & Physiology Honors (1.0 Credits)

This advanced course provides students with an overview of the anatomy and physiology of the human body. Most organ systems are covered. Speakers from the medical field, animal dissections, and discussions of current health issues make up a large part of class time.

Text: Hole's Human Anatomy & Physiology, McGraw Hill: 15th Edition

ISBN: 978-0-076-80996-7

Chemistry (1.0 Credits)

Chemistry is the study of the components of matter and how these components behave and interact with one another. The course provides an overview of the periodic table, chemical bonding, molecular structures, inorganic nomenclature, gas laws, balancing chemical equation, oxidation and reduction, stoichiometry, and acid/base chemistry

Text: Modern Chemistry: 2012 edition ISBN: 978-0547586632

Prerequisite: Algebra I

Advanced Placement (AP) Chemistry (1.0 Credits)

Advanced Placement Chemistry is a college level chemistry course. It will cover all topics covered in a college level chemistry I and II. Major emphasis is placed on nomenclature, reaction mechanisms, and laboratory skills. This class has a mandatory, separate lab class that follows it in the schedule. This is used periodically for a study hall.

Text: Chemistry, 6th edition ISBN: 978-0618221561

Prerequisites: Teacher recommendation and a 85% test average in Algebra II and Chemistry.

Physics Honors (1.0 Credits)

This course includes the traditional physics curriculum with heavy emphasis on equation derivatives and problem solving techniques. The course will cover the following concepts: mechanics, fluids, thermodynamics, waves, sound, light, magnetism, electricity, optics, and nuclear. The study of physics has proven especially helpful to students who are science/engineering oriented.

Text: Holt Physics: 2012 Edition ISBN: 9780547586694

Prerequisite: Teacher recommendation and a 85% test average in Honors Geometry and Pre-Calculus.

Mechanics of Physics (1.0 Credits)

Physics follows a program that provides for the development of science skills through the use of modeling as it covers concepts ranging from Motion, Acceleration, Forces, Work, Power, Energy, Gravity, Waves and Wave Properties, and Sound. Graphical analysis develops the equations and relationships that are the focus of the course in kinematics (motion) and Newtonian principles.

Text: Physics (Pearson: James S. Walker – 2014) ISBN: 9780131371156

Environmental Science (1.0 Credits)

Environmental science is a year-long course designed to demonstrate academic connections between a variation of science methods including biology, chemistry, and physics. It provides students with a logical and practical variety of applications of various scientific concepts. The goal of this class is to develop and increase students' knowledge of environmental challenges while refining scientific critical thinking skills.

Text: Environmental Science 14th Edition, (William P. Cunningham and Mary Ann Cunningham 2017) ISBN: 9781260153125