

SCIENCE 2017-18

Freshman

Earth & Space Science
Physics

Sophomore

Physics
Biology

Junior

Physics
Chemistry

Senior

Physics
Chemistry
Advanced Chemistry I
Advanced Chemistry II
Advanced Physics I
Advanced Physics II
Advanced Biology I,II
Anatomy/Physiology I
Anatomy/Physiology II
Astronomy

- 855-856 Earth and Space Science (1) 2 sem. 1.0 cr.
Earth Science is a basic entry level science course. This course is designed to awaken the students' imaginations in the areas of Earth's resources and history. We begin by studying the makeup of the earth and its atmosphere and climate. We continue with the history of life on our planet before moving to the earth's place in our Solar System.
- 859-860 Physics (1,2,3,4) 2 sem. 1.0 cr.
Prerequisite: Signature of previous science course instructor
This course builds a solid foundation for studying chemistry, biology and science in general. Physics prepares students for advanced physics and college-level physics. The uniqueness of the course is it teaches concepts without a need for the formal structure of applied mathematics. Basic algebra problems will be needed in certain areas to support the physics concept. This is a full-year course with student involvement in labs, classroom demonstrations, and lecture-discussion. Emphasis is placed on units in mechanics, including: laws of motion, work, power, energy, gravity, simple machines; and comparisons of sound and light, including: waves, sound, light, color, lenses and mirrors.
- 863-864 Biology (2) 2 sem. 1.0 cr.
Prerequisite: Signature of previous current science course instructor
Biology is intended to follow Physics. Many aspects of Biology are covered during this two-semester course, including: the basics of cell biology, genetics, evolution, ecology and human body systems. Biology is supported with laboratory exercises, dissection, and is a prerequisite to Advanced Biology and Anatomy and Physiology.
- 867-868 Chemistry (3,4) 2 sem. 1.0 cr. Weighted
Prerequisites: B average or better in Algebra I or equivalent and signature of previous science course instructor
Chemistry studies the substances that make up matter and the changes that take place in these substances. Through an understanding of the process of science, the student is led to see how principles and patterns in the periodic table, the atom, chemical bonding and chemical equations develop.
- 870 Advanced Chemistry I (4) 1 sem. 0.5 cr. Weighted
Prerequisites: Chemistry and signature of Chemistry course instructor
Dual Credit Option: 5 hours of early college credit from Southeast Missouri State University (CH181-Basic Principles of Chemistry) when taken with Advanced Chemistry II; refer to Dual Credit requirements on page 3.
Advanced Chemistry I is a more in-depth study of matter and the properties of matter as a result of its structure. This course will cover chemical bonding, organic chemistry, thermochemistry and thermodynamics, gas laws and solutions. This course will be offered the first semester. It can be taken alone or in conjunction with Advanced Chemistry II, which will be offered second semester. This course is taught at the college level and will be offered for dual credit.

- 871 Advanced Chemistry II (4) 1 sem. 0.5 cr. Weighted
Prerequisites: Advanced Chemistry I and signature of Chemistry course instructor
Dual Credit Option: 5 hours of early college credit from Southeast Missouri State University (CH181-Basic Principles of Chemistry) when taken with Advanced Chemistry I; refer to Dual Credit requirements on page 3.
 Advanced Chemistry II is a continuation of Advanced Chemistry I. This course will cover chemical equilibrium, chemical kinetics, acids and bases, electrochemistry, nuclear chemistry and qualitative analysis. This course will be offered during the second semester only. This course is taught at the college level and will be offered for dual credit.
- 880 Advanced Physics I (4) 1 sem. 0.5 cr. Weighted
Prerequisite: Signature of previous science course instructor
Dual Credit Option: 5 hours of early college credit from Southeast Missouri State University (PH120-Introductory Physics I) when taken with Advanced Physics II; refer to Dual Credit requirements on page 3.
 Advanced Physics I is an algebraic/trigonometric treatment of topics including: kinematics, dynamics, gravitation, momentum, energy, rotation and elasticity. Class time will be divided between lecture, demonstration and lab. This course will be offered the first semester. It can be taken alone or in conjunction with Advanced Physics II, which will be offered second semester. This course is taught at the college level and will be offered for dual credit.
- 881 Advanced Physics II (4) 1 sem. 0.5 cr. Weighted
Prerequisites: Advanced Physics I and signature of previous science course instructor
Dual Credit Option: 5 hours of early college credit from Southeast Missouri State University (PH120-Introductory Physics I) when taken with Advanced Physics I; refer to Dual Credit requirements on page 3.
 Topics will include heat and thermodynamics, electricity and magnetism, wave optics, geometrical optics, sound and wave motion. Class time will be divided between lecture, demonstration and lab. This course will be offered the second semester. It can be taken alone or in conjunction with Advanced Physics I, which will be offered first semester. This course is taught at the college level and will be offered for dual credit.
- 876-877 Advanced Biology (4) 2 sem. 1.0 cr. Weighted
Prerequisites: C or better in Chemistry, good academic standing and signature of previous course instructor
Dual Credit Option: 5 hours of early college credit from Southeast Missouri State University (BI154 & 160-Genetics and Cell Biology); refer to Dual Credit requirements on page 3.
 This class delves into the molecular machinery and processes that power living things. Detailed examinations of DNA, photosynthesis and cellular respiration comprise the major portion of the semester. Students will have the opportunity to work with the school's sophisticated equipment during the in-depth practical laboratory sessions. This class will give the student a tremendous head start if pursuing a science-related career in college.
- 873 Anatomy & Physiology I (4) 1 sem. 0.5 cr. Weighted
Prerequisites: C or better in Biology, good academic standing and signature of previous course instructor
 This course is designed to provide students current information about the structure and function of the human body. The topics covered will include basic medical terminology, integumentary, skeletal, muscular and circulatory systems. Dissection of some preserved specimens is possible. Students pursuing a career in the allied health fields are strongly encouraged to enroll.
- 875 Anatomy & Physiology II (4) 1 sem. 0.5 cr. Weighted
Prerequisites: Anatomy & Physiology I, good academic standing and signature of previous course instructor
 This course is designed to follow Anatomy and Physiology I and will provide students an opportunity to study more about the structure and function of the human body. The topics covered will include more body systems beyond those covered in Anatomy I with major emphasis on the nervous and digestive systems. Dissection of some preserved specimens will occur. Students pursuing a career in the allied health fields are strongly encouraged to enroll.

886

Astronomy

(4)

1 sem.

0.5 cr.

The major goals of the course are to provide students with an up-to-date understanding of the basic tenets of astronomy, the solar system, stars and the universe. The class will primarily be lecture/discussion during normal school hours, but will also require nighttime sessions in the school's observatory. Students will be expected to properly use the equipment to make detailed observations using our telescopes. Students who are unable to meet at least one night a week should not consider this course.