

Science **2019-2020**

Biology-Required (1 credit)

This course has been moved to the freshman level in order to better align with **Michigan's incoming Next Generation STEM requirements**. In this course, students will gain a better understanding of the principles of cell biology, genetics, evolution, and ecology. This course is a prerequisite for Advanced Biology. This is fast-paced, lecture-based, college prep class.

Students also have the option of taking BOTH Botany AND Zoology to fulfill their requirement for Biology. See course descriptions for Botany and Zoology in the Agriscience section listed below.

Chemistry-Required 10th grade (1 credit)

Chemistry is the study of the composition, structure, and properties of matter, the processes that matter undergoes, and the energy changes that accompany these processes. Students in general chemistry will study atoms, chemical bonding, chemical reactions, states of matter, acid, bases and pH. This is a laboratory class and students should be prepared to perform experiments as part of the required coursework. This course is designed to meet the benchmark requirements set by the state of Michigan for Michigan Merit Curriculum.

Physical Science (1 credit)

Physical Science is required in the 11th grade as an introduction to physics class. In the class, students will study motion of objects, energy, waves, sound, light, electricity and magnetism. Physical science also offers a review of chemistry. This course is designed to meet the benchmark requirements set by the state of Michigan for Michigan Merit Curriculum. **Upper level students may choose to take physics instead of physical science with approval of the physics instructor.**

Physics-11th or 12th grade (1 credit)

Physics is the mathematical course study of the physical world. Topics to be studied are scientific logic, measurement in various systems, motion of objects, forces and their interactions, heat and effects, basic electricity, work and energy relationships, collision phenomena, light, physical relationships between atoms and within atoms, and magnetism. Physics is an excellent course of observing mathematical application to real situations. Physics credit can be counted EITHER as a science credit OR a math credit.

Prerequisite as an 11th grader: Approval of teacher.

Advanced Chemistry-Elective 11th-12th grade (1 credit)

Chemistry is the study of the composition, structure, and properties of matter, the processes that matter undergoes, and the energy changes that accompany

these processes. Students in advanced chemistry will continue their study of atoms, chemical bonding, chemical reactions, states of matter, acid, bases and pH. They will also study reaction rates, electrochemistry, nuclear chemistry, organic and biochemistry. This is a laboratory class and students should be prepared to perform experiments as part of the required coursework. This course is designed to prepare students to take chemistry at college.

Advanced Chemistry and Advanced Biology are offered every other year. Advanced Chemistry is offered during school years that end with an odd number (2015, 2017, 2019...) and Advanced Biology is offered during school years that end with an even number (2016, 2018, 2020...)

Prerequisite: Successful completion ("C" or better grade) in Chemistry and Algebra II (can be taken at the same time).

Advanced Biology- Elective 11th-12th grade (1 credit)

Advanced Biology is the study of anatomy and physiology. Students will learn the anatomy, locations, of the components of the human body. Students will also learn how each part of the body functions. There will be an emphasis on problem solving related to each body system. Systems to be covered include: Skin, Skeletal, Muscular, Cardiac, Nervous, Respiratory, Immune and Reproductive systems.

Advanced Chemistry and Advanced Biology are offered every other year. Advanced Chemistry is offered during school years that end with an odd number (2015, 2017, 2019...) and Advanced Biology is offered during school years that end with an even number (2016, 2018, 2020...)

Prerequisite: successful completion ("C" or better grade) in Biology.

Earth Science- Elective 9th -12th grade (1 credit)

Earth Science is an elective science class. Students will study astronomy and meteorology in depth. There is an emphasis on hands-on learning in Earth Science class.