

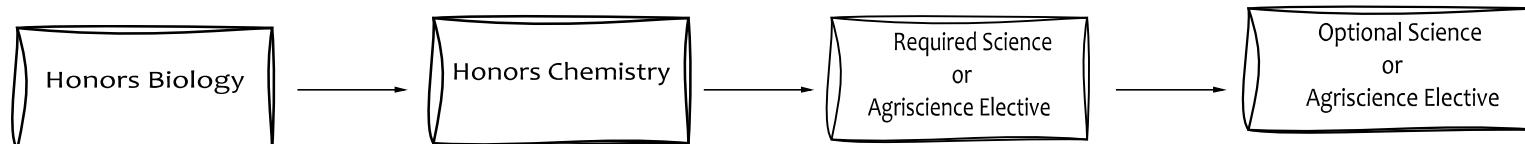
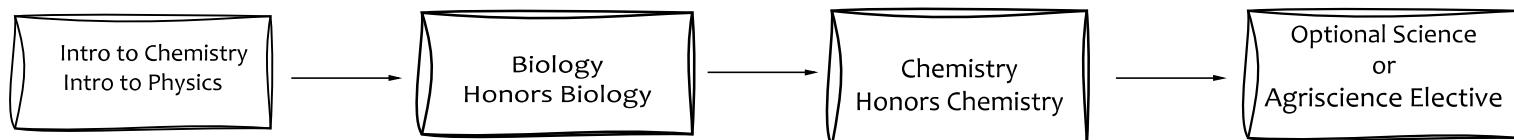
# Science

## Requirements:

- 3 years of Science including Biology & Chemistry

Courses Offered	9	10	11	12
Intro to Chemistry	•	•		
Intro to Physics	•	•		
Honors Biology	•	•		
Biology		•	•	
Chemistry			•	•
Honors Chemistry		•	•	•
Honors Physics			•	•
Anatomy and Physiology			•	•
Environmental Science			•	•
AP Biology			•	•
AP Chemistry			•	•

## Science Enrollment Options



**AP Biology**

Grades 11, 12

3 Trimesters | 1.5 credits

**Prerequisite: Honors Biology, Honors Chemistry**

The AP Biology course is structured and taught as a first-year college biology course. It is an extension of the regular biology course and will cover several topics including cells, macromolecules, enzyme activity, respiration, photosynthesis, genetics, evolution, plant and animal structure and function, and ecology. Students are expected (but not required) to take the Advanced Placement Biology exam in May, which will determine their eligibility for college credit. Those students electing not to take the AP exam will take a final exam in the class. This course is strongly encouraged for students who will need biology for their college degrees. **AP classes will not be dropped after August 1st.**

**AP Chemistry**

Grades 11, 12

3 Trimesters | 1.5 credits

**Prerequisite: Honors Biology, Honors Chemistry, Algebra II or Concurrently**

Advanced Placement Chemistry is a course designed and structured similar to a first-year college chemistry course. It is an extension of the regular chemistry course and will cover several topics including kinetics, thermochemistry, equilibrium, reduction and oxidation, organic and nuclear chemistry. This class heavily emphasizes laboratory skills and laboratory reports. Students in this class are expected (but not required) to take the Advanced Placement Chemistry test in May. This course is strongly encouraged for students who will need chemistry for their college degrees. **AP classes will not be dropped after August 1st.**

**Anatomy and Physiology**

Grades 11, 12

2 Trimesters | 1 credit

**Prerequisite: Biology (or Honors Biology) and Chemistry (or Honors Chemistry) or concurrently.**

Anatomy and Physiology is a course designed for students with a strong curiosity in mammalian biology and themselves. The goals of this course are to introduce students to the structure and organization of the human body and several functions of the systems that make up the human body to teach students laboratory skills including the proper use of the microscope and proper dissection techniques, to develop student's problem solving and research skills, and to enable students to become familiar with common diseases, as well as conditions that are genetically linked to their family

**Biology**

Grades 10, 11

2 Trimesters | 1 credit

**Prerequisite: Intro to Physics, Intro to Chemistry**

The five standards emphasized are: Inquiry, Reflection and Social Implications; Organization and Development of Living Systems; Interdependence of Living Systems and the Environment; Genetics; and Evolution and Biodiversity. This course is designed to meet and achieve the state graduation requirement for Biology.

**Chemistry**

Grades 11, 12

2 Trimesters | 1 credit

**Prerequisite: Intro to Chemistry, Biology**

This Chemistry course is designed to educate students in the areas of fundamental chemistry concepts, while at the same time, demonstrate to students the application of chemistry in both industry and their everyday lives. The course has a strong focus on mineral refinement, petroleum material science, water treatment and testing, nuclear processes, nutritional chemistry, and both fossil fuel and nuclear energy. Students will leave this course with a firm understanding of how chemistry is involved in both scientific and nonscientific careers.

**Environmental Science**

Grades 11, 12

2 Trimesters | 1 credit

**Prerequisite: Biology (or Honors Biology) and Chemistry (or Honors Chemistry) or concurrently**

Environmental Science is a course designed for students to gain experience in scientific procedures and the use of field equipment in carrying out on site investigations which affect the local environment. Students will use their biology, chemistry, and Earth science knowledge to explore and evaluate alternatives to the existing environmental conditions locally, nationally, and globally. Students will study environmental practices in terms of scientific or technological feasibility, cost, the effect on the economy, and the quality of life in the community. In cases in which environmental improvement is desirable, the students will develop and evaluate proposals for achieving desired improvement or assist community groups. The environmental conditions studied may involve natural resource use and alternative, waste disposal, and pollution (air, water, land, visual or sound) issues. The course will take advantage of local resources and organizations, such as Agro-Culture Liquid Fertilizer, the St. Johns WasteWater Treatment Plant, Michigan State University Programs, and our own Maple River wetland complex.

**Honors Biology**

Grades 9, 10

2 Trimesters | 1 credit

**Prerequisite: 9th grade (approval of 8th grade Science Teacher) 10th grade (Intro to Chem, Intro to Physics)**

This is a rigorous course designed for students planning on attending a two- or four-year college. Honors Biology provides the student with a basic understanding of life's processes and its meaning in both plants and animals. In addition, the student has an opportunity to develop curiosity for future experiences in sciences. The five standards emphasized are: Inquiry, Reflection and SoCal Implications; Organization and development of Living Systems; Interdependence of Living Systems and the Environment; Genetics; and Evolution and Biodiversity. This course is designed to meet and achieve the state graduation requirement for Biology.

**Honors Chemistry**

Grades 10, 11, 12

2 Trimesters | 1 credit

**Prerequisite: Honors Biology or Teacher Recommendation**

This is a rigorous course designed for students planning on attending a two- or four-year college. Chemistry will be especially helpful for those students who plan to pursue any type of chemical, medical, dental, engineering, biological or technical career. The five standards emphasized are: Inquiry, Reflection and Social Implications; Forms of Energy; Energy Transfer and Conversion; Properties of Matter; and Changes in Matter. This course satisfies the state graduation requirement for chemistry.

**Honors Physics**

Grades 11, 12

2 Trimesters | 1 credit

**Prerequisite: Honors Biology, Algebra II or concurrently**

Honors Physics is designed to prepare students for Physics in college. The course requires a strong background in mathematics. Topics include Kinematics, Dynamics, Vector Analysis, multidimensional motion and force, Universal gravitation, Momentum, Work, Power, Simple Machines, Energy, Waves, Sound, and Light. Honors Physics is strongly recommended for any student who will be taking Physics in college.

**Introduction to Chemistry**

Grades 9, 10

1 Trimester | .5 credit

The Introduction to Chemistry course gives the student a strong foundation in the subject of chemistry that will be directly applied to and help them succeed in the Chemistry course they will take in a following year. Topics that will be focused upon include the scientific method, the structure and nature of matter, the Periodic Table, chemical bonding, and reactions, along with solution chemistry including acids and bases.

**Introduction to Physics**

Grade 9, 10

1 Trimester | .5 credit

Intro to Physics is an introduction to the study of the physical world. Topics include Scientific Method, Motion, Force, Momentum Energy, Waves, Sound, Light, Electricity and Magnetism. This course is mathematical in nature and requires a basic knowledge of Algebra.