Science

SC100A/B Earth and Space Science (ESS)

Grade: 9
Trimesters: 2
Prerequisites: None
Credits: 1
Repeat for Credit: No

Earth & Space Science A and B are an exploration of the universe around us. Students will investigate natural phenomena and the relationships between them through a series of class discussions, laboratory investigations, classroom activities, internet-based activities, readings, and videos. Topics covered relate to the new Michigan Science Standards and include units on astronomy, geology, natural resources, and weather & climate. ****NHS****

SC200A/B Biology 1

Grade: 9 - 12
Trimesters: 2
Prerequisites: None
Credits: 1
Repeat for Credit: No

Biology teaches the relationships of living things to their environment. Laboratory techniques and procedures are covered as well as taxonomy, characteristics of major phyla, homeostasis, and self-regulation in living organisms. Biology students will study living things, beginning with background information including chemistry, genetics, and cell reproduction, progressing to one-cell organisms, plants, and animals including humans. ****NHS****

SC250A/B Biology II

Grade: 10 - 12
Trimesters: 2
Prerequisites: Biology I, C or higher
Credits: 1
Repeat for Credit: No

A goal of this course is to present the student with a deeper dive into biological science, with an emphasis on science and engineering practices. Through this, students will develop a greater understanding of the core ideas of biology. Dissections of several animal species will be done, comparing the development of body systems as evolution drove greater complexity and diversity in living things. **NHS**

SC500A/B Project-Based Science

Grades: 11 - 12
Trimesters: 2
Prerequisites: "B" or better in Algebra 1 and Biology 1
Credits: 1
Repeat for Credit: No

This advanced course expands on laboratory skills. Computer interface technology and probes will be used in conjunction with traditional laboratory equipment to conduct in-depth investigations on topics in any topic of science of interest to the student. Students will also collaborate in teams on a research project in their chosen field.

SC50A/B/C AP Biology

Grades: 11-12
Trimesters: 3
Prerequisites: "C" or better in Biology 1 A/B
Credits: 1.5
Repeat for Credit: No

AP Biology is a course designed for students that have a strong interest in, or desire to pursue a career in, the sciences. It offers students topics that are covered in freshman Biology courses at the university level. Students accepting the challenge of an Advanced Placement course will be required to actively participate in all lectures and laboratory activities that are conducted during the year.

Laboratory activities suggested by the College Board are conducted to give the students a fair representation of a university-level Biology course. In addition to the College Board laboratories, the instructors add activities when they supplement the unit effectively. **** NHS ****

SC150A/B Applied Physics

Grade: 9 - 12
Trimesters: 2
Prerequisites: None
Credits: 1
Repeat for Credit: No

This course focuses on concepts and applications of physics, including laboratory investigations, and the use of basic algebra skills. The students will gain a greater understanding of the laws of physics that create the world around them. Students will develop an understanding of the concepts underlying the phenomena of motion, force, energy, matter, sound, electricity, magnetism, light and the atom.

SC300A/B Chemistry 1

Grades: 10 - 12
Trimesters: 2
Prerequisites 70% or better in Algebra
Credits: 1
Repeat for Credit: No

This is a general survey course with emphasis on the periodic chart and families of elements. Proper laboratory techniques and safety procedures are covered. Topics covered include matter and energy, composition of matter, the modern atomic theory, formula writing, and basic types of chemistry equations. ****NHS****

SC302A/B Chemistry 2

Grades: 11 - 12
Trimesters: 2
Prerequisites: Chemistry 1A/B
Credits: 1
Repeat for Credit: No

A continuation of Chemistry 1, Chemistry 2 emphasizes qualitative and quantitative analysis. Areas covered include Stoichiometric problem solutions, understanding gas laws, acid base titrations, oxidation-reduction reactions, and an introduction to organic chemistry. ****NHS****

SC400A/B Physics

Grades: 11 - 12
Trimesters: 2
Prerequisites: 1 trimester of Algebra 2
Credits: 1
Repeat for Credit: No

Topics covered include matter and energy, forces, heat, light, sound, and electricity. Students gain an understanding of matter and energy and how they are measured. Students develop a proficiency in mathematical solutions to multiple concept problems and gain a greater in-depth awareness of their physical world. ****NHS****

SC210 Astronomy

Grades: 9 - 12
Trimesters: 1
Prerequisites: Passed Earth Science with a C or higher
Credits: .5
Repeat for Credit: No

Astronomy is a foundations course that introduces students to the night sky. Topics include celestial coordinates and constellations, telescopes and other tools, as well as light and other EM radiation. Our solar system is explored, as are theories on star formation and cosmology. Opportunities for evening telescope use will be provided. ****NHS****

SC350A Oceanography

Grades 9 – 12
Trimesters: 1
Prerequisites: Passed Earth Science with a C or higher
Credits: .5
Repeat for Credit: No

The history of ocean exploration, geology of the seafloor, chemical and physical properties of ocean water, ocean motions (waves, currents, and tides) and life in the sea are investigated in this course through experimentation, classroom activities, internet-based activities, videos, and class discussions. The impact of the ocean on global weather and climate is also examined. ****NHS****

SC600 Forensic Science

Grades 10 - 12
Trimesters: 1
Prerequisites: Biology A/B
Credits: .5
Repeat for Credit: No

Forensic Science is a one trimester course in which students learn to apply concepts learned in biology, chemistry, earth science and physics to the area of crime scene investigation. Laboratory work, inquiry, problem solving and team work are emphasized throughout the course as groups work to solve a mock crime scene. ****NHS****