

# Physical Science

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Physical science is the study of the nature and properties of energy and nonliving matter. "Matter" is the scientific term for anything that has mass and volume. There are two sub-categories in physical science: natural science and earth science. Natural science includes the study of astronomy, chemistry and physics; whereas earth science includes geology and natural history. A basic understanding of physical science is needed for study of the applied sciences (such as computer science and engineering) and life sciences (such as biology and ecology).

## Courses

### ***PH 100 Discovering Physics Laboratory: 1 semester hour***

Students will perform a variety of chemistry and/or physics laboratory experiments. Students will be able to define problems clearly, analyze data properly and draw appropriate conclusions. Based on their laboratory experiments, the students will then be able to construct inquiry-based laboratory exercises using appropriate resources. This course fulfills the requirement of the Natural World domain for transfer students who have not taken a laboratory based natural science course before transferring to Mount Mercy. This course is also for education majors who need additional credit hours for their endorsement areas. This course can be crosslisted with CH 100.

### ***PH 114 Natural Science-Physical: 4 semester hours***

This course is designed for students whose major interests lie outside the field of science. It provides a basis for appreciating the contributions of science to modern society through the development of an understanding of some of the basic laws and theories of physics, chemistry, and astronomy. No previous chemistry or physics is required. Weekly three hour lecture and two hour lab.

### ***PH 115 Introduction To Earth Science: 4 semester hours***

This is an introductory course in earth science that covers geologic origins, history and evolution of the earth along with basic identification of minerals. Topics included are: origins and history of the mineral layers, plate tectonics, geologic time, fossil record, and landform regions in Iowa. Field trips will be included, probably on weekends. Weekly three hour lecture and two hour lab.

### ***PH 151 Principles of Physics I: 4 semester hours***

The first of a 2-semester introductory physics sequence using algebra and trigonometry; covers mechanics, fluids, heat and thermodynamics, vibrations, waves, and sound. Fall semester, weekly three hours of lecture and two hours of laboratory. Prerequisite: C or better in MA 139 or more advanced mathematics course.

### ***PH 152 Principles of Physics II: 4 semester hours***

This course is a continuation of PH 151 that covers electricity and magnetism, optics, relativity, and selected topics in modern physics. Spring semester, weekly three hours of lecture and two hours of laboratory. Prerequisite: C or better in PH 151.

### ***PH 445 Independent Study: 3 semester hours***

The course to be designed by the student in consultation with the instructor on a subject of special interest to the student. This course cannot be used as one of the three upper division electives.