

Natural Science Breadth Area DRAFT 10-31-2017

The Natural Science breadth area can be fulfilled by successful completion of a course approved by the General Education Program as Natural Science or Natural Science for Non-Major.

The objective of the *Natural Sciences breadth area* of the General Education Program is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories in a lab-based class.

Courses objectives to fulfill a *Natural Science breadth area* will include at least:

1. Apply current methods of the natural sciences to formulate a testable a problem.
2. Quantify aspects of nature to develop an understanding of a portion of the natural world
3. Communicate interpretations of a natural science problem

Existing Goals and Objectives

Natural Sciences for Stand-Alone, Non-Science Majors Classes

Goal 1: Students will understand the role of scientific theories in the organization of knowledge about the natural world.

- *Objective 1:* Students will understand and correctly use these general scientific terms: observation, data, hypothesis, and theory.
- *Objective 2:* Students will explain the principal underlying scientific theory or theories pertaining to the discipline and articulate the evidence for them.

Goal 2: Students will understand the current methods of the natural sciences.

- *Objective 1:* Students will articulate the Scientific Method and apply it to simple examples.
- *Objective 2:* Students will understand that the practice of science requires a system of values, including honesty and openness, in order to ensure the independent verification of scientific claims.
- *Objective 3:* Students will understand that scientific investigations are limited to natural phenomena which can be observed and/or measured.
- *Objective 4:* Students will perform measurements or observations appropriate to the discipline.

Goal 3: Students will understand the quantitative nature of studies in the natural sciences.

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- *Objective 1:* Students will apply appropriate mathematical concepts such as scientific notation, metric units, ratio reasoning, or algebraic formulations, in solving problems or answering questions.
- *Objective 2:* Students will demonstrate understanding of various forms of graphical representations.

Goal 4: Students will clearly communicate concepts in the natural sciences.

- *Objective 1:* Students will read and comprehend primary and secondary source materials which utilize appropriate scientific terminology.
- *Objective 2:* Students will demonstrate through writing their own mastery of the scientific terms appropriate to the subjects under study.

Goal 5: Students will gain appreciation for the historical development of the natural sciences.

- *Objective 1:* Students will identify important contributors to the developments in the discipline.
- *Objective 2:* Students will identify and briefly explain a concept in the discipline that was once widely believed but which is now discredited.