

Equivalency Standards for Natural Sciences **(Category 4)**

Over the course of several meetings, the subcommittee of TAOC for the area of Natural Sciences and Mathematics has agreed to the following broad equivalency standards:

Course Titles:

General Chemistry I (majors and non-majors courses)
General Chemistry II (majors and non-majors courses)
General Biology I (majors and non-majors courses)
General Biology II (majors and non-majors courses)
General Physics I (non-calculus)
General Physics II (non-calculus)
Anatomy & Physiology I
Anatomy & Physiology II
Introduction to Astronomy

To be considered equivalent, significant course overlap is necessary and only through the examination of the course within the guidelines listed below can the extent of the overlap between courses be determined. Following the standards accepted by the Humanities and Fine Arts subcommittee, we have drafted the four guidelines listed below. These guidelines must act as the basis for the professional judgment of the committee when determining course equivalencies.

Similar Course Prerequisites

To be equivalent courses should have the similar prerequisites which may include assessment testing, completion of specific high school coursework, and whether or not the course is part of a prescribed sequence.

Similar Course Goals or Learning Outcomes

Courses should provide students with the same broad learning outcomes and performance indicators to provide the proficiency for advancement to the next level even if the content of the courses are different.

The following are outcomes that are appropriate for consideration of similarity.

- Emphasizes the mastery of basic scientific principles and concepts;
- Addresses knowledge of scientific method;
- Includes coverage of the methods of scientific inquiry that characterize the particular discipline;
- Addresses the potential for uncertainty in the scientific inquiry;
- Illustrates the use of mathematics in scientific reasoning; and,
- Lab course includes laboratory and/or field sessions that provide hands on experiences and methodology in the discipline to further enhance learning of course outcomes.

Comparable Course Level

A foundation-level course is most likely not equivalent to an advanced (300 – 400) level course regardless of similar names and course descriptions.

Similar Course Descriptions and Syllabi

Course descriptions are important to review but they do not necessarily capture the degree to which two courses overlap. Examination of the course syllabi, including textbooks, laboratory manuals, and other resources, can help bring additional clarity.

Chain equivalency—If A=B and B=C then A=C

Although chain equivalency is a useful concept for seeing similarity, there was concern that blindly following chain equivalency could lead to courses that were not significantly alike being viewed as such.