

# Pennsylvania Statewide Transfer and Articulation System Uniform Standards for Credit for Prior Learning Exams

## Natural Sciences Exams

### Table of Contents

|  |   |
|--|---|
| Introduction.....  | 2 |
| Uniform Standard Minimum Scores for Awarding Academic Credit ..... | 2 |
| Natural Sciences .....   | 3 |
| Advanced Placement (AP) Exams.....                                 | 3 |
| AP Biology.....  | 3 |
| AP Chemistry .....   | 3 |
| AP Environmental Science.....                                      | 4 |
| AP Physics 1 .....   | 4 |
| AP Physics 2 .....   | 5 |
| AP Physics C: Mechanics .....                                      | 5 |
| AP Physics C: Electricity and Magnetism .....                      | 6 |
| College Level Examination Program (CLEP) Exams.....                | 6 |
| CLEP Biology .....   | 6 |
| CLEP Chemistry.....  | 7 |
| CLEP Natural Science .....   | 7 |

## Introduction

In 2017 the Pennsylvania general assembly enacted legislation adding a section to the Pennsylvania Public School Code, 24 P.S. § 20-2004-C(d), requiring public institutions of higher education to:

- (1) Adopt and make public uniform standards for determining academic credit for prior learning as outlined in paragraph (4) within 18 months of the effective date of this subsection.
- (2) Agree to award academic credit for prior learning, which is determined to meet the standards established under section 2004-C(c)(6) and apply the credit toward graduation, unless prohibited by external accreditation or licensure.

This document establishes the uniform standard minimum scores for which all PA Transfer System participating institutions will award academic credit pursuant to 24 P.S. § 20-2004-C(d).

During the standard setting process, committees of faculty and personnel from Transfer System institutions developed minimum score standards for which any participating member of the PA College Transfer System will award credit, as well as additional guidance and recommendations for courses that institutions may offer as equivalencies for exam scores at or above the minimum. The course equivalency recommendations are considered guidance by the Oversight Committee and may vary between institutions in accordance with their course catalog and program design.

## Uniform Standard Minimum Scores for Awarding Academic Credit

| <b>Exam</b>                             | <b>Minimum Score to Receive Credit</b> |
|---|--|
| <b>AP Exams</b>                         |  |
| AP Biology                              | 3                                      |
| AP Chemistry                            | 3                                      |
| AP Environmental Science                | 3                                      |
| AP Physics 1                            | 3                                      |
| AP Physics 2                            | 3                                      |
| AP Physics C: Mechanics                 | 3                                      |
| AP Physics C: Electricity and Magnetism | 3                                      |
| <b>CLEP Exams</b>                       |  |
| CLEP Biology                            | 50                                     |
| CLEP Chemistry                          | 50                                     |
| CLEP Natural Science                    | 50                                     |

## Natural Sciences

### Advanced Placement (AP) Exams

#### AP Biology

AP Biology is an introductory college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes — energy and communication, genetics, information transfer, ecology, and interactions.

##### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

##### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

##### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 3-credit biology course in the best interest of the student.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

#### AP Chemistry

The AP Chemistry course provides students with a college-level foundation to support future advanced course work in chemistry. Students cultivate their understanding of chemistry through inquiry-based investigations, as they explore topics such as: atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium.

##### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

##### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

##### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 3-credit general education chemistry course (either science or non-science major credit) that is in the best interest of the student.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## AP Environmental Science

The AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in environmental science, through which students engage with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world. The course requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them. Environmental Science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry, and geography.

### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 3-credit general education course that is in the best interest of the student. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## AP Physics 1

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through inquiry-based investigations as they explore these topics: kinematics; dynamics; circular motion and gravitation; energy; momentum; simple harmonic motion; torque and rotational motion; electric charge and electric force; DC circuits; and mechanical waves and sound.

### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 4-credit algebra-based physics-1 course as identified by the institution in the best interest of students.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## AP Physics 2

AP Physics 2 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through inquiry-based investigations as they explore these topics: fluids; thermodynamics; electrical force, field, and potential; electric circuits; magnetism and electromagnetic induction; geometric and physical optics; and quantum, atomic, and nuclear physics.

### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 4-credit algebra-based physics-2 course as identified by the institution in the best interest of students.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## AP Physics C: Mechanics

AP Physics C: Mechanics is equivalent to a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as kinematics; Newton's laws of motion; work, energy and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. Introductory differential and integral calculus is used throughout the course.

### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 4-credit calculus-based physics-2 course as identified by the institution in the best interest of students.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## AP Physics C: Electricity and Magnetism

AP Physics C: Electricity and Magnetism is a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as electrostatics; conductors, capacitors, and dielectrics; electric circuits; magnetic fields; and electromagnetism. Introductory differential and integral calculus is used throughout the course.

### *Minimum Score*

Credit will be awarded for a score of 3 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://aphighered.collegeboard.org/setting-credit-placement-policy/credit-granting-recommendations>.

Current consensus of schools agrees that a score of 3 is equivalent to a letter grade of C which is a minimum transferable grade.

### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 3, award credit for an equivalent and appropriate 4-credit calculus-based physics-1 course as identified by the institution in the best interest of students.

College Board recommends students retain their laboratory materials, as an institution may request submission of these materials prior to awarding lab credit, at the institution's discretion. Additionally, institutions may require a lab assessment to determine adequate lab skills to award lab credit. Institutions may choose to award additional credit for 4 or 5 scores based on course offerings.

## College Level Examination Program (CLEP) Exams

### CLEP Biology

The Biology examination covers material that is usually taught in a one-year college general biology course. The subject matter tested covers the broad field of the biological sciences, organized into three major areas: molecular and cellular biology, organismal biology, and population biology. The examination gives approximately equal weight to these three areas.

### *Minimum Score*

Credit will be awarded for a score of 50 or higher.

### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://clep.collegeboard.org/develop-your-clep-program/create-a-clep-policy/ace-credit-recommendations>.

Current consensus of schools and score of 50 is equivalent to a letter grade of C which is a minimum transferable grade.

#### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 50, award credit for an appropriate 3-credit, general education non-lab biology course as identified by the institution in the best interest of students. Placement for a second biology course to be determined at the institutional level based on course offerings at the school

### CLEP Chemistry

The Chemistry examination covers material that is usually taught in a one-year college course in general chemistry. Understanding of the structure and states of matter, reaction types, equations and stoichiometry, equilibrium, kinetics, thermodynamics, and descriptive and experimental chemistry is required, as is the ability to interpret and apply this material to new and unfamiliar problems. During this examination, an online scientific calculator function and a periodic table are available as part of the testing software.

#### *Minimum Score*

Credit will be awarded for a score of 50 or higher.

#### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://clep.collegeboard.org/develop-your-clep-program/create-a-clep-policy/ace-credit-recommendations>.

Current consensus of schools and score of 50 is equivalent to a letter grade of C which is a minimum transferable grade.

#### *Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 50, award credit for an appropriate 3-credit, general education non-lab chemistry course as identified by the institution in the best interest of students. Placement for a second chemistry course to be determined at the institutional level based on course offerings at the school

### CLEP Natural Science

The Natural Sciences examination covers a wide range of topics frequently taught in introductory courses surveying both biological and physical sciences at the freshman or sophomore level. Such courses generally satisfy distribution or general education requirements in science that usually are not required of, nor taken by, science majors. The Natural Sciences exam is not intended for those specializing in science; it is intended to test the understanding of scientific concepts that an adult with a liberal arts education should have. It doesn't stress the retention of factual details; rather, it emphasizes the knowledge and application of the basic principles and concepts of science, the comprehension of scientific information, and the understanding of issues of science in contemporary society.

#### *Minimum Score*

Credit will be awarded for a score of 50 or higher.

#### *Rationale*

This standard is in line with College Board and American Council on Education's minimum score recommendations <https://clep.collegeboard.org/develop-your-clep-program/create-a-clep-policy/ace-credit-recommendations>.

Current consensus of schools and score of 50 is equivalent to a letter grade of C which is a minimum transferable grade.

*Additional Credit & Course Equivalency Guidance*

For individuals with a minimum score of 50, award credit for an appropriate 3-credit, general education non-lab science course as identified by the institution in the best interest of students. Placement for a second science course to be determined at the institutional level based on course offerings at the school