



COLORADO DEPARTMENT OF HIGHER EDUCATION

Statewide Transfer Articulation Agreement *in*

Physics



Chart Your Career Course

There is more than one path to a fulfilling career, and the road to a bachelor's degree can start at a community college. Colorado's public colleges and universities have created a seamless transfer process that makes it easy and stress-free for you to design an education journey that will meet your needs. Select a 60-credit Associate of Arts (AA) or Associate of Science (AS) degree with Designation (DwD) program that aligns with your interests, with the guarantee that it will put you on the fast track to graduation if you choose to pursue a bachelor's degree.

Introduction

Matter and energy are what hold our universe together but few of us understand how they work in a real sense. For this reason, professionals with a physics background have incredibly unique expertise that can be applied in a multitude of ways. If your dream is to make a big discovery that will change the world or invent new technology that will change the future, a Physics degree will give you a firm foundation. In an associate degree program in Physics, you will explore topics like heat, light, and sound and learn about the laws of property and motion. The knowledge and skills you acquire can lead to jobs in numerous fields, including scientific research, education, engineering, healthcare, information technology, business, and space travel.

An associate program in Physics is a first step toward a career as a programmer, research analyst, high school physics teacher, or software engineer. This degree is transferable to universities offering bachelor's degrees in Physics.

Degree Pathway

The first year of a Physics program will include math and English courses to meet general education requirements. The completion of introductory math and English courses in your first year is proven to greatly increase the likelihood of crossing the graduation stage, boosting your momentum along the academic pathway you select. Other general education courses on your pathway will cover topics in Arts and Humanities, History, Social and Behavioral Sciences, and Natural and Physical Sciences.

Program-specific courses may begin as soon as your first semester. These courses will become more advanced as you move along your degree pathway. Through this sequence of courses, your knowledge of physics concepts will grow and deepen. Coursework will include Physics, Calculus, and Differential Equations. After completing a 60-credit associate degree, your degree pathway can continue with guaranteed transfer to a college that offers bachelor's degrees.

Knowledge & Skills

- Physics concepts
- Experimentation methods
- Observation skills
- Technical abilities
- Data analysis
- Problem solving
- Technical writing

Participating Institutions

Earn an Associate Degree with Designation (DwD)

From one of these Colorado public community/junior colleges

Aims Community College [A.S. Physics]

Arapahoe Community College [A.S. Physics]

Colorado Mountain College [A.S. Physics]

Community College of Aurora [A.S. Physics]

Community College of Denver [A.S. Physics]

Front Range Community College [A.S. Physics]

Morgan Community College [A.S. Physics]

Northeastern Junior College [A.S. Physics]

Otero College [A.S. Physics]

Pikes Peak State College [A.S. Physics]

Red Rocks Community College [A.S. Physics]

Trinidad State College [A.S. Physics]

Earn a Bachelor's Degree

From one of these Colorado public four-year institutions

Colorado Mesa University
[B.S. Physics]

Colorado State University-Ft Collins
[B.S. Physics]

Colorado State University-Pueblo
[B.S. Physics]

Fort Lewis College
[B.S. Physics; Physics option]

Metropolitan State University of Denver
[B.A. Physics; B.S. Physics]

University of Colorado Boulder
[B.A. Physics]

University of Colorado Colorado Springs
[B.S. Physics]

University of Colorado Denver
[B.S. Physics]

University of Northern Colorado
[B.S. Physics; Astronomy, Engineering, Mathematics emphases]

Prescribed Curriculum

PHYSICS

| Required Courses that Fulfill General Education Requirements | | | | 36 CREDIT HOURS |
|--|--------------|---|--|------------------------|
| | Credit Hours | Community College Course No. | Course Title or Category | |
| (Written) Communication | 6 | ENG 121/1021 and ENG 122/1022 OR ENG 122/1022 and a GT Pathways CO3 course | English Composition I (GT-CO1) and English Composition II (GT-CO2) OR English Composition II (GT-CO2) and a GT Pathways CO3 course (GT-CO3) | |
| Mathematics | 5 | MAT 201/2410 | Calculus I (GT-MA1) | |
| Arts & Humanities | 9 | | Three GT Pathways Arts & Humanities course (GT-AH1 , GT-AH2 , GT-AH3 , GT-AH4) | |
| History | 3 | | One GT Pathways History course (GT-HI1) | |
| Social & Behavioral Sciences | 3 | | One GT Pathways Social & Behavioral Sciences course (GT-SS1 , GT-SS2 , GT-SS3) | |
| Natural & Physical Sciences | 5 | PHY 211/2111 | Physics: Calculus-based I w/Lab (GT-SC1) | |
| | 5 | PHY 212/2112 | Physics: Calculus-based II w/Lab (GT-SC1) | |
| Additional Required Courses* | | | | 24 CREDIT HOURS |
| Content Area | Credit Hours | Course No. | Course Title | |
| | 3 | PHY 213/2113 | Physics III: Calculus-Based Modern Physics | |
| | 5 | MAT 202/2420 | Calculus II (GT-MA1) | |
| | 4-5 | MAT 203/2430 OR MAT 204/2431** | Calculus III (GT-MA1) OR Calculus III with Engineering Applications (GT-MA1) | |
| | 3-4 | MAT 265/2560 OR MAT 261/2561** OR MAT 266/2562** | Differential Equations (GT-MA1) OR Differential Equations with Engineering Applications (GT-MA1) OR Differential Equations with Linear Algebra | |
| | 5 | CHE 111/1111 | General College Chemistry I w/lab (GT-SC1) | |
| | 4 - 5 | CSC 160/1060 OR CHE 112/1112*** | Computer Science I OR General College Chemistry II w/lab (GT-SC1) | |
| Electives | | | | 0 CREDIT HOURS |
| Total | | | | 60 CREDIT HOURS |

*Please note: if these credits are *not* required for the *major* at a receiving 4-year institution, they will be applied to the bachelor's degree as *elective credit* toward *graduation*. Please check with the receiving institution to determine in which way these courses will be applied.

If you choose to take one of these courses, it will put you over 60 credits. The courses will transfer but the extra credits may not. That is, the receiving institution may still require the completion of **60 credits for the major.

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***Students planning to transfer to the **University of Colorado Boulder** or to the **University of Northern Colorado** must take CSC 160/1060 (*not* CHE 112/1112) to fulfill this requirement. Students planning to transfer to **Fort Lewis College** or to the **University of Colorado Colorado Springs** must take *both* CSC 160/1060 and CHE 112/1112. Students planning to transfer to a receiving institution not listed here may choose either one of these courses.

Course Planner

PHYSICS DEGREE PLAN

STUDENT NAME

| Institution: | | | | |
|--------------------------------|------------|--------------|--------------|-----------|
| Semester | Course No. | Course Title | Credit Hours | Completed |
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| <i>Total Credits Completed</i> | | | | |

| Institution: | | | | |
|--------------------------------|------------|--------------|--------------|-----------|
| Semester | Course No. | Course Title | Credit Hours | Completed |
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| <i>Total Credits Completed</i> | | | | |

| Institution: | | | | |
|--------------------------------|------------|--------------|--------------|-----------|
| Semester | Course No. | Course Title | Credit Hours | Completed |
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| <i>Total Credits Completed</i> | | | | |

| Institution: | | | | |
|--------------------------------|------------|--------------|--------------|-----------|
| Semester | Course No. | Course Title | Credit Hours | Completed |
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| <i>Total Credits Completed</i> | | | | |

Contractual Language

INTRODUCTION

A statewide transfer articulation agreement identifies the community college courses students need to take in order to graduate from a community college with a 60-credit Associate of Arts (AA) or Associate of Science (AS) degree with designation (DwD). Students are responsible for informing the admissions counselor or transfer advisor at their receiving four-year institution that they are completing a DwD.

It is important for students to understand that completion of an AA or AS degree within two years requires them to complete an average of 15 credits per semester (or 30 credits per year). Also, research shows that students who take classes in their major area within their first 30 credit hours are more likely to persist and graduate.

The guarantees and limitations below describe the minimum requirements to which all participating institutions have agreed. Students who believe an institution is not meeting the guarantees described below can file a complaint with the [CDHE](#).

GUARANTEES

Students who complete a DwD pursuant to the prescribed curriculum in this statewide transfer articulation agreement **and** pass all 60 credits with a C- or higher **and** are admitted to the receiving institution's corresponding degree program (see cover page) are guaranteed the following:

1. Junior standing with no more than 60 remaining credits to meet the graduation requirements for the baccalaureate degree program covered by this articulation agreement.
2. Completion of the receiving institution's lower division general education requirements as defined by the GT Pathways curriculum.
3. The same graduation requirements as students who begin and complete this degree program at the four-year institution.
4. Admission to all Colorado public baccalaureate awarding institutions (*except* Colorado School of Mines) is guaranteed to applicants who have completed any AA or AS degree from a Colorado public two-year institution after high school graduation, provided certain requirements are met. To see these requirements, please refer to the Colorado Commission on Higher Education's Admissions Standards Policy, section titled "Guaranteed Transfer Admissions" [here](#).
5. Per the Commission's [Prior Learning Assessment](#) policy, section 2.07, and pursuant to Colorado Revised Statutes §23-1-108 (7)(b)(II)(A), "a state institution of higher education that admits as a junior a student who holds an associate of arts degree, associate of applied science degree, or associate of science degree that is the subject of a statewide degree transfer agreement shall not require the student to complete any additional courses to fulfill general education requirements", and that the receiving institution of higher education is responsible for the total cost of tuition "for any credit hours that exceed the total credit hours required for a native student or that extend the total time to receive the degree beyond that required for a native student".
6. The Commission's Prior Learning Assessment policy also states "every Colorado public institution of higher education shall accept in transfer from within the institution and from other state institutions of higher education prior learning assessment credit awarded for GT Pathways requirements" (section 3.01), and "Colorado public institutions of higher education shall not prohibit students from meeting general education/GT Pathways requirements with prior learning assessment credit" (section 3.02).

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LIMITATIONS

1. Students must meet all admission and application requirements at the receiving institution including the submission of all required documentation by stated deadlines. Students are advised to consult with the Office of Admissions at the institution to which they intend to transfer.
2. Only courses with grades of C- or higher are guaranteed to transfer.
3. Admission to a receiving institution does not guarantee enrollment in a specific degree program. Some programs at receiving institutions have controlled entry due either to space limitations or academic requirements.
4. The credit and course transfer guarantees described in this agreement apply to the specific degree programs covered by this agreement (see cover page). If the student changes majors, receiving institutions will evaluate application of the courses designated in this agreement to other degree programs on a course-by-course basis.
5. Students are allowed to use credits awarded by exam, such as AP (Advanced Placement) and IB (International Baccalaureate), as long as those exams are listed on the exam tables [here](#), or may use challenge exams to fulfill GT Pathways requirements (not necessarily major requirements) and those credits are guaranteed to transfer and apply to GT Pathways requirements at the receiving institution per the Colorado Commission on Higher Education's Policy I, X: Prior Learning Assessment. See the [entire policy](#) for more information.
6. The receiving institution shall accept all applicable credits earned within ten years of transfer to the receiving institution. Credits earned more than ten years earlier will be evaluated on a course-by-course basis.
7. All the courses a student needs to take in the associate degree program covered by this statewide transfer articulation agreement are listed in the prescribed curriculum. Course substitutions are allowed as long as the student and both the sending and receiving institutions agree to the substitution; such agreement should be documented in writing and the student should keep a copy until the baccalaureate degree is conferred. Note that if students substitute a course, then this is no longer a statewide agreement and some of the guarantees are only for the receiving institution that agreed to the substitution. **Any additional courses taken in the discipline covered by this agreement might not count toward the requirements of the major at the receiving institution.** Students can avoid this problem by taking no more courses in the discipline beyond those identified in the prescribed curriculum. STUDENTS SHOULD CONSULT THE PROGRAM ADVISOR AT THE RECEIVING INSTITUTION FOR GUIDANCE. Any advisement from an academic advisor should be obtained IN WRITING.
8. Students seeking K-12 teacher licensure may not use this agreement because teacher preparation programs have different requirements for educator licensure.

Because of the limitations above, students must consult with the Office of Admissions at the institution to which they are transferring.

Addendum to Agreement

Students who do not complete an AA/AS degree can use the prescribed curriculum in a statewide transfer articulation agreement as a common advising guide for transfer to all public institutions that offer the designated bachelor's degree program.

Please note the following:

1. Students are guaranteed application of general education courses completed with a C- or higher in the prescribed curriculum in this agreement up to the established maximum in each GT Pathways content area.
2. Except in special cases (e.g., the partial completion of a required sequence of courses or variation in the number of credit hours institutions award for course equivalents), students can expect that courses specified within the prescribed curriculum in this agreement, successfully completed with a C- or higher, will fulfill the relevant course requirements in the designated major.
3. Receiving institutions will evaluate all courses other than those specified in this agreement on a course-by-course basis.

Students transferring without a completed AA/AS degree must consult with the Office of Admissions at the institution to which they are transferring to review the issues identified above, and to make sure they meet all admission and application requirements at the receiving institution, including the submission of all required documentation by stated deadlines.

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This agreement will be reviewed by disciplinary faculty no less frequently than every five years. *The agreement will remain in force until such time as it is formally modified or terminated.*

The Department of Higher Education – in consultation with the General Education Council – may make minor technical changes to this agreement on behalf of participating institutions. The most current version of the agreement can be found on the [CDHE website](#). Institutions that wish to join or withdraw from this agreement should consult the Division of Academic Affairs at the Colorado Department of Higher Education. Terms and processes are outlined in the Commission’s policy on Statewide Transfer and GT Pathways, available at the [CDHE website](#).

A paper or hard copy of this document may not be the most current version of the agreement—check the [website](#) of the Colorado Department of Higher Education for the most current version.

Signatures from institutional/system Chief Academic Officers for all participating institutions, as listed on the cover page, have signed this agreement. Signatures of Chief Academic Officers, who possess or have been delegated authority to enter into this agreement on behalf of their institution or institutions (in some cases by the institutional or system governing board), are on file in the Division of Academic Affairs at the Colorado Department of Higher Education.



COLORADO
Department of
Higher Education

**Prepared by the Colorado Department of Higher Education
under the Executive Leadership of Dr. Angie Paccione.**

October 2020

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In partnership with Colorado Institutions of Higher Education

HISTORY OF REVISIONS TO AGREEMENT:

- 2014-12-04 – Approved by CCHE.
- 2016-08 – Cover page revised: added only CCs who are participating and degree titles; some formatting adjustments.
- 2016-12 – Formatting edits made.
- 2017-01 – Formatting changes made to cover page; paragraph 8 added to Limitations section; removed teacher licensure paragraph in Prescribed Curriculum; added updated Addendum to Agreement section.
- 2017-03—removed PCC from agreement
- 2017-03 Revisions made to Introduction, Guarantees, and Limitation sections.
- 2018-12 – Revisions made to Introduction and Limitations sections. Paragraphs 5 & 6 added to Guarantees section to reflect changes made to CCHE Prior Learning Assessment policy.
- 2021-06 – Participating institutions revised: updated names of Otero College and Trinidad State College.
- 2022-03 – Effective Summer 2022, all CCCS course numbers are 4-digits; updated prescribed curriculum to reflect both original 3-digit and new 4-digit course numbers.
- 2022-08 – Participating institutions revised: updated name of Pikes Peak State College.
- 2023-07 – Revision made to Guarantee section. Paragraph 4, note regarding “students transferring to a University of Colorado institution (Boulder, Colorado Springs, Denver) must satisfy the CU System’s MAPS (Minimum Academic Preparation Standards) requirement”, has been removed. Effective Summer 2023.

PHYSICS

- 2024-10 – Revision made to Additional Required Courses: footnote for CSC 160/1060 OR CHE 112/1112 was updated for the University of Colorado Boulder. Effective Fall 2024.