# Physical Science (Composite Teaching), BS

**Department:** Chemistry and Biochemistry Department; Physics Department
**College:** College of Science; College of Science

## Overview

### About This Degree

The physical science (composite teaching) major qualifies students to teach seventh and eighth grade integrated science and high school chemistry and physics. Because they are qualified to teach both subjects, graduates of this major will be more marketable and sought after for teaching positions.

As they train to become chemistry teachers, students learn how to teach the basic chemical properties of elements and the chemical reactions that take place when different elements are combined, and how to properly write scientific equations.

Students also study physics and gain understanding of both the theory of physics and how to experiment using those theories as a guide. Physics teaching covers thermal physics, intermediate modern physics, wave phenomena, electromagnetism, and quantum mechanics.

## Career Options

Students who graduate in physical science (composite teaching) are qualified to teach chemistry and physics in high schools, as well as teach integrated science in seventh and eighth grade.

Career Services provides counseling and information on hundreds of job and internship opportunities and even helps students apply and interview.

## What it takes

### Admissions Requirements

In addition to Utah State University's admissions requirements, the physical science (composite teaching) program has additional requirements:

- **Freshmen:** New freshmen admitted to USU in good standing qualify for admission to this major.
- **Transfer students:** Transfer students from other institutions need a 2.2 total GPA for admission to this major. Students transferring from other USU majors need a total GPA of 2.0 for admission to this major.
- **STEP Requirements:** In order to be accepted into STEP, students must go through an application process, which includes the following:
    - Complete 60 semester credits with a minimum GPA of 2.75
    - Complete certain core courses (see department for more information)
    - Complete a speech and hearing test
    - Pass the Teacher Education Writing Exam
    - Provide an unofficial copy of your transcript
    - Pass a criminal background check (this should be done one semester before submitting the application)

International students have additional admissions requirements.

### Major Requirements

Click here to see course requirements for the **Bachelor of Science**.

## Contact

### Advising

All new USU students participate in a New Student Orientation program, where they receive detailed information about major requirements, registering for classes, and other important advising information.

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# Get Involved

## Professional Organizations, Honor Societies, and Clubs

**American Physical Society:** APS is a nonprofit organization committed to the advancement and diffusion of the knowledge of physics. The unit provides opportunities for its members to interact with colleagues that have similar interests and ensure new developments are being used in their specialized fields.

**American Association of Physicists in Medicine:** AAPM is a scientific and professional organization, founded in 1958, composed of more than 7,000 scientists, whose clinical practice is dedicated to ensuring accuracy, safety, and quality in the use of radiation in medical procedures, such as medical imaging and radiation therapy. Members are generally known as medical physicists and are uniquely positioned across medical specialties due to their responsibility to connect the physician to the patient through the use of radiation-producing technology in both diagnosing and treating people. The responsibility of the medical physicist is to assure that the radiation prescribed in imaging and radiation therapy is delivered accurately and safely.

**American Institute of Physics:** AIP is a nonprofit membership corporation created for the purpose of promoting the advancement and diffusion of the knowledge of physics and its application to human welfare. AIP supports 10 member societies and provides a spectrum of services and programs devoted to advancing the science and profession of physics. A pioneer in digital publishing, AIP is also one of the world's largest publishers of physics journals and produces the publications of more than 25 scientific and engineering societies through its New York-based publishing division.

**American Chemical Society:** With more than 161,000 members, the American Chemical Society is the world's largest scientific society and one of the world's leading sources of authoritative scientific information. It also publishes numerous scientific journals and databases, holds major research conferences, and provides educational, science policy, and career programs in chemistry.

**Chemistry and Biochemistry Club:** Utah State's chemistry and biochemistry club is open to students in all fields of study. It focuses on three main areas: career exploration, including fieldtrips and guest speakers; community service, including teaching and demonstrations for kids of all ages; and student and faculty networking, including national conventions, departmental seminars, club socials, and the other student leadership opportunities.

**Get-Away-Special Team:** The GAS team welcomes students of all majors. During the fall, the team spends most of its time writing project proposals, researching project options, and volunteering in outreach programs. For the outreach program, GAS members visit local schools to give demonstrations related to its projects, as well as encouraging the students to stay in school and persue science and technology fields. During spring semester, students spend time completing GAS projects and sending a group of members to Houston to operate experiments on the “Vomit Comet.” The Vomit Comet is a microgravity aircraft used to test experiments.

**Society of Physics Students:** SPS is a professional association explicitly designed to help students become contributing members of the professional community. It helps students develop needed skills to flourish professionally, such as effective communication, leadership experience, establishing contacts, presenting scholarly work, and participating in outreach service. The USU chapter has won the Outstanding Chapter Award for 2006, and a Sigma Pi Sigma induction ceremony grant. USU’s chapter takes hands-on learning experiences into local schools; it participates in Physics Day at Lagoon, offering an educational activity that gives high school and middle school students the chance to explore the reality of physics in a fun way, and Science Unwrapped, a free, monthly presentation series. SPS students interact with about 10,000 pre-college students each year.

**Sigma Pi Sigma:** SPS is a national physics honor society, which elects members on the basis of outstanding academic achievement. This unique two-in-one society operates within the American Institute of Physics, an

umbrella organization for 10 other professional science societies.

## Labs, Centers, Research

With the second oldest undergraduate research program in the nation, USU offers students a wide range of opportunities to gain hands-on research experience. The Undergraduate Research and Creative Opportunities program allows students to apply for grants and receive funding. USU's Honors Program prepares students for excellent graduate programs by helping them build relationships with professors, participate in research projects, take smaller, more intensive classes, and develop leadership skills.