

Physical Science Composite Teaching -Secondary Education Licensure, BS

Program Description

The Utah Tech University Physical Sciences department offers a variety of courses in Chemistry, Engineering, Environmental Science, Geology, Geography, and Physics that allow students to better understand and appreciate the natural world and our place in it. Many of these courses fulfill the General Education Physical Science requirement for all students. Coursework and academic degrees offered in the Physical Sciences also fulfill prerequisites and requirements for students planning to pursue careers in natural sciences, chemistry, physics, engineering, environmental sciences, earth sciences, and medical and health sciences.

Professional Licensure/Certification (PLC) Requirements

The curriculum for programs at Utah Tech University leading to professional licensure are designed to prepare students for Utah licensure and certification requirements. Admission into programs for professions requiring licensure and certification does not guarantee that students will obtain a license or certificate. Licensure and certification requirements are set by agencies that are not controlled by or affiliated with the University, and licensure and certification requirements can change at any time.

Licensure boards in each state establish requirements for licensure and certification for their respective state. States vary by which professions are required to be licensed and how licensure functions, and such requirements may change at any time. The terms related to licensure and certification, among others, also vary by state as well.

Students and prospective students are strongly encouraged to contact the state licensure entity in the state where they intend to work to review all licensure and certification requirements imposed by the student's state(s) of choice. The University cannot provide verification of a student's ability to meet licensure or certification requirements unrelated to its educational programming. Some states require individuals to complete additional requirements that are unrelated to educational prerequisites. For more information, visit the State Authorization and Professional Licensure (<https://academics.utahtech.edu/state-authorization/>) web page and select the program, or speak to the director of the program.

Utah Tech University shall not be held liable if a student is unable to qualify for licensure or certification in any jurisdiction.

This disclosure is made pursuant to 34 CFR §668.43(a)(5)(v)(C).

Admission Requirements for Secondary Education Program

To be admitted to the Secondary Education Program and enroll in professional courses:

- USBE R277-504-3 A(3) "requires candidates to maintain a cumulative university GPA of 3.0, and receive a C or better in all education related courses and major required content courses"

and students must pass the appropriate PRAXIS II content area subject test(s). In addition, one of the following must be completed:

- Students with BA/BS degrees in progress must have completed at least 95% of major coursework and have approval of major academic content area department advisor
- Students with completed BA/BS or higher degrees must have their transcripts reviewed by content area department advisor

Code	Title	Hours
Secondary Education Program Professional Requirements		
Semester I		
SCI 4700	Secondary Science Teaching Methods	3
SCED 3720	Reading Writing Content Areas (ALPP)	2
SCED 4100	Curriculum and Instruction	3
SCED 4200	Secondary Assessment	2
SCED 4600	Classroom Management (ALPP)	3
SCED 4300	Practicum Seminar	3
Semester II		
SCED 4900	Secondary Student Teaching	10
SCED 4989	Student Teaching Capstone	3

Program Curriculum

121-123 credits

Utah Tech General Education Requirements

All Utah Tech General Education requirements must be fulfilled. A previously earned degree may fulfill those requirements, but courses must be equivalent to Utah Tech's minimum General Education standards in American Institutions, English, and Mathematics.

Code	Title	Hours
General Education Core Requirements (catalog.utahtech.edu/programs/generaleducation/#gerequirementstext)		
	English	3-7
	Mathematics	3-5
	American Institutions	3-6
	Life Sciences	3-10
	Physical Sciences	3-5
	Fine Arts	3
	Literature/Humanities	3
	Social & Behavioral Sciences	3
	Exploration	3-5

Code	Title	Hours
Secondary Education Program Requirements		
Complete one of the following through General Education or elective credit:		
HIST 1700 or POLS 1100	American History (AI) American Government (AI)	3
Complete one of the following through General Education or elective credit:		
FSHD 1500 or PSY 1010 or PSY 1100	Human Development Lifespan (SS, GC) General Psychology (SS, GC) Human Development Through Lifespan (SS, GC)	3
Complete the following program prerequisite courses:		
EDUC 1010	Foundations/Intro to Education	3
EDUC 2010	Intro to Exceptional Learners	3
EDUC 2400	Foundations Multicultural/ESL (SS, GC, ALCI)	3
EDUC 2500	Instructional Technology in K-12 Classrooms	3
EDUC 3110	Educational Psychology	3
Physical Science Core Requirements		
Complete the following Chemistry requirements:		
CHEM 1210 & CHEM 1215	Principles of Chemistry I (PS) and Principles of Chemistry I Lab (LAB)	5
CHEM 1220 & CHEM 1225	Principles of Chemistry II and Principles of Chemistry II Lab	5
Complete one of the following:		
CHEM 2310 & CHEM 2315 or CHEM 3000	Organic Chemistry I and Organic Chemistry I Lab Quantitative Chemical Analysis	3-5
Complete the following Geology requirements:		
GEO 1110 & GEO 1115	Physical Geology (PS) and Physical Geology Lab (LAB)	4
GEO 1220 & GEO 1225	Historical Geology and Historical Geology Lab	4
GEO 3060	Environmental Geology	3
Complete the following Physics requirements:		
PHYS 1040 & PHYS 1045	Elementary Astronomy (PS) and Elementary Astronomy Lab (LAB)	4

PHYS 2210 & PHYS 2215	Physics/Scientists Engineers I (PS) and Physics/Scientists Engineers I Lab (LAB)	5
PHYS 2220 & PHYS 2225	Physics/Scientists EngineersII and Physics/Scientists Engineers II Lab	5
PHYS 3710	Intermediate Modern Physics	3
Complete the following Math/Science support courses:		
BIOL 1610 & BIOL 1615	Principles of Biology I (LS) and Principles of Biology I Lab (LAB)	5
MATH 1210	Calculus I (MA)	4
MATH 1220	Calculus II (MA)	4
SCI 2600	Lab Safety for Teachers	1
SCI 4800R	Independent Research	1
Complete one of the following:		
CHEM 3510 or PHYS 3400	Biochemistry I Classical Mechanics	3

Note:

Students who complete BIOL 3040 General Ecology and BIOL 3045 General Ecology Lab will also meet the requirements for an Earth Science endorsement.

Graduation Requirements

1. Complete a minimum of 121 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at Utah Tech for institutional residency.
4. Cumulative university GPA 3.0 or higher.
5. USBE R277-504-3 A(3) "requires candidates to maintain a cumulative university GPA of 3.0, and receive a C or better in all education related courses and major required content courses"
6. 3.0 GPA in program prerequisite and professional courses.

Graduation Plan

1st Year

Fall Semester	Hours Spring Semester	Hours
CHEM 1210 & CHEM 1215	5 SCI 2600	1
ENGL 1010	3 CHEM 1220 & CHEM 1225	5
MATH 1210	4 ENGL 2010	3
EDUC 1010	3 MATH 1220	4
	General Education (catalog.utahtech.edu/ programs/generaleducation/ #grequirementstext) ¹	3
	15	16

2nd Year

Fall Semester	Hours Spring Semester	Hours
BIOL 1610 & BIOL 1615	5 GEO 1220 & GEO 1225	4
GEO 1110 & GEO 1115	4 PHYS 2220 & PHYS 2225	5
PHYS 1040 & PHYS 1045	4 HIST 1700 or POLS 1100	3
PHYS 2210 & PHYS 2215	5 FSHD 1500, PSY 1010, or PSY 1100	3
	18	15

3rd Year

Fall Semester	Hours Spring Semester	Hours
CHEM 3000	3 PHYS 3710	3
PHYS 3400 or CHEM 3510	3 GEO 3060	3
EDUC 2010	3 EDUC 2400 (GLOCUP)	3
EDUC 2500	3 EDUC 3110	3
General Education (catalog.utahtech.edu/ programs/generaleducation/ #gerequirementstext)	3 SCI 4800R	1
	15	13

4th Year

Fall Semester	Hours Spring Semester	Hours
SCI 4700	3 SCED 4900	10
SCED 3720	2 SCED 4989	3
SCED 4100	3	
SCED 4200	2	
SCED 4600	3	
SCED 4300	3	
	16	13

Total Hours 121**BS Physical Science Program Learning Outcomes**

At the successful conclusion of this program, students will be able to:

1. Assess and critique local and global issues based on acquired knowledge in science to formulate solutions to problems.
2. Integrate knowledge of basic fundamental laws, concepts, and theories to apply them to everyday life.
3. Consider the process of science — how scientific knowledge is generated and validated — to make independent, empirical inquiries about the natural world.
4. Evaluate, interpret, and communicate data in the form of tables, graphs, and charts in oral and or written form.
5. Create individual lesson plans and activities reflecting the curriculum and informed by best practices in pedagogy and technology.