

Physical Science Composite Teaching -Secondary Education Licensure, BS

Program Description

The Dixie State 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 Dixie State University customarily leading to licensure have been designed to meet the educational licensure/certification requirements in Utah as well as to prepare students to apply for licensure exams in the State of Utah. The licensure boards in each state are responsible for establishing the requirements for licensure/certification for their state. Requirement may vary state to state and may change at any time. Students who intend to use their DSU degree to secure licensure in any state other than Utah will need to review the professional licensure disclosures in that state pertaining to their program and consult with the state professional licensing board. For more information, visit the State Authorization and Professional Licensure (<https://academics.dixie.edu/state-authorization/>) web page and select your program, or speak to the director of your program.

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

DSU General Education Requirements

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

Code	Title	Hours
General Education Core Requirements (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)		
	English	3-7
	Mathematics	3-5
	American Institutions	3-6
	Life Sciences	3-10
	Physical Sciences	3-5
	Laboratory Science	0-1
	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 DSU 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
CHEM 1210 & CHEM 1215	Principles of Chemistry I (PS) and Principles of Chemistry I Lab (LAB)	5
ENGL 1010	Introduction to Writing (EN)	3
MATH 1210	Calculus I (MA)	4
EDUC 1010	Foundations/Intro to Education	3
	Hours	15

Spring Semester

SCI 2600	Lab Safety for Teachers	1
CHEM 1220 & CHEM 1225	Principles of Chemistry II and Principles of Chemistry II Lab	5
ENGL 2010	Intern Writing Selected Topics: (EN)	3
MATH 1220	Calculus II (MA)	4
General Education (catalog.dixie.edu/programs/generaleducation/#gerequirementstext) ¹		3
	Hours	16

2nd Year**Fall Semester**

BIOL 1610 & BIOL 1615	Principles of Biology I (LS) and Principles of Biology I Lab (LAB)	5
GEO 1110 & GEO 1115	Physical Geology (PS) and Physical Geology Lab (LAB)	4
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
Hours		18
Spring Semester		
GEO 1220 & GEO 1225	Historical Geology and Historical Geology Lab	4
PHYS 2220 & PHYS 2225	Physics/Scientists EngineersII and Physics/Scientists Engineers II Lab	5
HIST 1700 or POLS 1100	American History (AI) or American Government (AI)	3
FSDH 1500 or PSY 1010 or PSY 1100	Human Development Lifespan (SS, GC) or General Psychology (SS, GC) or Human Development Through Lifespan (SS, GC)	3
Hours		15
3rd Year		
Fall Semester		
CHEM 3000	Quantitative Chemical Analysis	3
PHYS 3400 or CHEM 3510	Classical Mechanics or Biochemistry I	3
EDUC 2010	Intro to Exceptional Learners	3
EDUC 2500	Instructional Technology in K-12 Classrooms	3
General Education (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)		3
Hours		15
Spring Semester		
PHYS 3710	Intermediate Modern Physics	3
GEO 3060	Environmental Geology	3
EDUC 2400	Foundations Multicultural/ESL (SS, GC, ALCI) (GLOCUP)	3
EDUC 3110	Educational Psychology	3
SCI 4800R	Independent Research	1
Hours		13
4th Year		
Fall Semester		
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
Hours		16
Spring Semester		
SCED 4900	Secondary Student Teaching	10
SCED 4989	Student Teaching Capstone	3
Hours		13
Total Hours		121

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.