BACHELOR OF SCIENCE, DOUBLE MAJOR IN EDUCATION AND COMPOSITE SCIENCE

This degree is comprised of coursework from several disciplines; therefore, it will enable you to teach Biology, Chemistry, Geography and Geology (i.e., Earth Science), and Physics (including astronomy). Because individuals who have this certification can teach several disciplines of science, *they are especially sought after by schools*. This degree combines the core science coursework with that required for the Secondary Education certification. It also allows students to focus in an area of science that interests them by choosing designated electives within the focus area. Accordingly, after having completed the common core of science classes, students then focus their remaining coursework in an area of particular interest to them, such as chemistry or geology. Because this degree encompasses several science certifications, it requires 130-133 hours of coursework, depending upon the area of specialization. Below is a summary of the Composite Science degree requirements.

Code	Title	Hours
Bachelor of Science, Double Major in Education and Composite Science		
Core Curriculum (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/)		
Component Area I (Communication)		6
Component Area II (Mathematics) [1]		3
Component Area III (Life and Physical Science) [2]		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences) [3]		3
Component Area IX (Component Area Option)		4
Degree Specific Requirements		
CHEM 1411	General Chemistry I [2]	4
CHEM 1412	General Chemistry II [2]	4
MATH 1314	Pre Calculus Algebra [1]	3
Major: Required (Education)		
CISE 3384	The Teaching Profession	3
CISE 4374	Human Growth and Learning	3
TESL 4303	Teaching Eng As A Second Lang	3
SPED 3301	Learn and Instruc Child W/Disa	3
CISE 4364	Mth Tch Secondary Schools	3
CISE 4377	Assmt Stdnt Lrng In Secondary	3
CISE 4379	Differentiated Pedagogy	3
READ 4378	Multiple Literacies in Secondary Education	3
Major: Required (Composite Science)		
BIOL 1436	Foundations Of Science	4
BIOL 1406	General Biology I	4
BIOL 1407	General Biology II	4
BIOL 2440	Introductory Cell Biology	4
BIOL 3390	Science Teaching Methods	3
GEOG 1401	Weather and Climate	4
GEOL 1403	Physical Geology	4
GEOL 1404	Historical Geology	4
PHYS 1301 & PHYS 1101	General Phy-Mechanics & Heat and General Physics Laboratory I	4
PHYS 1302 & PHYS 1102	Gen Phy-Snd,Lght, Elec, & Mag and General Physics Laboratory II	4
PHYS 1403	Stars & Galaxies [4]	4
or CHEM 2323/2123	Organic Chemistry I: Lecture	
GEOL 3330	Oceanography [5, 6]	3-4

or CHEM 3438	Biochemistry I	
STAT 3379	Statistical Methds in Practice	3
Major: Concentration		**6-8**
Student Teaching		
CISE 4394	Creatng Env For Lrng-Secondary	3
CISE 4396	Std Tch Secondary Classroom	3
CISE 4397	Std Tch Secondary Classroom	3
Minor: Not Required [7, 8]		
Total Hours		**130-133**

1 MATH 1314 satisfies the Core Curriculum requirement for Component Area II (Mathematics) as well as the major. Students may need to take MATH 1316 in order to take PHYS 1301 unless a prerequisite override given by the Physics Department Chair.
2 CHEM 1411 and CHEM 1412 satisfy Core Curriculum requirement for Component Area III (Life and Physical Science) and the major.
3 PSYC 1301 is recommended for Core Component Area VIII (Social and Behavioral Sciences)
4 PHYS 1403 taken for Biology and Earth Science concentration, and CHEM 2323 and CHEM 2123 taken for Chemistry Concentration.
5 GEOL 3330 taken for Biology and Earth Science Concentrations, and CHEM 3438 taken for the Chemistry Concentration.
6 CHEM 3438 is offered Fall or Summer I.
7 A minor is not required for this degree program; however, a student has the option to add a minor, but to do so additional semester credits hours may be needed above the degree program's stated total semester credit hours.
8 All minors can be paired with this degree program.

Notes

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

Students must earn cumulative 2.0 minimum GPA in all Composite Science major coursework.

If the math requirement for PHYS 1301 is not met, or a prerequisite override is not given, MATH 1316 may need to be taken, which will add 3 semester credit hours to the degree plan.

Students must earn a "C" or better in all Education coursework.

Students must earn a 2.75 GPA (overall or in the last 60 semester hours) to be admitted into the State Educator Preparation Program.

Students must earn a 2.75 minimum (or in the last 60 semester hours) GPA in all Education coursework (SHSU and cumulative).

Concentrations

Code	Title	Hours
Geology Concentration		
Choose three of the following:		9-12
GEOL 3326	Environmental Geology	
GEOL 3332	Forensic Geology	
GEOL 4312	Economic Geology	
GEOL 4331	Geology of North America	
GEOL 4337	Plate Tectonics	
GEOL 4402	Structural Geology	
GEOL 4426	Hydrogeology	
GEOG 4432	Geomorphology	
Total Hours		**9-12**

Code	Title	Hours
Biology Concentration		
Choose three of the following:		11-12
BIOL 3364	Plant Taxonomy	
BIOL 3409	General Ecology	
BIOL 3410	Human Biology	
BIOL 3420	Comparative Vertebrate Anatomy	
BIOL 3430	Plant Physiology	
BIOL 3450	Introductory Genetics	
BIOL 3461	Wildlife Biology	
BIOL 3470	General Microbiology	
BIOL 3480	Developmental Biology	
BIOL 3490	Histology	
BIOL 3492	Plant Morphology	
BIOL 4330	Aquatic Biology	
BIOL 4410	General Entomology	
BIOL 4430	Vertebrate Natural History	
BIOL 4460	Parasitology	
BIOL 4470	Animal Behavior	
BIOL 4471	Invertebrate Zoology	
BIOL 4490	Cell Biology	
Total Hours		**11-12**

Code	Title	Hours
Chemistry Concentration		
CHEM 2325 & CHEM 2125	Organic Chemistry II: Lecture and Organic Chemistry II: Lab	4
CHEM 3367	Intro Inorganic Chemistry	3
Choose two of the following:		6-7
CHEM 3339	Biochemistry II	
CHEM 4442	Air Quality [1]	
CHEM 3361	Discoveries In Chm & Textiles	
CHEM 3368	Environmental Chemistry	
Total Hours		**13-14**

[1] CHEM 4442 requires CHEM 2401 as a prerequisite.

First Year

Fall	Hours	Spring	Hours
Component Area I (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai)	3	Component Area I (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai)	3
Component Area IV (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv)	3	Component Area VI (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi)	3
Component Area V (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav)	3	Component Area IX (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	1
Component Area VI (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi)	3	BIOL 1406	4

BIOL 1436	4	CHEM 1411[2]	4
MATH 1314[1]	3	GEOG 1401	4
	19		**19**

Second Year

Fall	Hours	Spring	Hours
Component Area VII (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii)	3	Component Area VII (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii)	3
Component Area IX (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	3	Component Area VIII (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii)[3]	3
BIOL 1407	4	CISE 4374	3
CHEM 1412[2]	4	GEOL 1403	4
CISE 3384	3	PHYS 1301 & PHYS 1101	4
	17		**17**

Third Year

Fall	Hours	Spring	Hours
BIOL 2440	4	BIOL 3390	3
CHEM 2323 & CHEM 2123 (or PHYS 1403)[4]	4	Concentration Courses	3-4
GEOL 1404	4	GEOL 3330 or CHEM 3438[5,6]	3-4
PHYS 1302 & PHYS 1102	4	READ 4378	3
TESL 4303	3	STAT 3379	3
	19		**15-17**

Fourth Year

Fall	Hours	Spring	Hours
CISE 4364	3	CISE 4394	3
CISE 4377	3	CISE 4396	3
CISE 4379	3	CISE 4397	3
Concentration Course	3-4		
SPED 3301	3		
	15-16		**9**

Total Hours: 130-133

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2 CHEM 1411 and CHEM 1412 satisfy Core Curriculum requirement for Component Area III (Life and Physical Science) and the major.

3 PSYC 1301 is recommended for Core Component Area VIII (Social and Behavioral Sciences)

4 PHYS 1403 (http://catalog.shsu.edu/archives/2022-2023/search/?P=PHYS%201403) taken for Biology and Earth Science concentration, and CHEM 2323 (http://catalog.shsu.edu/archives/2022-2023/search/?P=CHEM%202323) and CHEM 2123 (http://catalog.shsu.edu/archives/2022-2023/search/?P=CHEM%202123) taken for Chemistry Concentration.

5 GEOL 3330 (http://catalog.shsu.edu/archives/2022-2023/search/?P=GEOL%203330) taken for Biology and Earth Science Concentrations, and CHEM 3438 (http://catalog.shsu.edu/archives/2022-2023/search/?P=CHEM%203438) taken for the Chemistry Concentration.

6 CHEM 3438 is offered Fall or Summer I.

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GEOL 4402	Structural Geology	
GEOL 4426	Hydrogeology	
GEOG 4432	Geomorphology	
Total Hours		**9-12**

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Choose three of the following:		12
BIOL 3364	Plant Taxonomy	
BIOL 3409	General Ecology	
BIOL 3410	Human Biology	
BIOL 3420	Comparative Vertebrate Anatomy	
BIOL 3430	Plant Physiology	
BIOL 3450	Introductory Genetics	
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BIOL 4460	Parasitology	
BIOL 4470	Animal Behavior	
BIOL 4471	Invertebrate Zoology	
BIOL 4490	Cell Biology	
Total Hours		**12**

Code	Title	Hours
Chemistry Concentration		
CHEM 2325 & CHEM 2125	Organic Chemistry II: Lecture and Organic Chemistry II: Lab	4
CHEM 3367	Intro Inorganic Chemistry	3
Choose two of the following:		6-7

CHEM 3339	Biochemistry II	
CHEM 4442	Air Quality [1]	
CHEM 3361	Discoveries In Chm & Textiles	
CHEM 3368	Environmental Chemistry	
Total Hours		**13-14**

[1] CHEM 4442 requires CHEM 2401 as a prerequisite.

The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS with a Double Major in Education and Composite Science is designed to provide graduates with the following marketable skills:

- Prepared to teach Biology, Physics, Chemistry, Earth Science and Astronomy content for Texas teacher certification.
- Prepared to implement evidence-based methods of teaching and learning.
- Fully qualified to teach in Texas public high schools