

BACHELOR OF SCIENCE, MAJOR IN COMPOSITE SCIENCE

This degree is housed in several departments and 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 core science coursework with the Secondary Education certification. It also allows students to focus in an area of science that interests them. 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 124-129 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, Major in Composite Science		
Component Area I (Communication)		6
Component Area II (Mathematics)		3
Component Area III (Life and Physical Science)		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) ¹		3
Component Area IX (Component Area Option)		4
Degree Specific Requirements		
BIOL 1411	General Botany ²	4
BIOL 1436	Foundations Of Science ²	4
MATH 1316 or MATH 1410	Plane Trigonometry ³ Elementary Functions	3
Major Core		
BIOL 1413	General Zoology	4
BIOL 2440	Introductory Cell Biology	4
CHEM 1411	General Chemistry I	4
CHEM 1412	General Chemistry II	4
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 or CHEM 2323/2123	Stars & Galaxies ⁴ Organic Chemistry I: Lecture	4
GEOL 3330	Oceanography ⁵	3
STAT 3379	Statistical Methods in Practice	3
Teacher Certification		
BIOL 3390	Science Teaching Methods	3
CISE 3384	The Teaching Profession	3
CISE 4364	Mth Tch Secondary Schools	3
CISE 4378	Content Literacy	3
CISE 4379	Differentiated Pedagogy	3
CISE 4380	Respon Of Pro Educator	3
CISE 4394	Creatng Env For Lrng-Secondary	3
CISE 4396	Std Tch Secondary Classroom	3
CISE 4397	Std Tch Secondary Classroom	3
Concentration Courses		9-14
Total Hours		124-129

Note: If the math requirement for CHEM 1411 is not met, one of the designated math courses, such as MATH 1314, may need to be taken, which will add 3 semester credit hours to the degree plan.

- ¹ PHYS 1301 and PHYS 1101 recommended for Core Curriculum requirement Component Area VIII (Social and Behavioral Sciences) and the major..
- ² BIOL 1411 and BIOL 1436 satisfy Core Curriculum requirement for Component Area III (Life and Physical Science). and the major.
- ³ MATH 1316* and MATH 1410 satisfy the Core Curriculum requirement for Component Area II (Mathematics)as well as the major. In addition, MATH 1410 satisfies the Core Curriculum requirement for Component Area IX (Component Area Option).
*Preferred since this course fulfills the prerequisite for PHYS 1301.
- ⁴ PHYS 1403 taken for Biology and Earth Science concentration, and CHEM 2323 and CHEM 2123 taken for Chemistry and Physics concentration.
- ⁵ GEOL 3330 taken for Biology, Earth Science, and Physics Concentration, and CHEM 3438 taken for Chemistry concentration. .

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
Physics Concentration		
Choose three of the following:		9-10
ASTR 3303	Life in the Universe	
ASTR 3383	Cosmic Catastrophes	
PHYS 3391	Modern Physics I	
PHYS 3395	Electronics & Circuit Analysis	
PHYS 3397 & PHYS 3117	Astronomy and Astronomy Laboratory	
PHYS 4333	Light And Optics	
PHYS 4367	Intro To Solid State Physics	

Total Hours 9-10

Code	Title	Hours
Biology Concentration		
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	
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 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 (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareai)	3 Component Area I (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareai)	3
Component Area V (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareav)	3 Component Area VI (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareavi)	3
Component Area VI (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareavi)	3 Component Area IX (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareaix)	1
BIOL 1411 ¹	4 BIOL 1436 ¹	4
MATH 1316 or 1410 ²	3 CHEM 1411	4
	16	15

Second Year

Fall	Hours Spring	Hours
Component Area IV (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareaiiv)	3 Component Area VII (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareavii)	3
Component Area VII (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareavii)	3 Component Area VIII (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareaviii) ³	3
BIOL 1413	4 Component Area IX (catalog.shsu.edu/ undergraduate/ academic-policies- procedures/degree- requirements- academic-guidelines/ core-curriculum/ #componentareaix)	3
CHEM 1412	4 PHYS 1301 & PHYS 1101	4
GEOG 1401	4 GEOL 1403	4
	18	17

Third Year

Fall	Hours Spring	Hours Summer	Hours
BIOL 2440	4 Concentration Courses	6-10 CISE 3384	3
Concentration Course	3-4 BIOL 3390	3 CISE 4380	3
CHEM 2323 & CHEM 2123 (or PHYS 1403) ⁴	4 GEOL 3330 or CHEM 3438 ⁵	3 CISE 4378	3
GEOL 1404	4 STAT 3379	3	
PHYS 1302 & PHYS 1102	4		
	19-20	15-19	9

Fourth Year

Fall	Hours Spring	Hours
CISE 4364	3 CISE 4394	3
CISE 4379	3 CISE 4396	3
	CISE 4397	3
	6	9

Total Hours: 124-129

¹ BIOL 1411 and BIOL 1436 satisfy Core Curriculum requirement for Component Area III (Life and Physical Science) and the major.

² MATH 1316* and MATH 1410 satisfy Core Curriculum requirement for Component Area II (Mathematics) as well as the major. In addition, MATH 1410 satisfies one semester credit hour for Component Area IX (Component Area Option).

*Preferred since this course fulfills the prerequisite for PHYS 1301 (catalog.shsu.edu/archives/2019-2020/search/?P=PHYS%201301).

³ PHYS 1301 recommended for Core Curriculum requirement Component Area VIII.

- ⁴ PHYS 1403 (catalog.shsu.edu/archives/2019-2020/search/?P=PHYS%201403) taken for Biology and Earth Science concentration, and CHEM 2323 (catalog.shsu.edu/archives/2019-2020/search/?P=CHEM%202323) and CHEM 2123 (catalog.shsu.edu/archives/2019-2020/search/?P=CHEM%202123) taken for Chemistry and Physics Concentration.
- ⁵ GEOL 3330 (catalog.shsu.edu/archives/2019-2020/search/?P=GEOL%203330) taken for Biology, Earth Science, and Physics Concentration, and CHEM 3438 (catalog.shsu.edu/archives/2019-2020/search/?P=CHEM%203438) taken for Chemistry Concentration.

Note: If the math requirement for CHEM 1411 is not met, one of the designated math courses, such as MATH 1314 (catalog.shsu.edu/archives/2019-2020/search/?P=MATH%201314), may need to be taken, which will add 3 semester credit hours to the degree plan.

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GEOG 4432	Geomorphology	
Total Hours		9-12

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Choose three of the following:		9-10
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ASTR 3383	Cosmic Catastrophes	
PHYS 3391	Modern Physics I	
PHYS 3395	Electronics & Circuit Analysis	
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PHYS 4333	Light And Optics	
PHYS 4367	Intro To Solid State Physics	
Total Hours		9-10

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Total Hours 12

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Total Hours 13-14

¹ CHEM 4442 requires CHEM 2401 as a prerequisite.