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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bachelor of Science, Double Major in Education and Composite Science</td>
<td>Component Area I (Communication)</td>
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<td></td>
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<td>Component Area V (Creative Arts)</td>
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<td>Component Area VII (Political Science/Government)</td>
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<td>Component Area VIII (Social and Behavioral Sciences)</td>
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<td>Component Area IX (Component Area Option)</td>
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Degree Specific Requirements

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<tr>
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<tr>
<td>CHEM 1411</td>
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<td>CHEM 1412</td>
<td>General Chemistry II</td>
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<tr>
<td>MATH 1314</td>
<td>Pre Calculus Algebra</td>
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Education Major

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<td>CISE 3384</td>
<td>The Teaching Profession</td>
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<td>CISE 4364</td>
<td>Mth Tch Secondary Schools</td>
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<td>CISE 4374</td>
<td>Human Growth and Learning</td>
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<tr>
<td>CISE 4377</td>
<td>Assmt Stdnt Lrng In Secondary</td>
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<tr>
<td>CISE 4378</td>
<td>Content Literacy</td>
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<tr>
<td>CISE 4379</td>
<td>Differentiated Pedagogy</td>
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<td>Learn and Instruct Child W/Disa</td>
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</tr>
<tr>
<td>TESL 4303</td>
<td>Teaching Eng As A Second Lang</td>
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Composite Science Major

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<tr>
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<tbody>
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<td>BIOL 1407</td>
<td>General Biology II</td>
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<tr>
<td>BIOL 2440</td>
<td>Introductory Cell Biology</td>
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<td>BIOL 3390</td>
<td>Science Teaching Methods</td>
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<td>GEOG 1401</td>
<td>Weather and Climate</td>
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<td>GEOL 1403</td>
<td>Physical Geology</td>
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<td>GEOL 1404</td>
<td>Historical Geology</td>
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<td>PHYS 1301 &amp; PHYS 1101</td>
<td>General Phy-Mechanics &amp; Heat and General Physics Laboratory I</td>
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<td>PHYS 1302 &amp; PHYS 1102</td>
<td>Gen Phy-Snd,Lght, Elec, &amp; Mag and General Physics Laboratory II</td>
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<td>PHYS 1403 or CHEM 2323/2123</td>
<td>Stars &amp; Galaxies</td>
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<td>GEOL 3330 or CHEM 3438</td>
<td>Oceanography</td>
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<td>Statistical Methods in Practice</td>
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</table>
Bachelor of Science, Double Major in Education and Composite Science

**Concentration Courses**

<table>
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<tr>
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<td>CISE 4396</td>
<td>Std Tch Secondary Classroom</td>
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<tr>
<td>CISE 4397</td>
<td>Std Tch Secondary Classroom</td>
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</table>

**Total Hours** 130-133

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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.

**Notes**

- Students must earn a 2.5 minimum GPA in all Education coursework (SHSU and cumulative).
- Students must earn a "C" or better in all Education coursework.
- Students must earn a 2.75 GPA (overall or in the last 60 hours) to be admitted into the State Educator Preparation Program.
- 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.

**Concentrations**

### Geology Concentration

<table>
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<td>Choose three of the following:</td>
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<tr>
<td>GEOL 3326</td>
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<tr>
<td>GEOL 3332</td>
<td>Forensic Geology</td>
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<tr>
<td>GEOL 4312</td>
<td>Economic Geology</td>
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<tr>
<td>GEOL 4331</td>
<td>Geology of North America</td>
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<tr>
<td>GEOL 4337</td>
<td>Plate Tectonics</td>
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<td>GEOL 4402</td>
<td>Structural Geology</td>
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<td>GEOL 4426</td>
<td>Hydrogeology</td>
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<td>GEOG 4432</td>
<td>Geomorphology</td>
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**Total Hours** 9-12

### Biology Concentration

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<td>BIOL 3410</td>
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<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
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<td>Plant Physiology</td>
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<td>BIOL 3450</td>
<td>Introductory Genetics</td>
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<td>BIOL 3461</td>
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<td>Developmental Biology</td>
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<td>BIOL 3490</td>
<td>Histology</td>
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<td>BIOL 3492</td>
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<tr>
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<td>Hours</td>
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<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
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<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
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<td>Animal Behavior</td>
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<td>BIOL 4471</td>
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<td>Cell Biology</td>
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Total Hours: 11-12

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<tr>
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<td>CHEM 2325 &amp; CHEM 2125</td>
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<td>CHEM 3367</td>
<td>Intro Inorganic Chemistry</td>
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Choose two of the following: 6-7

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<tr>
<td>CHEM 3339</td>
<td>Biochemistry II</td>
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<td>CHEM 4442</td>
<td>Air Quality¹</td>
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<td>CHEM 3361</td>
<td>Discoveries In Chm &amp; Textiles</td>
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<td>CHEM 3368</td>
<td>Environmental Chemistry</td>
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Total Hours: 13-14

¹ CHEM 4442 requires CHEM 2401 as a prerequisite.

**First Year**

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<th>Component Area I (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaI)</th>
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**Second Year**

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<th>Component Area VII (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaVII)</th>
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² CHEM 1412 requires CHEM 2401 as a prerequisite.
Bachelor of Science, Double Major in Education and Composite Science

Third Year

<table>
<thead>
<tr>
<th>Fall</th>
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<td>BIOL 2440</td>
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<td>CHEM 2323 &amp; CHEM 2123 (or PHYS 1403)</td>
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<td>Concentration Courses</td>
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<td>CISE 4378</td>
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<td>GEOL 3330 or CHEM 3438</td>
<td>3-4</td>
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<td>GEOL 1404</td>
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<td>STAT 3379</td>
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<tr>
<td>PHYS 1302 &amp; PHYS 1102</td>
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Fourth Year

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<td>CISE 4394</td>
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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 is given by the Physics Department Chair.
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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.
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Concentrations

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<tr>
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<tr>
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<tr>
<td>BIOL 3364</td>
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Total Hours: 12

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