

# BACHELOR OF SCIENCE, MAJOR IN ENVIRONMENTAL SCIENCE (WATER RESOURCES)

Code	Title	Hours
<b>Bachelor of Science, Major in Environmental Science (Water Resources)</b>		
<b>Core Curriculum</b>		
	Component Area I (Communication)	6
	Component Area II (Mathematics) <sup>1</sup>	3
	Component Area III (Life and Physical Science) <sup>2</sup>	8
	Component Area IV (Language, Philosophy, and Culture) <sup>3</sup>	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) <sup>4</sup>	3
	Component Area IX (Component Area Option) <sup>1,3</sup>	4
<b>Degree Specific Requirements</b>		
BIOL 1411 or BIOL 1406	General Botany General Biology I	4
BIOL 1413 or BIOL 1407	General Zoology General Biology II	4
CHEM 1411	General Chemistry I <sup>2</sup>	4
CHEM 1412	General Chemistry II <sup>2</sup>	4
MATH 1420	Calculus I <sup>1</sup>	4
<b>Major: Foundation</b>		
BIOL 1401	Environmental Science	4
BIOL/GEOG 3320	Sustainability & Environment	3
BIOL 3409	General Ecology	4
BIOL 4330	Aquatic Biology	3
ENGL 3330	Intro to Technical Writing	3
Select two of the following:		8
GEOG 1401	Weather and Climate	
GEOL 1403	Physical Geology	
GEOL 1405	Geologic & Environmental Hazards	
GEOG 2464	Intro to Geographic Info Sys	4
GEOG 4330	Hydrology and Water Resources	3
GEOG 4331	Conservation of Natural Res	3
GEOG 4432	Geomorphology	4
GEOG 4468 or GEOG 4361	Remote Sensing Geographic Information Systems for Public Health	3-4
GEOL 3326	Environmental Geology	3
GEOL 4304 or CHEM 3368	Geochemistry <sup>5</sup> Environmental Chemistry	3
GEOL 4426	Hydrogeology	4
Select one from the following: <sup>6</sup>		3-4
BIOL 4374	Biostatistics	
MATH 1430	Calculus II	
MATH/STAT 3379	Statistical Mthods in Practice	
PLSC 3440	Soil Science	4
POLS 3395	Environmental Policy	3
<b>Major: Prescribed Electives</b>		
Select two of the following (minimum of 8 SCH):		8

AGET 3383	Soil & Water Conservation Engr
BIOL 3461	Wildlife Biology
CHEM 2401	Quantitative Analysis
CHEM 3368	Environmental Chemistry
ECON 3352	Energy & Environmental Econ
ENVR 4361	Environ Sci Field Exp
GEOG 3301	Environmental Geography
GEOG 3310	Sustainable Development
GEOG 4333	Field Studies
GEOG 4361	Geographic Information Systems for Public Health
GEOG 4365	Applied Geographic Info Systms
GEOL 3330	Oceanography
GEOL 4400	Stratigraphy & Sedimentation
HLTH 4390	Environmental Health
PLSC 4330	Soil Fertility Mgt Fertilizers
POLS 3302	Introduction to Public Policy
SOCI 4337	Environment And Society
WMGT 3382	Habitat & Pond Management

Minor: Not Required <sup>7, 8</sup>

**Total Hours**

**120-122**

- <sup>1</sup> MATH 1420 is recommended if eligible. In addition to fulfilling the the Core Curriculum requirement of Component Area II (Mathematics), the course also satisfies 1 credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option).
- <sup>2</sup> CHEM 1411 and CHEM 1412 satisfy the requirements for the Core Curriculum requirement for Component Area III (Life and Physical Sciences)
- <sup>3</sup> SOCI 2319, GEOG 2355, or GEOG 2356 are recommended for the Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture) or IX because they are prerequisites for some of the Environmental Science Prescribed Electives.
- <sup>4</sup> ECON 2302, ECON 2300, or ECON 2301 satisfies the Core Curriculum requirement for Component Area VIII (Social and Behavioral Sciences) and are needed as a prerequisite for ECON 3352, if desired as a course option. If not, GEOG 1300 recommended.
- <sup>5</sup> Students who would like to take CHEM 3368 must take CHEM 2401 as an elective.
- <sup>6</sup> Students interested in groundwater should take MATH 1430; whereas, students interested in surface water should take MATH 3379 or BIOL 4374.
- <sup>7</sup> 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 will be needed above the degree program's stated total semester credit hours.
- <sup>8</sup> 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.

## First Year

Fall	Hours	Spring	Hours
Component Area IV ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv</a> ) <sup>1</sup>		3 BIOL 1401	4
ENGL 1301 <sup>2</sup>		3 ENGL 1302 <sup>2</sup>	3
GEOG 1401, GEOL 1403, or GEOL 1405		4 GEOL 1403, GEOG 1401, or GEOL 1405	4
HIST 1301 <sup>3</sup>		3 HIST 1302 <sup>3</sup>	3
MATH 1420 <sup>4</sup>		4	

17

14

**Second Year**

Fall	Hours	Spring	Hours
Component Area V ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> )		3 Component Area IX ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix</a> ) <sup>1</sup>	3
Component Area VIII ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a> ) <sup>5</sup>		3 BIOL 1407	4
BIOL 1406 or 1411		4 CHEM 1412 <sup>6</sup>	4
CHEM 1411 <sup>6</sup>		4 POLS 2306 <sup>7</sup>	3
POLS 2305 <sup>7</sup>		3	
		<b>17</b>	<b>14</b>

**Third Year**

Fall	Hours	Spring	Hours
BIOL 3320 or GEOG 3320		3 BIOL 3409	4
ENGL 3330		3 GEOG 2464	4
GEOG 4330		3 GEOL 3326	3
GEOL 4304 or CHEM 3368 <sup>8</sup>		3 MATH 1430, 3379, or BIOL 4374 <sup>10</sup>	3-4
Prescribed Electives <sup>9</sup>		4	
		<b>16</b>	<b>14-15</b>

**Fourth Year**

Fall	Hours	Spring	Hours
BIOL 4330		3 GEOG 4331	3
GEOG 4468 or 4361		3-4 GEOG 4432	4
GEOL 4426		4 POLS 3395	3
PLSC 3440		4 Prescribed Electives <sup>9</sup>	4
		<b>14-15</b>	<b>14</b>

**Total Hours: 120-122**

- <sup>1</sup> SOCI 2319, GEOG 2355, or GEOG 2356 are recommended for the Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture) or IX because they are prerequisites for some of the Environmental Science Prescribed Electives.
- <sup>2</sup> ENGL 1301 and ENGL 1302 satisfy the Core Curriculum requirement for Component Area I (Communication).
- <sup>3</sup> HIST 1301 and HIST 1302 satisfy the Core Curriculum requirement for Component Area VI (U.S. History).
- <sup>4</sup> MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics) as well as 1 hour for Core Curriculum requirement for Component Area IX (Component Area Option).
- <sup>5</sup> ECON 2301, ECON 2300, or ECON 2302 satisfies the Core Curriculum requirement for Component Area VIII (Social and Behavioral Sciences) and are needed as a prerequisite for ECON 3352, if desired as a course option. If not, GEOG 1300 recommended.
- <sup>6</sup> CHEM 1411 and CHEM 1412 satisfy the Core Curriculum requirement for Component Area III (Life and Physical Sciences).
- <sup>7</sup> POLS 2305 and POLS 2306 satisfy the Core Curriculum requirement for Component Area VII (Political Science/Government).
- <sup>8</sup> Students who would like to take CHEM 3368 must take CHEM 2401 as an elective.
- <sup>9</sup> See, the Prescribed Electives course list below. Must select a minimum of 8 hours to meet 120-hour degree requirement.
- <sup>10</sup> Students interested in groundwater should take MATH 1430; whereas, students interested in surface water should take MATH 3379 or BIOL 4374.

Code	Title	Hours
Major: Prescribed Electives <sup>9</sup>		
Must select a minimum of 8 hours to meet 120-hour requirement		
AGET 3383	Soil & Water Conservation Engr	3
BIOL 3461	Wildlife Biology	4
CHEM 2401	Quantitative Analysis	4
CHEM 3368	Environmental Chemistry	3
ECON 3352	Energy & Environmental Econ	3
ENVR 4361	Environ Sci Field Exp	3

GEOG 3301	Environmental Geography	3
GEOG 3310	Sustainable Development	3
GEOG 4333	Field Studies	3
GEOG 4361	Geographic Information Systems for Public Health	3
GEOG 4365	Applied Geographic Info Systems	3
GEOL 3330	Oceanography	3
GEOL 4400	Stratigraphy & Sedimentation	4
HLTH 4390	Environmental Health	3
PLSC 4330	Soil Fertility Mgt Fertilizers	3
POLS 3302	Introduction to Public Policy	3
SOCI 4337	Environment And Society	3
WMGT 3382	Habitat & Pond Management	3

### Notes

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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.

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 will be needed above the degree program's stated total semester credit hours.

All minors can be paired with this degree program.

The BS in Environmental Science (Water Resources) is designed to provide graduates with the following marketable skills:

- Use the scientific method to address environmental problems.
- Think critically.
- Generate and/or interpret geospatial data based geographic information systems (GIS) and remote sensing.
- Use quantitative methods to assess groundwater and surface water issues.
- Apply knowledge of the environment and ecosystems to address environmental problems.
- Problem solve.