

# BACHELOR OF SCIENCE, MAJOR IN COMPUTING SCIENCE (COMPUTING SCIENCE, CS)

**Additional information:** Reference the Program Landing Page (<https://www.shsu.edu/programs/bachelor-of-science-in-computing-science/>) for additional information, such as cost, delivery format, contact information, or to schedule a visit.

| Code   | Title                                    | Hours      |
|--|--|------------|
| <b>Bachelor of Science, Major in Computing Science (Computing Science, CS)</b>   |  |            |
| <b>Core Curriculum</b> ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/</a> ) |  |            |
| Component Area I (Communications)  |  | 6          |
| Component Area II (Mathematics) <sup>1</sup>   |  | 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)   |  | 3          |
| Component Area IX (Component Area Option) <sup>1</sup>   |  | 4          |
| <b>Degree Specifics Requirements</b>   |  |            |
| MATH 1420  | Calculus I <sup>1,2</sup>                | 4          |
| MATH 1430  | Calculus II                              | 4          |
| MATH 2395  | Discrete Mathematics                     | 3          |
| Math (Advanced)  |  | 3          |
| STAT 3379  | Statistical Methods in Practice          | 3          |
| Science (In addition to Component Area III)  |  | 8          |
| <b>Major: Foundation</b>   |  |            |
| COSC 1436  | Programming Fundamentals I               | 4          |
| COSC 1437  | Programming Fundamentals II              | 4          |
| COSC 2329  | Computer Organization & Machine Language | 3          |
| COSC 3318  | Data Base Management Systems             | 3          |
| COSC 3319  | Data Structures and Algorithms           | 3          |
| COSC 4318  | Advanced Language Concepts               | 3          |
| COSC 4319  | Software Engineering                     | 3          |
| COSC 4349  | Professionalism and Ethics               | 3          |
| <b>Major: Concentration (Computing Science, 31 hours)</b>  |  |            |
| COSC 2347  | Special Topics/Programming               | 3          |
| COSC 3327  | Computer Architecture                    | 3          |
| COSC 4149  | Seminar in Computer Science              | 1          |
| COSC 4316  | Compiler Design & Construction           | 3          |
| COSC 4327  | Computer Operating Systems               | 3          |
| <b>Major: Prescribed Electives</b>   |  |            |
| COSC/DFSC Advanced Electives   |  | 6          |
| <b>Electives: Advanced General</b>   |  |            |
| Advance General Electives  |  | 12         |
| <b>Minor: Not Required</b> <sup>3</sup>  |  |            |
| <b>Total Hours</b>   |  | <b>120</b> |

<sup>1</sup> MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics), one semester credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement.

<sup>2</sup> Students who are not eligible for enrollment in MATH 1420 will have additional mathematics requirements.

2 Bachelor of Science, Major in Computing Science (Computing Science, CS)

<sup>3</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 credit hours may be needed above the degree program's stated total semester credit hours.

**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.

The minimum number of credit hours required for a baccalaureate degree is 120. The minimum number of advanced credit hours for a baccalaureate degree is 42. Students may take free elective courses beyond the hours identified in the recommended 4-year plan to meet the overall credit hour and advanced credit hour requirements.

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**First Year**

| Fall   | Hours     | Spring   | Hours     |
|--|-----------|--|-----------|
| Component Area III ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii</a> ) |           | 4 Component Area III ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii</a> ) | 4         |
| COSC 1436  |           | 4 COSC 1437  | 4         |
| ENGL 1301 <sup>1</sup>   |           | 3 ENGL 1302 <sup>1</sup>   | 3         |
| MATH 1420 <sup>2</sup>   |           | 4 MATH 1430  | 4         |
|  | <b>15</b> |  | <b>15</b> |

**Second Year**

| Fall  | Hours     | Spring   | Hours     |
|---|-----------|--|-----------|
| Component Area IV ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv</a> )       |           | 3 Component Area V ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> ) | 3         |
| Component Area VIII ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a> ) |           | 3 COSC 3318  | 3         |
| COSC 2329   |           | 3 COSC 2347  | 3         |
| HSTY 1301 <sup>3</sup>  |           | 3 HSTY 1302 <sup>3</sup>   | 3         |
| POLS 2305 <sup>4</sup>  |           | 3 POLS 2306 <sup>4</sup>   | 3         |
|   | <b>15</b> |  | <b>15</b> |

**Third Year**

| Fall                                 | Hours     | Spring  | Hours     |
|--------------------------------------|-----------|---|-----------|
| COSC 3319                            |           | 3 Component Area IX ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix</a> ) | 3         |
| Degree Specific Requirement: Science |           | 4 COSC 3327   | 3         |
| MATH 2395                            |           | 3 COSC 4327   | 3         |
| General Advanced Electives           |           | 6 Degree Specific Requirement: Science  | 4         |
|                                      |           | STAT 3379   | 3         |
|                                      | <b>16</b> |   | <b>16</b> |

**Fourth Year**

| Fall      | Hours | Spring      | Hours |
|-----------|-------|-------------|-------|
| COSC 4318 |       | 3 COSC 4149 | 1     |

|                             |                               |           |
|-----------------------------|-------------------------------|-----------|
| COSC 4316                   | 3 COSC 4319                   | 3         |
| COSC/DFSC Advanced Elective | 3 COSC 4349                   | 3         |
| MATH (Advanced)             | 3 COSC/DFSC Advanced Elective | 3         |
| General Advanced Elective   | 3 General Advanced Elective   | 3         |
| <b>15</b>                   |                               | <b>13</b> |

**Total Hours: 120**

- <sup>1</sup> Satisfies Core Curriculum requirement for Component Area I (Communications).
- <sup>2</sup> Satisfies the Core Curriculum requirement for Component Area II (Mathematics), one semester credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement. Students who are not eligible for enrollment in MATH 1420 will have additional mathematics requirements.
- <sup>3</sup> Satisfies Core Curriculum requirement for Component Area VI (U.S. History).
- <sup>4</sup> Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).

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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 in Computing Science (Computing Science, CS) is designed to provide graduates with the following marketable skills:

- Software design.
- Database management.
- Complex problem-solving.
- Application of theoretical principles to the development of technological problems.
- Technical communication.