

# BACHELOR OF SCIENCE, MAJOR IN CYBERSECURITY

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

| Code   | Title   | Hours    |
|--|---|----------|
| <b>Bachelor of Science, Major in Cybersecurity</b> |   |          |
| <b>Core Curriculum</b>                             |   |          |
|  | Component Area I (Communications)                         | 6        |
|  | Component Area II (Mathematics) <sup>1, 2</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)                 | 4        |
| <b>Degree Specific Requirements:</b>               |   |          |
| MATH 1420  | Calculus I <sup>1, 2</sup>                                | 4        |
| MATH 1430  | Calculus II   | 4        |
| MATH 2395  | Discrete Mathematics                                      | 3        |
| MATH 3379  | Statistical Methods in Practice                           | 3        |
| <b>Major: Foundation</b>                           |   |          |
| COSC 1436  | Programming Fundamentals I                                | 4        |
| COSC 1437  | Programming Fundamentals II                               | 4        |
| COSC 2327  | Introduction to Computer Networks                         | 3        |
| COSC 2329  | Computer Organization & Machine Language                  | 3        |
| COSC 3312  | Numerical Methods   | 3        |
| COSC 3318  | Data Base Management Systems                              | 3        |
| COSC 3319  | Data Structures and Algorithms                            | 3        |
| COSC 3321  | Digital System Design                                     | 3        |
| COSC 4314  | Data Mining   | 3        |
| COSC 4319  | Software Engineering                                      | 3        |
| COSC 4349  | Professionalism and Ethics                                | 3        |
| DFSC 1316  | Digital Forensics & Information Assurance Fundamentals I  | 3        |
| DFSC 2316  | Digital Forensics & Information Assurance Fundamentals II | 3        |
| DFSC 2320  | Hardware Forensics  | 3        |
| DFSC 3316  | Cryptography and Network Security                         | 3        |
| DFSC 4317  | Information Security                                      | 3        |
| DFSC 4318  | Malware   | 3        |
| DFSC 4338  | Cyber Warfare   | 3        |
| <b>Major: Prescribed Electives</b>                 |   | <b>6</b> |
| COSC 3327  | Computer Architecture                                     |          |
| COSC 3331  | Human-Computer Interaction                                |          |
| COSC 4318  | Advanced Language Concepts                                |          |
| COSC 4326  | Network Theory  |          |
| COSC 4327  | Computer Operating Systems                                |          |
| COSC 4332  | Computer Graphics   |          |
| COSC 4337  | Digital Signal Processing                                 |          |
| COSC 4340  | Special Topics in Computer Science                        |          |
| DFSC 4319  | Principles of Data Quality                                |          |
| <b>Electives: General</b>                          |   |          |

|   |            |
|---|------------|
| General Electives                         | 6          |
| <b>Minor: Not Required</b> <sup>3,4</sup> |            |
| <b>Total Hours</b>                        | <b>120</b> |

<sup>1</sup> MATH 1420 satisfies the requirement for Component Area II (Mathematics) and 1 semester credit hour for Component Area IX (Component Area Option) as well as the major.

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

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

<sup>4</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.

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

### First Year

| Fall   | Hours     | Spring   | Hours     |
|--|-----------|--|-----------|
| Component Area I ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai</a> )       |           | 3 Component Area I ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareai</a> )       | 3         |
| Component Area III ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii</a> ) |           | 4 Component Area III ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii</a> ) | 4         |
| Component Area VI ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi</a> )    |           | 3 Component Area VI ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavi</a> )    | 3         |
| MATH 1420 <sup>1,2</sup>   |           | 4 MATH 1430  | 4         |
|  | <b>14</b> |  | <b>14</b> |

### Second Year

| Fall   | Hours     | Spring  | Hours     |
|--|-----------|---|-----------|
| Component Area IV ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiiv">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiiv</a> )  |           | 3 Component Area VII ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii</a> )    | 3         |
| 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 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> ) | 3         |
| Component Area VII ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareavii</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> )       | 3         |
| COSC 1436  |           | 4 COSC 1437   | 4         |
| MATH 2395  |           | 3 MATH 3379   | 3         |
|  | <b>16</b> |   | <b>16</b> |

### Third Year

| Fall      | Hours | Spring      | Hours |
|-----------|-------|-------------|-------|
| COSC 2327 |       | 3 COSC 3318 | 3     |

|                    |   |                    |   |
|--------------------|---|--------------------|---|
| COSC 2329          | 3 | DFSC 2316          | 3 |
| COSC 3312          | 3 | DFSC 2320          | 3 |
| DFSC 1316          | 3 | DFSC 3316          | 3 |
| Electives: General | 3 | Electives: General | 3 |
| <b>15</b>          |   | <b>15</b>          |   |

**Fourth Year**

| Fall   | Hours | Spring   | Hours |
|--|-------|--|-------|
| Major: Prescribed Advanced Elective <sup>3</sup> |       | 3 Major: Prescribed Advanced Elective <sup>3</sup> | 3     |
| DFSC 4317  |       | 3 COSC 4319  | 3     |
| COSC 4314  |       | 3 COSC 4349  | 3     |
| COSC 3321  |       | 3 DFSC 4318  | 3     |
| COSC 3319  |       | 3 DFSC 4338  | 3     |
| <b>15</b>  |       | <b>15</b>  |       |

**Total Hours: 120**

<sup>1</sup> MATH 1420 satisfies the requirement for Component Area II (Mathematics) and 1 semester credit hour for Component Area IX (Component Area Option) as well as the major.

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

<sup>3</sup> Select one of the Prescribed Electives from the below course listing.

| Code  | Title                              | Hours |
|---|------------------------------------|-------|
| <b>Prescribed Advanced Elective Courses<sup>3</sup></b> |                                    |       |
| COSC 3327   | Computer Architecture              | 3     |
| COSC 3331   | Human-Computer Interaction         | 3     |
| COSC 4318   | Advanced Language Concepts         | 3     |
| COSC 4326   | Network Theory                     | 3     |
| COSC 4327   | Computer Operating Systems         | 3     |
| COSC 4332   | Computer Graphics                  | 3     |
| COSC 4337   | Digital Signal Processing          | 3     |
| COSC 4340   | Special Topics in Computer Science | 3     |
| DFSC 4319   | Principles of Data Quality         | 3     |

**Notes**

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

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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.

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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 Cybersecurity is designed to provide graduates with the following marketable skills:

- Information Security.
- Hardware and Network Security.
- Digital Forensics Investigation.
- Incident Response.
- Penetration Testing.

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- Solve complex technology-related problems.
- Technical communication.