# CYBERSECURITY, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN SECURE SOFTWARE DEVELOPMENT

## Recommended Four-Year Plan

| Course | Title | Hours |
|---|---|---|
| **First Year** | | |
| **Fall** | | |
| CPSC 130 | Introduction to Computing and Programming | 3 |
| CYBR 101 | Cybersecurity in the Era of Evolving Technology | 3 |
| ENGL 102 | Critical Writing | 3 |
| ESAP 101 | FYRST Seminar [*] | 1 |
| MATH 120 or SCI 101 | Intermediate Algebra or Science of Life | 3 |
| SUBJ 139 | Foundations of Academic Discovery [1] | 3 |
| | **Hours** | **16** |
| **Spring** | | |
| CPSC 146 | Programming Principles | 3 |
| CPSC 301 | Practical Computer Security | 3 |
| ENGL 104 | Critical Reading | 3 |
| Select one of the following: | | 4 |
| MATH 125 | Precalculus | |
| MATH 225 | Calculus I | |
| MATH 230 | Calculus II | |
| MATH 231 | Calculus III | |
| Select one of the following: | | 3 |
| COMM 200 | Civil Discourse: Theory & Practice | |
| PHIL 110 | Ethics and Civil Discourse | |
| POLS 235 | Civil Discourse and Democracy | |
| | **Hours** | **16** |
| **Second Year** | | |
| **Fall** | | |
| CPSC 207 | Shell Commands and Scripting | 3 |
| CPSC 246 | Advanced Programming Principles | 3 |
| SCI 101 | Science of Life (or CE Elective) | 3 |
| Creative & Aesthetic Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Social Science Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Declare a Thematic Thread [2] | | |
| | **Hours** | **15** |
| **Spring** | | |
| CPSC 323 | Fundamentals of Database Systems | 3 |
| CYBR 301 | Secure Programming | 3 |
| CPSC 300 | Challenges of Computer Technology | 3 |
| SCI 102 | Understanding the Physical World (or Cybersecurity Elective) | 3 |
| Humanities Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| | **Hours** | **15** |
| **Third Year** | | |
| **Fall** | | |
| CPSC 311 | Discrete Computational Structures | 3 |
| CPSC 376 | Programming Language and Theory | 3 |
| CYBR 353 | Software Assurance | 3 |
| Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 3 |
| | **Hours** | **15** |
| **Spring** | | |
| CPSC 327 | Administration and Security | 3 |
| CPSC 374 | Algorithms and Data Structures | 3 |
| CYBR 401 | Software Security Analysis | 3 |
| Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 3 |
| | **Hours** | **15** |
| **Fourth Year** | | |
| **Fall** | | |
| CPSC 423 | Computer Networks | 3 |
| CYBR 471 | Malware Analysis | 3 |
| Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 3 |
| | **Hours** | **15** |
| **Spring** | | |
| CPSC 488 | Software Engineering | 3 |
| Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 3 |
| Cyber Elective or Free Elective (p. 1) | | 4 |
| | **Hours** | **13** |
| | **Total Hours**** | **120** |

[1] Course offered in multiple subjects; cannot take course in first major subject

[2] Work with your Academic Adviser to declare a Thematic Thread by the end of your fall semester in your second year.

[*] Students are encouraged to take ESAP 101 as a Free Elective.

## Cyber Elective - CE Courses

| Code | Title | Hours |
|---|---|---|
| Select six credits | | |
| CPSC 333 | Introduction to Computer Forensics | 3 |
| CPSC 370 | Computer Organization and Architecture | 3 |
| CPSC 474 | Advanced Architecture & Parallel Computing | 3 |
| CPSC 450 | Internship [1] | 1-12 |
| CPSC 478 | Analysis of Algorithms | 3 |

[1] Jr. or Sr. Computing major with 3.0 GPA. Application required

*\*\* This document is meant to serve as a guide. Some planners may show more than 120 credits because faculty have created flexibility in choosing courses.  However, only 120 credits are required to obtain a degree. Please consult with your academic adviser and refer to your curriculum guide prior to registering for courses. This plan should be reviewed, and verified, by you and your academic adviser at least once each academic year.*

Major Code: 6421
Concentration: SSDE
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