### BS in Cybersecurity (396527) MAP Sheet

**Engineering, School of Technology**

For students entering the degree program during the 2020-2021 curricular year.

Cybersecurity is a computing-based discipline involving technology, people, information, and processes to protect computing systems from adversaries. It involves the creation, operation, analysis, and testing of secure computing systems. Cybersecurity professionals know how to secure websites, mobile apps, operating systems, databases, networks, and embedded computing systems. They stay current on the latest computer vulnerabilities, help prevent employees from falling victim to social engineering attacks, collaborate with leadership to mitigate and manage risks, monitor systems to identify intruders, and respond effectively when successful attacks occur. Penetration testers, also known as Red Team members, are hired by companies and organizations to identify vulnerabilities by ethically hacking into systems. Digital forensics investigators use sophisticated tools to track down attackers and capture evidence that can be used in court. Because of the

#### University Core and Graduation Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>#Classes</th>
<th>Hours</th>
<th>Classes</th>
</tr>
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<tbody>
<tr>
<td><strong>University Core Requirements:</strong></td>
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<tr>
<td><strong>Religion Cornerstones</strong></td>
<td>1</td>
<td>2.0</td>
<td>REL A 275</td>
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<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
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<td>Jesus Christ and the Everlasting Gospel</td>
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<td><strong>The Individual and Society</strong></td>
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<tr>
<td>American Heritage</td>
<td>1-2</td>
<td>3-6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Global and Cultural Awareness</td>
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<td>from approved list</td>
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<tr>
<td><strong>Skills</strong></td>
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<tr>
<td>First Year Writing</td>
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<tr>
<td>Advanced Written and Oral Communications</td>
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<td>WRTG 316*</td>
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<tr>
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<td>MATH 112* or ACT</td>
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<td>IT 321*</td>
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<tr>
<td>Social Science</td>
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**FRESHMAN YEAR**

<table>
<thead>
<tr>
<th>Semester</th>
<th>First-Year Writing or American Heritage</th>
<th>IT&amp;C 101</th>
<th>C S 142</th>
<th>MATH 112</th>
<th>Religion Cornerstone course</th>
<th>Total Hours</th>
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<td>1st Semester</td>
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<td>2nd Semester</td>
<td>First-Year Writing or American Heritage</td>
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<td>PHSCS 121</td>
<td>C S 235</td>
<td>IT&amp;C 124</td>
<td>TECH 112</td>
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**SOPHOMORE YEAR**

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<thead>
<tr>
<th>Semester</th>
<th>IT&amp;C 210A</th>
<th>IT&amp;C 210B</th>
<th>IT&amp;C 291R</th>
<th>STAT 201</th>
<th>Global &amp; Cultural Awareness</th>
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<td>3.0</td>
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<td>4th Semester</td>
<td>IT&amp;C 231</td>
<td>Minor/General Elective</td>
<td>Religion Elective</td>
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<tr>
<td>3.0</td>
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**JUNIOR YEAR**

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<tr>
<th>Semester</th>
<th>IT&amp;C 327</th>
<th>IT&amp;C 344</th>
<th>IT&amp;C 347</th>
<th>IT&amp;C 291R</th>
<th>WRTG 336</th>
<th>Religion Elective</th>
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<td>6th Semester</td>
<td>IT&amp;C 350</td>
<td>IT&amp;C 366</td>
<td>ECON 110 or PSYCH 111</td>
<td>Civilization I</td>
<td>Religion Elective</td>
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**SENIOR YEAR**

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<th>Semester</th>
<th>IT&amp;C 446</th>
<th>IT&amp;C 567</th>
<th>Cybersecurity Technical Elective</th>
<th>IT&amp;C 231</th>
<th>Minor/General Elective</th>
<th>Religion Elective</th>
<th>Total Hours</th>
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</thead>
<tbody>
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<td>Civilization II and Arts or Letters</td>
<td>General Elective</td>
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<td>3.0</td>
<td>3.0</td>
<td>15.0</td>
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#### Graduation Requirements:

- Minimum residence hours required: 30.0
- Minimum hours needed to graduate: 120.0

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS

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Suggested Sequence of Courses

- **FRESHMAN YEAR**
  - 1st Semester:
    - First-Year Writing or American Heritage: 3.0
    - IT&C 101: 3.0
    - C S 142: 3.0
    - MATH 112: 4.0
    - Religion Cornerstone course: 2.0
    - Total Hours: 15.0
  - 2nd Semester:
    - First-Year Writing or American Heritage: 3.0
    - PHSCS 121: 3.0
    - C S 235: 3.0
    - IT&C 124: 3.0
    - TECH 112: 1.0
    - Religion Cornerstone course: 2.0
    - Total Hours: 15.0

- **SOPHOMORE YEAR**
  - 3rd Semester:
    - IT&C 210A: 2.0
    - IT&C 210B: 2.0
    - IT&C 291R: 0.5
    - STAT 201: 3.0
    - Global & Cultural Awareness: 3.0
    - Religion Cornerstone course: 2.0
    - Total Hours: 15.5
  - 4th Semester:
    - IT&C 231: 3.0
    - Minor/General Elective: 1.0
    - Religion Elective: 2.0
    - Total Hours: 15.0

- **JUNIOR YEAR**
  - 5th Semester:
    - IT&C 327: 4.0
    - IT&C 344: 3.0
    - IT&C 347: 3.0
    - IT&C 291R: 0.5
    - WRTG 336: 3.0
    - Religion Elective: 2.0
    - Total Hours: 15.5
  - 6th Semester:
    - IT&C 350: 3.0
    - IT&C 366: 3.0
    - ECON 110 or PSYCH 111: 3.0
    - Civilization I: 3.0
    - Religion Elective: 2.0
    - Total Hours: 14.0

- **SENIOR YEAR**
  - 7th Semester:
    - IT&C 446: 3.0
    - IT&C 567: 3.0
    - Cybersecurity Technical Elective: 3.0
    - IT&C 231: 3.0
    - Minor/General Elective: 1.0
    - Religion Elective: 2.0
    - Total Hours: 15.0
  - 8th Semester:
    - IT&C 447: 3.0
    - Arts or Letters: 3.0
    - Civilization II and Arts or Letters: 3.0
    - General Elective: 3.0
    - Total Hours: 15.0

IT&C 447 includes the requirement of 200 hours of approved cybersecurity work experience.
### BS in Cybersecurity (396527)
#### 2020-2021 Program Requirements (77 Credit Hours)

**Students must have a minimum of 120 total hours to graduate with this major.**

**REQUIREMENT 1** Complete 7 courses
- CS 142 - Introduction to Computer Programming 3.0
- CS 235 - Data Structures and Algorithms 3.0
- CS 236 - Discrete Structures 3.0
- MATH 112 - Calculus 1 4.0
- PHYS 121 - Introduction to Newtonian Mechanics 3.0
- STAT 201 - Statistics for Engineers and Scientists 3.0
- WRTG 116 - Technical Communication 3.0

**REQUIREMENT 2** Complete 1 course
- ENG T 231 - (Not currently offered)

**REQUIREMENT 3** Complete 1 course
- IT&C 231 - Ethics, Globalization, & Leadership 3.0

**REQUIREMENT 4** Complete 15 courses
- **NOTE:** IT&C 210A AND 212 MUST BE COMPLETED WITH A GRADE OF C OR HIGHER PRIOR TO ENTERING ANY 300-LEVEL IT COURSE.
- IT&C 101 - Cornerstone: Information Technology & Cybersecurity 3.0
- IT&C 124 - Introduction to Computer Systems 3.0
- IT&C 210A - Fundamentals of Web-Based Information Technology 2.0
- IT&C 210B - Fundamentals of Web-Based Information Technology 2.0
- IT&C 252 - Computer Architecture and Organization 3.0
- IT&C 293 - Professional Seminar 0.5
- IT&C 327 - Digital Communications 4.0
- IT&C 344 - Operating Systems 3.0
- IT&C 347 - Computer Networks 3.0
- IT&C 350 - Database Principles and Applications 3.0
- IT&C 366 - Information Assurance and Security 3.0
- IT&C 446 - Senior Project / Capstone 1 3.0
- IT&C 447 - Senior Projects/Capstone 2 3.0
- IT&C 566 - Digital Forensics 3.0
- IT&C 567 - Cybersecurity and Penetration Testing 3.0

**REQUIREMENT 5** Complete 1.5 hours from the following course(s)
- IT&C 201R - Seminar 0.5
- MATH 112 - Calculus 1 4.0

**REQUIREMENT 6** Complete 6.0 hours from the following course(s)
- COURSES OUTSIDE OF THOSE LISTED MUST BE PRE-APPROVED BY THE PROGRAM. IT&C 492R AND 515R MUST HAVE A CYBERSECURITY-RELATED TOPIC.
- **CAREER OPPORTUNITIES:**

  The field has grown tremendously in recent years and is expected to continue rapid growth in the coming decades. BYU’s Cybersecurity program is recognized as a National Center of Academic Excellence in Cyber Defense by the NSA/DHS and has placed students in the public and private sector at top companies both small and large. Graduates fill roles as penetration testers, forensics computer analysts, network and systems administrators, data security engineers, information security analysts, security architects, IT security engineers, and Chief Information Security Officers.

**MAP DISCLAIMER**
While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

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