

# DEPARTMENT OF COMPUTER & INFORMATION SCIENCE

## BACHELOR OF SCIENCE IN CYBERSECURITY

The rise in cyber threats has created an unprecedented demand for cybersecurity specialists. Data breaches, malware infections, and software vulnerabilities are common in today's technology and it is critical to fully understand how these attacks occur, how to prevent them, and how to recover. A cybersecurity major will understand techniques used as well as the best methods to protect data. The cybersecurity degree includes courses in programming, wireless technologies, mathematics, and networking concentrating on theory and hands-on experience.

### Curriculum

The matrix below is a sample plan for all coursework required for this program.

#### Freshman

Fall	Credits
ENGL 1013 Composition I <sup>1</sup>	3
FAH 1XXX Fine Arts and Humanities Courses <sup>1</sup>	3
MATH 2243 Calculus for Business and Economics <sup>3</sup>	3
TECH 1001 Orientation to the University <sup>2</sup>	1
CSEC 1003 Introduction to Cybersecurity	3
CSEC 1113 Introduction to Networking	3
<b>Total Hours</b>	<b>16</b>

Spring	Credits
ENGL 1023 Composition II <sup>1</sup>	3
SCIL 1xxx <sup>1</sup>	4
COMS 1011 Programming Foundations I Lab and COMS 1013 Programming Foundations I	4
CSEC 1213 Wireless and Cellular Security	3
<b>Total Hours</b>	<b>14</b>

#### Sophomore

Fall	Credits
CSEC 2223 Virtualization	3
COMS 2203 Programming Foundations II	3
MATH 2703 Discrete Mathematics	3
CSEC 2213 Network Forensics and Incident Response	3
SS 1XXX Social Science Courses <sup>1</sup>	3
<b>Total Hours</b>	<b>15</b>

Spring	Credits
COMS 2323 Programming in Python	3

Spring	Credits
COMM 2173 Business and Professional Speaking <sup>4</sup>	3
COMS 2213 Data Structures	3
CSEC 2223 Virtualization	3
Elective	3
<b>Total Hours</b>	<b>15</b>

**Junior**

Fall	Credits
SCIL 1XXX Science with Laboratory <sup>1</sup>	4
CSEC 3243 Computer Architecture	3
STAT 2163 Introduction to Statistical Methods	3
CSEC 4133 Large Scale Distributed Systems	3
CSEC 3123 Cyber Defense I	3
<b>Total Hours</b>	<b>16</b>

Spring	Credits
FAH 1XXX Fine Arts and Humanities Courses <sup>1</sup>	3
COMS 3233 Database Design and Implementation	3
CSEC 3223 Programming Embedded Systems	3
CSEC 3233 Cyber Defense II	3
COMS 3703 Advanced Operating Systems	3
<b>Total Hours</b>	<b>15</b>

**Senior**

Fall	Credits
SS 1XXX Social Science Courses <sup>1</sup>	3
CSEC 4123 Applied Cryptography	3
CSEC 4143 Building Secure Software	3
CSEC 4153 Human Factors in Cybersecurity	3
CSEC 4233 Legal Issues in Cybersecurity	3
<b>Total Hours</b>	<b>15</b>

Spring	Credits
CSEC 4213 Information Systems Risk Management	3
CSEC 4243 Software Security Analysis and Reverse Engineering	3
CSEC 4293 Cybersecurity Capstone Project	3

Spring	Credits
USHG 1XXX U.S. History and Government <sup>1</sup>	3
Elective (3000-4000 Level)	2
<b>Total Hours</b>	<b>13</b>

<sup>1</sup>See appropriate alternatives or substitutions in "[General Education Requirements](#)".

<sup>2</sup>TECH 1013 Introduction to the University is a substitution for TECH 1001 Orientation to the University; Electives would reduce from 3 hours to 1 hour.

<sup>3</sup>MATH 2914 Calculus I is a substitution for MATH 2243 Calculus for Business and Economics.

<sup>4</sup>COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.