Bachelor of Science in Cyber Security

Computer Systems Security Concentration
Information systems play an important role in supporting commerce, banking, telecommunications, healthcare, and national security. As our reliance on computers increases and technology grows more sophisticated, the need for cyber security experts becomes critical to protect users and keep personal information out of the hands of hackers and safe from cyber threats. The Bachelors of Science in Cyber Security is designed to help students acquire and apply the latest methods, techniques, and tools for securing the public and private sector.

Outcomes: Core
- Evaluate computer and information security needs for an organization
- Implement continuous network monitoring and provide real-time security solutions
- Assess risk management policies to ensure adequate protection of critical assets and information
- Measure the performance of security systems within an enterprise-level computer network
- Maintain, troubleshoot, and update enterprise-level security systems
- Formulate, update, and communicate short and long term enterprise cyber security strategies
- Conduct risk and vulnerability assessments through the analysis of advanced threats and deploy countermeasures

Outcomes: Concentration
- Explain the computer architecture of a modern desktop or server to include the CPU, memory, and storage systems
- Describe the homeland security program and organization for the United States
- Construct programs in C++ to include fundamental algorithms and data structures
- Construct apps for mobile devices
- Analyze computer network architectures
- Construct static and dynamic web sites

Courses: General Education

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON210</td>
<td>Principles of Macroeconomics</td>
<td>4.5</td>
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<tr>
<td>ENGL101</td>
<td>Composition and Critical Thinking</td>
<td>4.5</td>
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<tr>
<td>ENGL103</td>
<td>Composition: Writing and Research</td>
<td>4.5</td>
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<tr>
<td>ENGL206</td>
<td>Technical and Professional Writing</td>
<td>4.5</td>
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<tr>
<td>HIST101</td>
<td>Modern American History: 1950 to the 21st Century</td>
<td>4.5</td>
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<tr>
<td>IT254</td>
<td>Spreadsheet Applications</td>
<td>4.5</td>
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<tr>
<td>LITR201</td>
<td>Literature: A Reflection of Life</td>
<td>4.5</td>
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<tr>
<td>MATH109</td>
<td>Introduction to Algebra</td>
<td>4.5</td>
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<tr>
<td>MATH112</td>
<td>Analytic College Algebra</td>
<td>4.5</td>
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<tr>
<td>MATH203</td>
<td>Applications of Discrete Mathematics</td>
<td>4.5</td>
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<tr>
<td>MATH301</td>
<td>Data Driven Statistics</td>
<td>4.5</td>
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<tr>
<td>PHIL306</td>
<td>Ethics for the Information Age</td>
<td>4.5</td>
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PHIL301 Ethics for Professionals 4.5
SCI101 Introduction to the Sciences 4.5
SCI103 Lab - Science and Technology 1.5
SCI201 Environmental Science and Sustainability 4.5
SCI203 Lab – Environmental Science and Sustainability 1.5
UNIV104 or HUMELE Academic and Career Success or Humanities Elective 4.5

**Courses: Core**
CSS150 Introduction to Computer Security 4
CSS200 Principles of Network Security 4
CSS250 Security Risk Management 4
CSS260 Scripting with Perl 4
CSS300 Vulnerability Assessment and Management 4
CSS321 Software Assurance 4
CSS332 Database and Web Vulnerabilities and Security 4
CSS350 Computer Forensics I 4
CSS351 Computer Forensics II 4
CSS380 Business Continuity and Disaster Recovery Planning 4
CSS410 Cloud Computing, Privacy and Security 4
CSS441 Security Compliance 4
CSS450 Security Capstone 4

**Courses: Computer Systems Security Concentration**
CJUS254 Introduction to Homeland Security 4
CE242 Computer Architecture 4
CS104 Problem Solving Concepts With C++ 4
CS115 Programming with C++ 4
CS146 Introduction to Unix 4
CS215 Intermediate C++ Programming 4
CS230 Data Structures 4
CS265 Algorithms 4
CS310 Programming Mobile Apps 4
CS340 Operating Systems 4
CS366 Software Engineering Methods 4
EM208 or EM207 Introduction to Website Development 4
IT205 Fundamentals of Networking 4
IT305 Advanced Networking 4
TECH ELECTIVES Select two CSS/CS/IT courses 8

**Total Program Credits:** 186