Cybersecurity
Associate in Science Degree, Transfer program
Division of STEM
Associate Dean: Bradley Cole
Coordinator: Joe DeLeone

In an increasingly networked world, the threat to critical infrastructures and personal data is real and pervasive. There is a clear need for skilled professionals to help prevent damaging and costly security breaches. This program places emphasis on the fundamental skills and knowledge required to safeguard an organization’s information and defend systems while preparing students for successful transfer to a 4-year institution to continue their studies in computer and/or network security related field. Any student enrolling or currently enrolled in the program is required to inform the department chair of any prior felony convictions or felony convictions that occur while the student is enrolled in the program; enrollment in the program is then contingent on approval by the department chair.

Graduates are prepared to:
• Demonstrate knowledge and understanding of essential facts, concepts, design principles, policies, laws and threats relating to computer and network security
• Identify and explain the impact of technology on individuals and organizations, including security and ethical issues
• Demonstrate the ability to program effectively and securely
• Configure and administer systems and networks with an understanding of vulnerabilities and defensive techniques utilized to keep data secure
• Communicate effectively with individuals in and outside of the field.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English (ENGL 1010 and 1020)*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics (MATH 1310 and 1413 or higher)*</td>
<td>8</td>
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<tr>
<td>Laboratory Science (PHYS 1730-1740)</td>
<td>8</td>
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<tr>
<td>Social Sciences elective</td>
<td>3</td>
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<tr>
<td>Humanities elective</td>
<td>3</td>
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<tr>
<td>Liberal Arts &amp; Science elective</td>
<td>3</td>
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<tr>
<td>Computer Courses (CSNT1200, CSNT1500 or CRST1010, CSNS1610, CSNS2620, CSCS1240, CSCS1730, CSCS1320 or CSCS2420, CSIT2400)</td>
<td>28-29</td>
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<tr>
<td>Philosophy (PHIL 2010)</td>
<td>3</td>
</tr>
<tr>
<td>Wellness (Activity and/or Awareness)</td>
<td>1</td>
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<tr>
<td>Total hours</td>
<td>63-64</td>
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Sample Sequence: (Intended as a guide for academic planning. It need not be followed exactly or completed in four semesters.)

First Semester
Mathematics (MATH 1413 or higher)\(^1\)                          4
English (ENGL 1010 or higher)                                     3
Structured & Obj-Oriented Problem-Solving (CSCS 1240)              3
Introduction to Networks (CSNT1200)                               4
UNIX/Linux (CSCS 1730)                                            4

Second Semester Mathematics
(MATH 1310 or higher)\(^1\)                                       4
English (ENGL 1020)                                               3
Fundamentals of Information Security (CSNS 1610)                   4
Wellness (Activity and/or Awareness)                              1
Routing and Switching Essentials (CSNT1500 or CRST1010 Computer Hardware\(^3\)) | 4 |

Third Semester
Principles of Physics (PHYS 1730)                                  4
Database System (CSIT 2400)                                       3
C/C++ Programming (CSCS1320)\(^4\)                                 3
Introduction to Ethics (PHIL 2010)                                3

Fourth Semester
Principles of Physics II (PHYS1740)                               4
Fundamentals of Information Assurance (CSNS 2620)\(^3\)            3
Humanities elective\(^2\)                                         3
Liberal Arts and Sciences elective\(^2\)                            3
Social Science elective\(^2\)                                      3

Footnotes:
1 Math courses higher than MATH 1413 may be preferred by some transfer schools.
2 Students must choose from courses that are in the following different SUNY Gen Ed Knowledge and Skills areas: Social Science, American History, Western Civilization, Other World Civilizations, The Arts, and Foreign Languages. Advisor assistance is strongly encouraged.
3 or MATH1411 and MATH1412
4 If transferring to Alfred State
*Based on placement, students might be required to take developmental and/or prerequisite classes before taking the required English and math courses. *Students in this program who plan to transfer to a SUNY college can meet 30 credits of the general education requirement. *Since programs at transfer colleges vary greatly, it is essential that students meet early with their advisor in order to select appropriate electives.
* High school or equivalent preparation required: biology, chemistry or physics and four years of mathematics, including algebra, geometry or intermediate algebra, trigonometry, and pre-calculus. Students who don’t have this preparation will be able to get it here, but it may take longer to complete the program.
* Any student enrolling or currently enrolled in the program is required to inform the program coordinator of any felony convictions that occur while the student is enrolled or have occurred prior to enrollment.