

# Computer Information Systems

## Cybersecurity Option, Bachelor of Science Degree (244305BS)

The following information has official approval of The University of Akron's College of Applied Science and Technology but is intended only as a guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, and prerequisites, among others. The transfer process is completed through an appointment with your Academic Advisor.

Courses in **bold** type are Cybersecurity core courses. Non-bold, non-italicized courses are non-Cybersecurity core courses. General Education requirements are in *italics*. If a course is not specified, refer to the General Education webpage at <http://www.uakron.edu/cast/gened>. The College of Applied Science and Technology recommends that students take the General Education courses listed in this curriculum guide. Transfer students should consult their Advisor to identify courses that are equivalent.

Year 1 Fall	Prerequisite
2020:121 <i>English</i> (3)	<i>Placement by Advisor</i>
<b>2440:145 Introduction to UNIX/Linux<sup>a</sup> (3)</b>	<b>2440:105 or placement test</b>
<b>2440:201 Networking Basics<sup>a-c-e</sup> (3)</b>	<b>2440:105 or placement test</b>
<b>2440:202 Router and Routing Basics<sup>a-c-e</sup> (3)</b>	<b>2440:201</b>
<b>2235:100 Introduction to Digital Forensics<sup>a</sup> (3)</b>	
<b>Total Credits = 15</b>	

Year 1 Spring	Prerequisite
2020:222 <i>Technical Report Writing</i> (3)	2020:121 or 3300:111 or equivalent
2030:152 <i>Technical Mathematics II</i> (2) -AND- 2030:153 <i>Technical Mathematics III</i> (2)	<i>Placement by Advisor</i> 2030:152 (pass with C- or better)
<b>2440:121 Introduction to Logic/Programming</b> (3)	<b>2440:105 or placement test</b>
<b>2440:203 Switching Basics and Wireless<sup>a-d-e</sup> (3)</b>	<b>2440:201 and 2440:202</b>
<b>2440:204 WAN Technologies<sup>a-d-e</sup> (3)</b>	<b>2440:202 and 2440:203</b>
<b>Total Credits = 16</b>	

Year 2 Fall	Prerequisite
<i>Natural Science Requirement without Lab<sup>h</sup></i> (3)	
2420:263 <i>Professional Communications and Presentations</i> (3)	
2040:256 <i>Diversity in American Society</i> (3) <i>Fulfills Domestic Diversity Tag</i>	2020:121, or 3300:112 or equivalent
<b>2235:280 Cybercrime<sup>a</sup> (3)</b>	<b>2235:100</b>
<b>2440:247 Hardware Support<sup>a</sup> (3)</b>	<b>Admission to program or permission of program director</b>
<b>Total Credits = 15</b>	

Year 2 Spring	Prerequisite
2040:241 <i>Technology and Human Values</i> (3) <i>Fulfills Complex Issues Tag</i>	
<b>2235:281 Computer Forensic Methods<sup>a</sup> (3)</b>	<b>2235:100</b>
<b>2440:248 Server Hardware Support<sup>a-d</sup> (3)</b>	<b>2440:247</b>
2030:216 <i>Applied Finite Mathematics</i> (3)	2030:153 with a grade of C- or better, or placement test
<b>2440:240 CIS Internship or Co-op<sup>a-d-f</sup> (3/0)</b>	<b>2440:241, or 2440:202 and 2440:247, or 2440:282 and 2440:247</b>
<b>Total Credits = 15</b>	

Year 3 Fall	Prerequisite
<i>Natural Science Requirement with Lab<sup>h</sup></i> (4)	
2030:361 <i>Applied Cryptography</i> (3)	A grade of C- or better in either 2030:154 or 2030:216
<b>2235:283 Cyber Hacking &amp; Data Recovery<sup>a</sup> (3)</b>	<b>2235:100 or 3800:100</b>
<b>2235:381 Computer Forensic Methods II<sup>a</sup> (3)</b>	<b>2220:281</b>
<b>2235:382 File System Analysis<sup>a</sup> (3)</b>	<b>2220:281</b>
<b>Total Credits = 16</b>	

Year 3 Spring	Prerequisite
3300:252 <i>Shakespeare and His World</i> (3) -OR- 3300:281 <i>Fiction Appreciation</i> (3) -OR- <i>Arts or Humanities Requirement<sup>h</sup></i> (3)	<i>For 3300:252/281 only: 2020:121 and 2020:222 or their equivalents, and 3400:210 or 3400:221</i>
<b>2235:383 Ethical Hacking<sup>a</sup> (3)</b>	<b>2235:283</b>
<b>2440:331 Programming for Cybersecurity<sup>a-d</sup> (3)</b>	<b>2440:121 and 2440:145</b>
<b>2440:340 Network Forensics I<sup>a-d</sup> (3)</b>	<b>Junior/Senior standing &amp; 2220:281 with a grade of C or better</b>
<b>2440:388 Advanced Unix/Linux<sup>b</sup> (3)</b>	<b>2440:145 and Junior/Senior Standing</b>
<b>Total Credits = 15</b>	

Year 3 Summer	Prerequisite
<b>Co-op<sup>f</sup> (0/3)</b>	

Year 4 Fall	Prerequisite
3600:101 <i>Introduction to Philosophy</i> (3) -OR- 3600:125 <i>Theory and Evidence</i> (3) -OR- 3600:150 <i>Critical Thinking</i> (3) -OR- 3600:170 <i>Introduction to Logic</i> (3) -OR- <i>Humanities Requirement<sup>h</sup></i> (3) <i>Each Course Fulfills Critical Thinking Tag</i>	
<b>2440:300 Network Authentication &amp; Security<sup>a-c</sup> (3)</b>	<b>2440:204</b>
<b>2440:431 UNIX-based System Security<sup>a-c</sup> (3)</b>	<b>2440:388 with a grade of C or better</b>
<b>2440:442 Wireless Forensics<sup>a-c</sup> (3)</b>	<b>Junior/Senior standing and a grade of C or 2440:340</b>
<b>2440:443 Network Forensics II<sup>a-c</sup> (3)</b>	<b>Junior/Senior standing and a grade of C or 2440:340</b>
<b>Total Credits = 15</b>	

Year 4 Spring	Prerequisite
2040:243 <i>Contemporary Global Issues</i> (3) <i>Fulfills Global Diversity Tag</i>	
7100:210 <i>Visual Arts Awareness</i> (3) -OR- 7500:201 <i>Exploring Music, Bach to Rock</i> (3) -OR- 7900:200 <i>Viewing Dance</i> (3) -OR- <i>Arts Requirement<sup>h</sup></i> (3)	3400:210 or 3400:221 3400:210 or 3400:221 3400:210 or 3400:221
<b>2440:440 Intrusion Detection<sup>a-d</sup> (3)</b>	<b>Junior/Senior standing &amp; 2440:340 with a grade of C or better</b>
2030:461 <i>Applied Cryptanalysis</i> (3)	2030:361 with a grade of C- or better
<b>2440:490 CIS Senior Networking Projects<sup>a-d</sup> (3)</b>	<b>Permission from program director</b>
<b>Total Credits = 15</b>	

**Total Credits for Degree = 122 minimum**

**Policy Alert: By the end of your first 48 credit hours attempted, you must have completed your REQUIRED General Education English, Mathematics, and Communications (Speech) requirements.**

**You must have a minimum cumulative GPA of a 2.0 to graduate with this degree.**

## Notes

- a) Students must attain a "C" or better in each course in their major area (2440/2220/2235).
- b) The Department of Business and Information Technology requires a cumulative GPA of 2.0 and a minimum of 15 earned credit hours for Inter- and Intra-College Transfer into all Associate and Bachelor's degree programs.
- c) Traditionally Fall Only (See Program Contact)
- d) Traditionally Spring Only (See Program Contact)
- e) Course is a 7.5 week course
- f) Eligible students will be involved in a paid co-op experience during the summer semester of the third year of the program. Co-op positions will enhance the cybersecurity skills of students and provide them with relevant and practical work experience in the cybersecurity industry. Students must have a cumulative GPA of 3.0 or higher in their 2440, 2235, and 2030 courses at the end of the 2<sup>nd</sup> Year Fall semester and must maintain a GPA of 3.0 or higher through 3<sup>rd</sup> Year Spring semester to be eligible for the Co-op.
  - This paid co-op experience course will be offered as a special section of 2440:240 CIS Internship for those who qualify.
  - Those students who have a cumulative GPA under 3.0 must complete a standard section of 2440:240 CIS Internship course. This will also include those who did not maintain a cumulative GPA of 3.0 or higher from the 2<sup>nd</sup> Year Fall semester through the 3<sup>rd</sup> Year Spring semester.
- g) Students must consult with their advisor to choose at least one Humanities and Arts general education course approved for the Complex Systems Affecting Individuals in Society TAG.
- h) Course must be part of the Ohio Transfer Module.

## BS CIS – Cybersecurity Option (Total Credits)

- General Education (38/122 credits) = 31%
- Mathematics (9/122 credits) = 7%
- CIS (54/122 credits) = 44%
- EMHS (21/122 credits) = 17%

## Program Contacts

- Dr. John Nicholas ([jn@uakron.edu](mailto:jn@uakron.edu)), 330-972-2563
- Dr. Scott Randby ([srandby@uakron.edu](mailto:srandby@uakron.edu)), 330-972-6094
- Mr. Stanley Smith ([shsmith@uakron.edu](mailto:shsmith@uakron.edu)), 330-972-6950
- CAST Advising, Polsky Building Room 203, 330-972-7220

## Program Description

The CIS discipline or program area offers associate and baccalaureate programs that introduce students to basic computing concepts while allowing them to develop the basic skills required to begin a career. Courses start the student along the path for professional certifications. There are options, minors, and certificates available. CIS courses are taught in cutting edge computer labs so students can learn and practice skills. Schedules offer a range of day, evening, and weekend classes.

## Career Information

Graduates of the **BS CIS – Cybersecurity** program are expected to qualify for such positions as law enforcement professionals, computer forensic specialists, data security analysts, systems security administrators, and network security administrators in government, business, information technology, and other industries.

For additional information, please visit the Bureau of Labor Statistics ([www.bls.gov](http://www.bls.gov)) or visit the Career Center in Simmons Hall, Room 301 ([www.uakron.edu/career/](http://www.uakron.edu/career/)).

## Transfer to the College of Applied Science and Technology

To be admitted to the College of Applied Science and Technology, a student must have a GPA of 2.0. A student can complete the transfer process through an appointment with an Academic Advisor in the college in which they reside.