The Cybersecurity Advanced Certificate program provides knowledge and skill set for students pursuing career opportunities in cybersecurity. With a hands-on approach to learning in this program, students acquire essential to cybersecurity technical knowledge relating to using and administering network devices and network operating systems, practice ethical hacking, and engage in information security systems analysis. Students also learn to script and code to monitor, protect against, contain, respond to and recover from cyberattacks.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Program Core</td>
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</tr>
<tr>
<td>CIS 103</td>
<td>Fundamentals of Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS 116</td>
<td>Operating System I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 255</td>
<td>Operating Systems II</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 101</td>
<td>Networking Essentials</td>
<td>3</td>
</tr>
<tr>
<td>or NET TEC 121</td>
<td>Internetworking I</td>
<td></td>
</tr>
<tr>
<td>COMPSFI 102</td>
<td>Information Security Essentials</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 202</td>
<td>Cybercrime and Incident Response</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 212</td>
<td>Scripting for Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 213</td>
<td>Ethical Hacking</td>
<td>3</td>
</tr>
<tr>
<td>NET TEC 122</td>
<td>Internetworking II</td>
<td>3</td>
</tr>
<tr>
<td>or NET TEC 240</td>
<td>Operating Systems/Server I</td>
<td></td>
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<tr>
<td>Program Electives</td>
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<tr>
<td>Select a minimum of 3 credit hours of program electives (p. 1)</td>
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<td>Total Hours</td>
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Program Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BUSINES 111</td>
<td>Introduction To Business</td>
<td>3</td>
</tr>
<tr>
<td>CIS 111</td>
<td>Computer Operations</td>
<td>3</td>
</tr>
<tr>
<td>CIS 142</td>
<td>C++ Object Oriented Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 144</td>
<td>Java Object Oriented Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 181</td>
<td>Web Development I/Basic Web Technologies</td>
<td>3</td>
</tr>
<tr>
<td>CIS 182</td>
<td>Web Development II/Client Side Scripting</td>
<td>3</td>
</tr>
<tr>
<td>CIS 242</td>
<td>C++ Object Oriented Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Java Object Oriented Programming II</td>
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</tr>
<tr>
<td>CIS 281</td>
<td>Web Development III/Server Side Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS 260</td>
<td>Computer Information Systems Field Project</td>
<td>3</td>
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<tr>
<td>CIS 265</td>
<td>Computer Information Systems Internship</td>
<td>3</td>
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<tr>
<td>COMPSFI 101</td>
<td>Networking Essentials</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 205</td>
<td>Cyber Forensics</td>
<td>3</td>
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<tr>
<td>COMPSFI 215</td>
<td>Information Security Domain</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 231</td>
<td>Internetworking Security</td>
<td>3</td>
</tr>
<tr>
<td>NET TEC 121</td>
<td>Internetworking I</td>
<td>3</td>
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<td>NET TEC 122</td>
<td>Internetworking II</td>
<td>3</td>
</tr>
<tr>
<td>NET TEC 240</td>
<td>Operating Systems/Server I</td>
<td>3</td>
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</tbody>
</table>

Pathway

This is an example course sequence for students interested in Cybersecurity. It does not represent a contract, nor does it guarantee course availability. If this pathway is followed as outlined, you will earn a Basic Certificate (BC) and Advanced Certificate (AC) in Cybersecurity.
Semester-by-Semester Program Plan for Full-Time Students

All plans can be modified to fit the needs of part-time students by adding more semesters.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Semester 1</strong></td>
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</tr>
<tr>
<td>CIS 116</td>
<td>Operating System I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 103</td>
<td>Fundamentals of Programming</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 101 or NET TEC 121</td>
<td>Networking Essentials or Internetworking I</td>
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<tr>
<td><strong>Total</strong></td>
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<tr>
<td><strong>Semester 2</strong></td>
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<tr>
<td>CIS 255</td>
<td>Operating Systems II</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 102</td>
<td>Information Security Essentials</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 202</td>
<td>Cybercrime and Incident Response</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>Semester 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPSFI 212</td>
<td>Scripting for Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>COMPSFI 213</td>
<td>Ethical Hacking</td>
<td>3</td>
</tr>
<tr>
<td>NET TEC 122 or NET TEC 240</td>
<td>Internetworking II or Operating Systems/Server I</td>
<td>3</td>
</tr>
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<td>Program Elective (p. 2)</td>
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<td>3</td>
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<td><strong>Total</strong></td>
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<td><strong>Total Hours</strong></td>
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<td>NET TEC 240</td>
<td>Operating Systems/Server I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Choose your courses with your College Advisor.

Information Security Analysts

Job Description

Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County.

Emsi earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

**Annual Wages**

- **Entry-Level 10th Percentile** $64,572
- **Median 50th Percentile** $107,916
- **Senior-Level 90th Percentile** $159,955

**Hourly Wages**

- **Entry-Level 10th Percentile** $31
- **Median 50th Percentile** $52
- **Senior-Level 90th Percentile** $77

Annual Job Openings

152 annual openings in Cook County

National Education Attainment

Here, you can see the level of education that people in this career complete.

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>% of Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high school diploma or less</td>
<td>0.00%</td>
</tr>
<tr>
<td>A certificate</td>
<td>7.16%</td>
</tr>
<tr>
<td>Some college</td>
<td>2.01%</td>
</tr>
<tr>
<td>An Associate degree</td>
<td>12.87%</td>
</tr>
<tr>
<td>A Bachelor's degree</td>
<td>75.16%</td>
</tr>
<tr>
<td>A Master's or Professional degree</td>
<td>2.80%</td>
</tr>
<tr>
<td>A Doctoral degree or more</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

77.96% continue their education beyond an associate degree

Careers

This program can prepare students for the jobs listed below. Click on each one to learn more, including average earnings, annual job openings, and how much education people in that field have. For additional guidance and resources on career options, current City Colleges students and alumni can contact the Career Services Office (https://www.ccc.edu/departments/Pages/Career-Services.aspx).