Cybersecurity, MS Interdisciplinary - Computer Engineering Track

The CPE program offers a Master of Science degree in Cybersecurity as part of an interdisciplinary program with the College of Science and the College of Business. The program requires 30 semester hours of graduate course work. There is no thesis option.

For this degree program, at least 50% of the coursework must be at the 600-level or above and a grade of B or better is required for all courses. All coursework must be approved by a faculty advisor.

Admission Requirements

Students must meet the minimum requirements for graduate school admissions as required by the UAH College of Graduate Studies.

Direct admission to the computer engineering track requires that a student hold an ABET-accredited Bachelor's degree in computer science or computer engineering. All potential applicants must demonstrate proficiency in the following foundation coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 211</td>
<td>INTRO COMPUTER PROG FOR ENGR</td>
<td>3</td>
</tr>
<tr>
<td>CPE 212</td>
<td>FUNDAMENTALS SOFTWARE ENGRG</td>
<td>3</td>
</tr>
<tr>
<td>CS 214</td>
<td>INTRO DISCRETE STRUCTURE</td>
<td>3</td>
</tr>
<tr>
<td>CS 317</td>
<td>INTRO DESIGN/ANALYSIS OF ALG</td>
<td>3</td>
</tr>
<tr>
<td>CPE 348</td>
<td>INTRO TO COMPUTER NETWORKS</td>
<td>3</td>
</tr>
<tr>
<td>CPE 431</td>
<td>INTRO COMPUTER ARCHITECTURE</td>
<td>3</td>
</tr>
<tr>
<td>CPE 434</td>
<td>OPERATING SYSTEMS</td>
<td>3</td>
</tr>
</tbody>
</table>

Applicants for graduate study must apply for admission to the Graduate School. More information about the admissions process may be found on the Graduate School Admission webpage (https://www.uah.edu/admissions/graduate/).

Degree Requirements

IS 692 (https://catalog.uah.edu/search/?P=IS%20692)/CPE 692 (https://catalog.uah.edu/search/?P=CPE%20692)/CS 692 (https://catalog.uah.edu/search/?P=CS%20692) is the capstone course and should be taken toward the end of the student’s program. Students must earn a grade of B- or better in the capstone course.

The program of study for the MS in Cybersecurity must include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 550</td>
<td>CYBERSECURITY MANAGEMENT</td>
<td>9</td>
</tr>
<tr>
<td>IS 663</td>
<td>COMPUTER FORENSICS</td>
<td></td>
</tr>
<tr>
<td>or CS 580</td>
<td>MOBILE DIGITAL FORENSICS</td>
<td></td>
</tr>
<tr>
<td>IS 692</td>
<td>CYBERSECURITY PRACTICUM</td>
<td></td>
</tr>
<tr>
<td>or CPE 692</td>
<td>CYBERSECURITY CAPSTONE</td>
<td></td>
</tr>
<tr>
<td>or CS 692</td>
<td>CYBERSECURITY CAPSTONE</td>
<td></td>
</tr>
<tr>
<td>CPE 549</td>
<td>INTRO TO CYBERSECURITY ENGINRG</td>
<td></td>
</tr>
<tr>
<td>CS 585</td>
<td>INTRO TO COMPUTER SECURITY</td>
<td></td>
</tr>
<tr>
<td>CPE 645</td>
<td>COMPUTER NETWORK SECURITY</td>
<td></td>
</tr>
<tr>
<td>CPE 646</td>
<td>MOBILE &amp; WIRELESS NETWORKS</td>
<td></td>
</tr>
<tr>
<td>CPE 649</td>
<td>ADV CYBERSECURITY ENGINEERING</td>
<td>15</td>
</tr>
</tbody>
</table>

Cybersecurity Electives

Select two courses from the following: 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>CPE 534</td>
<td>OPERATING SYSTEMS</td>
</tr>
<tr>
<td>CPE 647</td>
<td>UBIQUitous COMPUTING</td>
</tr>
<tr>
<td>CS 553</td>
<td>CLIENT/SERVER ARCHITECTURES</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>CS 617</td>
<td>DES &amp; ANALY OF ALGORITHM</td>
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<tr>
<td>CPE 648</td>
<td>ADVANCED COMPUTER NETWORKS</td>
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<tr>
<td>CS 565</td>
<td>NETWORK SECURITY</td>
</tr>
<tr>
<td>CS 650</td>
<td>SOFT’W ENGINEERING PROC</td>
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<tr>
<td>CS 670</td>
<td>COMPUTER NETWORKS</td>
</tr>
<tr>
<td>CS 685</td>
<td>COMPUTER SECURITY</td>
</tr>
<tr>
<td>CS 687</td>
<td>DATA BASE SYSTEMS</td>
</tr>
<tr>
<td>CS 690</td>
<td>ADVANCED OPERATING SYSTEMS</td>
</tr>
<tr>
<td>IS 560</td>
<td>NETWORKING &amp; IT INFRASTRUCTURE</td>
</tr>
<tr>
<td>IS 571</td>
<td>BUSINESS ANALYTICS &amp; AI</td>
</tr>
<tr>
<td>IS 577</td>
<td>NETWORK DEFENSE &amp; SECURITY</td>
</tr>
<tr>
<td>IS 640</td>
<td>DATA MGT AND DATA MINING</td>
</tr>
<tr>
<td>IS 670</td>
<td>BUSINESS CONTINGENCY PLANNING</td>
</tr>
<tr>
<td>IS 691</td>
<td>INFORMATION SYS STRATEGY &amp; APP</td>
</tr>
<tr>
<td>CPE 555</td>
<td>SECURE SOFTWARE DEV</td>
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<tr>
<td>CPE 557</td>
<td>SOFTWARE REVERSE ENGR</td>
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<tr>
<td>CPE 559</td>
<td>SYSTEMS SECURITY</td>
</tr>
<tr>
<td>CPE 590</td>
<td>SELECTED TOPICS IN COMP ENGR</td>
</tr>
<tr>
<td>CPE 690</td>
<td>SELECTED TOPICS COMPUTER ENGRG</td>
</tr>
<tr>
<td>CS 595</td>
<td>INDEPENDENT STUDY</td>
</tr>
<tr>
<td>CS 596</td>
<td>SPECIAL TOPICS</td>
</tr>
<tr>
<td>CS 597</td>
<td>SPECIAL TOPICS</td>
</tr>
<tr>
<td>CS 598</td>
<td>SPECIAL TOPICS</td>
</tr>
<tr>
<td>CS 695</td>
<td>INDEPENDENT STUDY</td>
</tr>
<tr>
<td>CS 696</td>
<td>SELECTED TOPICS IN CS</td>
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<tr>
<td>CS 795</td>
<td>INDEPENDENT STUDY</td>
</tr>
<tr>
<td>CS 796</td>
<td>ADVANCED SELECTED TOPICS</td>
</tr>
</tbody>
</table>

**Total Semester Hours: 30**

**Restrictions on Elective Courses**

1. Computer Engineering track students should take at least one elective course from CPE courses.
2. Students can take only one course between these courses.
   a. CS 670 and IS 560
   b. CS 685 and CPE 645
   c. CS 670 and CPE 646
   d. CS 687 and IS 640
3. At least half of the credit hours must be completed in courses numbered 600 or higher.
4. At least half of the credit hours must be CPE courses.
5. CPE 590, 690, CS 595, 596, 597, 598, 695, 696, 795, and 796 should be cybersecurity-related and require approval of advisor and approval of course instructor.