TECHNOLOGY, CYBERSECURITY AND POLICY - MASTER OF SCIENCE (MS)

The MS in Technology, Cybersecurity and Policy (TCP) offers students the opportunity to learn skills that allow them to master among the latest technologies associated with the internet's technology, cybersecurity and policy landscape. Additional foci include the incorporation of business skills and policy knowledge essential to achieving success in the companies driving today's rapidly changing high-tech world. TCP offers hands-on experience in world-class labs equipped with state-of-the-art technologies in some of the most sought-after areas in the internet arena.

Students can develop a degree plan focusing on the following emphasis areas:

- Cybersecurity
- Wireless Systems
- Policy
- Strategy and Management

For more information, visit the program's Master of Science in TCP (http://www.colorado.edu/itp/masters-degree) webpage.

Distance Education Option

Students can take individual courses toward a master's degree or graduate certificate through distance education (online). For more information, connect with the individual graduate program directly.

Bachelor's–Accelerated Master's Degree Program

Students may earn this degree as part of the Bachelor's–Accelerated Master's (BAM) degree program, which allows currently enrolled CU Boulder undergraduate students the opportunity to earn a bachelor's and master's degree in a shorter period of time.

For more information, see the Accelerated Master's tab for the associated bachelor's degree(s):

- Applied Mathematics - Bachelor of Science (BS) (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/applied-mathematics/applied-mathematics-bachelor-science-bsam/#acceleratedmastertext)
- Computer Science - Bachelor of Science (BS) (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/computer-science/computer-science-bachelor-science-bs/#acceleratedmastertext)
- Electrical and Computer Engineering - Bachelor of Science (BS) (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/electrical-computer-energy-engineering/electrical-computer-engineering-bachelor-science-bsec/#acceleratedmastertext)

Requirements

The following course requirements are subject to change; for the most current information, visit the program's Master of Science in Technology, Cybersecurity and Policy (https://www.colorado.edu/program/tcp) webpage.

Required Courses and Credits

The Master of Science in TCP requires, at minimum, 32 credit hours completed at the 5000 level or above. Students must complete the following course requirements: TCP Seminar (2 credit hours), core course requirements (12 credit hours), advanced electives (12 credit hours) and project/thesis (6 credit hours). See course list below for additional details.

Students must maintain a cumulative GPA of at least 3.00, and may elect to pursue a capstone or thesis for their culminating project.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar Requirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYBR 5000</td>
<td>Seminar in Technology, Cybersecurity and Policy</td>
<td>2</td>
</tr>
<tr>
<td>Core Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cybersecurity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYBR 5300</td>
<td>Introduction to CyberSecurity</td>
<td>3</td>
</tr>
<tr>
<td>Network Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYBR 5200</td>
<td>Introduction to Wireless Systems</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5010</td>
<td>Fundamentals of Data Communication</td>
<td></td>
</tr>
<tr>
<td>Policy, Risk Management and Strategy</td>
<td></td>
<td></td>
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<tr>
<td>CYBR 5400</td>
<td>Principles of Internet Policy</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5510</td>
<td>Technology: Commercial Strategy and Operations</td>
<td></td>
</tr>
<tr>
<td>EMEN 5010</td>
<td>Introduction to Engineering Management</td>
<td></td>
</tr>
<tr>
<td>EMEN 5020</td>
<td>Finance for Engineering Managers</td>
<td></td>
</tr>
<tr>
<td>EMEN 5030</td>
<td>Fundamentals of Project Management</td>
<td></td>
</tr>
<tr>
<td>EMEN 5031</td>
<td>Software Project Management</td>
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<tr>
<td>EMEN 5080</td>
<td>Ethical Decision-Making in Engineering Management</td>
<td></td>
</tr>
<tr>
<td>EMEN 5090</td>
<td>Marketing and Technology Ventures</td>
<td></td>
</tr>
<tr>
<td>EMEN 5094</td>
<td>Entrepreneurship for Engineers</td>
<td></td>
</tr>
<tr>
<td>Adversarial Thinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For current course options in this area, contact department.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYBR 5310</td>
<td>Immersive Cyber Defense</td>
<td></td>
</tr>
<tr>
<td>CYBR 5320</td>
<td>Cybersecurity Network Analytics</td>
<td></td>
</tr>
<tr>
<td>CYBR 5330</td>
<td>Digital Forensics</td>
<td></td>
</tr>
<tr>
<td>CYBR 5350</td>
<td>Security Auditing and Penetration Testing</td>
<td></td>
</tr>
<tr>
<td>CYBR 5830</td>
<td>Special Topics (Intro to Blockchain, Mathematics of Cryptosystems, Security Club Companion Course, Software Reverse Engineering, Business of FinTech, Implementing Cybersecurity Change, Implications of Cyberspace)</td>
<td></td>
</tr>
</tbody>
</table>

Wireless Networks
Technology, Cybersecurity and Policy - Master of Science (MS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CYBR 5215</td>
<td>Wireless and Cellular Systems</td>
<td></td>
</tr>
<tr>
<td>CYBR 5013</td>
<td>Fundamentals of System Administration and Virtualization</td>
<td></td>
</tr>
<tr>
<td>CYBR 5220</td>
<td>Wireless Local Area Networks</td>
<td></td>
</tr>
<tr>
<td>CYBR 5230</td>
<td>Wireless Systems Lab</td>
<td></td>
</tr>
<tr>
<td>CYBR 6200</td>
<td>Advanced Wireless Lab</td>
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</table>

**Policy, Risk Management and Strategy**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CYBR 5550</td>
<td>Designing for Defense</td>
<td></td>
</tr>
<tr>
<td>CYBR 5250</td>
<td>Technology Law and Policy Clinic</td>
<td></td>
</tr>
<tr>
<td>CYBR 5260</td>
<td>Seminar: Law and Economics of the Information Age</td>
<td></td>
</tr>
<tr>
<td>CYBR 5410</td>
<td>Telecommunications Law and Policy</td>
<td></td>
</tr>
<tr>
<td>CYBR 5420</td>
<td>Spectrum Management and Policy</td>
<td></td>
</tr>
<tr>
<td>CYBR 5480</td>
<td>Future of Video: Technology, Policy, and Economics</td>
<td></td>
</tr>
<tr>
<td>CYBR 5830</td>
<td>Special Topics (Cybersecurity Policy, Technology Ventures)</td>
<td></td>
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</tbody>
</table>

**Project or Thesis**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBR 5700</td>
<td>Graduate Projects I</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 6700</td>
<td>Graduate Projects II</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 6950</td>
<td>Master’s Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 32

**Time Limit**

All degree requirements must be completed within four years of the date of commencing coursework. Most full-time students complete the MS within 24 months.

**Sample Plan of Study**

**Cybersecurity**

The following is a sample two-year plan for a student interested in a cybersecurity focus.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year One</strong></td>
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</table>

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBR 5000</td>
<td>Seminar in Technology, Cybersecurity and Policy (seminar)</td>
<td>1</td>
</tr>
<tr>
<td>CYBR 5300</td>
<td>Introduction to CyberSecurity (core requirement)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5200</td>
<td>Introduction to Wireless Systems (core requirement)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5400</td>
<td>Principles of Internet Policy (core requirement)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 10

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBR 5000</td>
<td>Seminar in Technology, Cybersecurity and Policy (seminar)</td>
<td>1</td>
</tr>
<tr>
<td>CYBR 5510</td>
<td>Technology: Commercial Strategy and Operations (core requirement)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5330</td>
<td>Digital Forensics (advanced elective)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5350</td>
<td>Security Auditing and Penetration Testing (advanced elective)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 10

**Year Two**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBR 5700</td>
<td>Graduate Projects I (mandatory course requirement)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5830</td>
<td>Special Topics (advanced elective)</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Credit Hours 4-9

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBR 6700</td>
<td>Graduate Projects II (mandatory course requirement)</td>
<td>3</td>
</tr>
<tr>
<td>CYBR 5320</td>
<td>Cybersecurity Network Analytics (advanced elective)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 6

Total Credit Hours 30-35

**Dual Degree Programs**

The MS in TCP offers dual degree options with the following programs:

- Master of Business Administration (MBA) (catalog.colorado.edu/graduate/colleges-schools/business/programs-study/business-administration/business-administration-master-business-administration-mba/#dualdegreestext)
- Engineering Management - Master of Engineering (ME) (catalog.colorado.edu/graduate/colleges-schools/engineering-applied-science/programs-study/engineering-management/engineering-management-master-engineering-me)
- Juris Doctor (JD) (catalog.colorado.edu/law/programs-study/law-juris-doctor-laws-jd/#dtext)

Students pursuing a technology, cybersecurity and policy dual degree must be admitted to both schools/programs under their respective admissions procedures and standards. For more information, visit the program’s Concurrent & Dual Degrees (http://www.colorado.edu/itp/dual-degree) webpage.