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/#acceleratedmasterstext)
- Computer Science - Bachelor of Science (BS) (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/computer-science/computer-science-bachelor-science-bs/#acceleratedmasterstext)
- 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/#acceleratedmasterstext)

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>
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</thead>
<tbody>
<tr>
<td>CYBR 5000</td>
<td>Seminar in Technology, Cybersecurity and Policy</td>
<td>2</td>
</tr>
<tr>
<td>CYBR 5300</td>
<td>Introduction to CyberSecurity</td>
<td>3</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>3</td>
</tr>
<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>3</td>
</tr>
<tr>
<td>EMEN 5010</td>
<td>Introduction to Engineering Management</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5020</td>
<td>Finance for Engineering Managers</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5030</td>
<td>Fundamentals of Project Management</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5031</td>
<td>Software Project Management</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5080</td>
<td>Ethical Decision-Making in Engineering Management</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5090</td>
<td>Marketing and Technology Ventures</td>
<td>3</td>
</tr>
<tr>
<td>EMEN 5094</td>
<td>Entrepreneurship for Engineers</td>
<td>3</td>
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Adversarial Thinking 3
For current course options in this area, contact department.

Advanced Electives 12

Cybersecurity

- CYBR 5310 Immersive Cyber Defense
- CYBR 5320 Cybersecurity Network Analytics
- CYBR 5330 Digital Forensics
- CYBR 5350 Security Auditing and Penetration Testing
- CYBR 5830 Special Topics (Intro to Blockchain, Mathematics of Cryptosystems, Security Club Companion Course, Software Reverse Engineering, Business of FinTech, Implementing Cybersecurity Change, Implications of Cyberspace)

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

CYBR 5215    Wireless and Cellular Systems
CYBR 5013    Fundamentals of System Administration and Virtualization
CYBR 5220    Wireless Local Area Networks
CYBR 5230    Wireless Systems Lab
CYBR 6200    Advanced Wireless Lab

Policy, Risk Management and Strategy
CYBR 5550    Designing for Defense
CYBR 5250    Technology Law and Policy Clinic
CYBR 5260    Seminar: Law and Economics of the Information Age
CYBR 5410    Telecommunications Law and Policy
CYBR 5420    Spectrum Management and Policy
CYBR 5480    Future of Video: Technology, Policy, and Economics
CYBR 5830    Special Topics (Cybersecurity Policy, Technology Ventures)

Project or Thesis
CYBR 5700    Graduate Projects I (mandatory course requirement) 3
CYBR 5830    Special Topics (advanced elective) 1-6
Credit Hours 4-9

Spring Semester
CYBR 6700    Graduate Projects II (mandatory course requirement) 3
CYBR 5320    Cybersecurity Network Analytics (advanced elective) 3
Credit Hours 6
Total Credit Hours 30-35

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.

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<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>
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</tr>
<tr>
<td>CYBR 5400</td>
<td>Principles of Internet Policy (core requirement)</td>
<td>3</td>
</tr>
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Spring Semester
CYBR 5000  | Seminar in Technology, Cybersecurity and Policy (seminar)            | 1            |
| CYBR 5510  | Technology: Commercial Strategy and Operations (core requirement)    | 3            |
| CYBR 5330  | Digital Forensics (advanced elective)                                | 3            |
| CYBR 5350  | Security Auditing and Penetration Testing (advanced elective)        | 3            |

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/#dualdegreetext)
- 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.