

Cybersecurity, MS (Arlington)

Our Master of Science in Cybersecurity combines a solid understanding of information security technology with relevant knowledge from law, the social sciences, criminology, and management. The MS program is designed for working professionals and also recent graduates who want knowledge they can apply in workplaces to assess and manage information security risks effectively.

The cybersecurity program provides graduates with both the theoretical and experimental skills to perform professional cybersecurity duties. Due to the broad variety of positions that cybersecurity professionals may hold in the industry, our curriculum is designed to provide enough flexibility to our students to tailor their own careers appropriately.

The cybersecurity curriculum is intended to provide a comprehensive approach to cybersecurity, which includes both the technical skills and the contextual understanding that are fundamental to cybersecurity professions.

Concentration in Criminology

Cybercrime has evolved into more advanced techniques and sophisticated structures. Cybersecurity professionals are of vital importance in crime investigations, and for that reason, they need to have a well-rounded background and knowledge. The Master of Science in Cybersecurity provides an interdisciplinary foundation that includes computer science technical courses, complemented with the contextual knowledge courses required for a proper holistic approach to cybercrime. The optional concentration in criminology will offer MSCY students an opportunity to obtain the fundamental principles and the most important practices that criminal justice professionals use.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

| Code | Title | Hours |
|---|---|-------|
| Foundations | | |
| CY 5001 | Cybersecurity: Technologies, Threats, and Defenses ¹ | 4 |
| CY 5010 | Cybersecurity Principles and Practices | 4 |
| Technical Track | | |
| Complete 8 semester hours from the following: | | 8 |
| CY 5120 | Applied Cryptography | |
| CY 5130 | Computer System Security | |
| CY 5150 | Network Security Practices | |
| CY 5770 | Software Vulnerabilities and Security | |
| CY 6120 | Software Security Practices | |
| CY 6740 | Network Security | |
| CY 6760 | Wireless and Mobile Systems Security | |
| Contextual Track | | |
| Complete 8 semester hours from the following: | | 8 |
| CY 5200 | Security Risk Management and Assessment | |
| CY 5210 | Information System Forensics | |
| CY 5240 | Cyberlaw: Privacy, Ethics, and Digital Rights | |
| CY 5250 | Decision Making for Critical Infrastructure | |
| CY 6200 | Special Topics in IT Security Governance, Risk, and Compliance | |
| Capstone | | |
| CY 7900 | Capstone Project | 4 |

Electives

| Code | Title | Hours |
|---|-------------------------------------|-------|
| Complete 4 semester hours from the following: | | 4 |
| CRIM 6200 | Criminology | |
| CRIM 6202 | The Criminal Justice Process | |
| CRIM 6262 | Evidence-Based Crime Policy | |
| CS 5200 | Database Management Systems | |
| CS 5500 | Foundations of Software Engineering | |
| CS 5600 | Computer Systems | |

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| CS 5610 | Web Development |
| CS 5700 | Fundamentals of Computer Networking |
| CS 7580 | Special Topics in Software Engineering |
| CS 7805 | Complexity Theory |
| CY 5065 | Cloud Security Practices |
| CY 5120 | Applied Cryptography |
| CY 5130 | Computer System Security |
| CY 5150 | Network Security Practices |
| CY 5200 | Security Risk Management and Assessment |
| CY 5210 | Information System Forensics |
| CY 5240 | Cyberlaw: Privacy, Ethics, and Digital Rights |
| CY 5770 | Software Vulnerabilities and Security |
| CY 6120 | Software Security Practices |
| CY 6200 | Special Topics in IT Security Governance, Risk, and Compliance |
| CY 6740 | Network Security |
| CY 6760 | Wireless and Mobile Systems Security |
| CY 7790 | Special Topics in Security and Privacy |
| POLS 7341 | Security and Resilience Policy |
| PPUA 6503 | Managing People in Public and Nonprofit Sectors |

Concentration in Criminology

This optional concentration's required courses may count toward the contextual track, and its elective may count toward the major's elective area.

| Code | Title | Hours |
|--------------------------------|---|-------|
| Required | | |
| CRIM 6200 | Criminology | 4 |
| CRIM 6202 | The Criminal Justice Process | 4 |
| Complete one of the following: | | 4 |
| CRIM 6262 | Evidence-Based Crime Policy | |
| CY 5250 | Decision Making for Critical Infrastructure | |
| CRIM Elective ² | | |

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

¹ A student who demonstrates prior mastery of the learning outcomes for Cybersecurity: Technologies, Threats, and Defenses (CY 5001) may replace the course with elective coursework to meet the semester hours required for the degree. See the electives list for options.

² CRIM elective to be approved by director/associate director of MSCY.