

# Cybersecurity, M.S.

With an ever-growing demand for cybersecurity professionals, the M.S. in Cybersecurity prepares graduates to be leaders in the protection of data assets and analysis of potential threats to systems and networks.

The curriculum focuses on the techniques, policies, operational procedures, and technologies that secure and defend the availability, integrity, authentication, confidentiality, and non-repudiation of information and information systems and the development of secure software systems. The program is offered 100% online. The courses have been carefully blended to meet real-world requirements and to facilitate hands-on experiences that maximize a student's learning outcome in the program.

## Program Highlights

- Complete the program in five academic semesters
- Flexible online classes
- Become a highly-skilled, adaptable cybersecurity professional
- Predict and protect against cybercrime
- Participate in interactive case studies

## Program Requirements

A minimum grade of "C" is required for all courses with an institutional GPA of 3.0 or higher.

## Admission Requirements

In addition to the University graduate admission requirements described in the [Admissions section](#) of the catalog, the department bases decisions for regular admission on a holistic review of credentials in which the following criteria are used to assess the potential success of each applicant:

- Completion of an undergraduate degree with a minimum institutional GPA of 3.0
- Letter of intent (written by the applicant) to include the applicant's motivation for pursuing an M.S. in Cybersecurity degree, the extent of related work experience in the field, and future goals related to the attainment of an M.S. in Cybersecurity degree
- Submission of a resume
- Name and contact information of two individuals that can speak to the applicant's ability to successfully complete the program

Students entering the program with a degree other than Cybersecurity, Computer Science, or Information Technology and pursue the Data or Software & System Security track may be required to complete prerequisite courses in computing and programming. The department offers the following foundational courses to complete the prerequisite coursework:

- COP 5518 Foundations: Computing Essentials
- COP 5007 Foundations: Programming Essentials

## Cybersecurity Program Requirements

A minimum of 15 credits in coursework must be at the 6000-level. In addition, a minimum grade of "C" is required for all courses with an institutional GPA of 3.0 or higher.

Core Courses

|          |                          |   |
|----------|--------------------------|---|
| CIS 5775 | Cybersecurity Principles | 6 |
|----------|--------------------------|---|

|          |   |  |
|----------|---|--|
| ISM 6574 | Advanced Legal, Ethical, and Human Aspects of Cybersecurity |  |
|----------|---|--|

|                                    |  |    |
|------------------------------------|--|----|
| Coursework from the selected track |  | 12 |
|------------------------------------|--|----|

|           |  |   |
|-----------|--|---|
| Electives |  | 9 |
|-----------|--|---|

|  |  |  |
|--|--|--|
| Advisor approved elective at the 5000- or 6000-level |  |  |
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|----------|--------------------------|---|
| COT 6935 | Seminar in Cybersecurity | 3 |
|----------|--------------------------|---|

|                    |  |           |
|--------------------|--|-----------|
| <b>Total Hours</b> |  | <b>30</b> |
|--------------------|--|-----------|

Data Security Track

|          |                  |   |
|----------|------------------|---|
| COP 5725 | Database Systems | 3 |
|----------|------------------|---|

|  |  |   |
|--|--|---|
| Choose three courses from the following: |  | 9 |
|--|--|---|

|          |             |  |
|----------|-------------|--|
| CAP 6771 | Data Mining |  |
|----------|-------------|--|

|          |                  |  |
|----------|------------------|--|
| CAP 6772 | Data Warehousing |  |
|----------|------------------|--|

|          |                             |  |
|----------|-----------------------------|--|
| CAP 6789 | Advanced Big Data Analytics |  |
|----------|-----------------------------|--|

|          |   |  |
|----------|---|--|
| CET 6882 | Network Performance Monitoring and Security |  |
|----------|---|--|

|          |                   |  |
|----------|-------------------|--|
| CIS 6376 | Database Security |  |
|----------|-------------------|--|

|          |                   |  |
|----------|-------------------|--|
| CIS 6394 | Digital Forensics |  |
|----------|-------------------|--|

|          |               |  |
|----------|---------------|--|
| CIS 6625 | Data Security |  |
|----------|---------------|--|

|          |                         |  |
|----------|-------------------------|--|
| COP 5775 | Database Administration |  |
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|----------|--------------------|--|
| CTS 5458 | Data Visualization |  |
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Software & System Security Track

|          |                             |   |
|----------|-----------------------------|---|
| CEN 5079 | Secure Software Development | 3 |
|----------|-----------------------------|---|

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|--|--|---|
| Choose three courses from the following: |  | 9 |
|--|--|---|

|          |                                 |  |
|----------|---------------------------------|--|
| CEN 6074 | Software Assurance and Security |  |
|----------|---------------------------------|--|

|          |   |  |
|----------|---|--|
| CIS 5396 | Ethical Hacking and Penetration Testing |  |
|----------|---|--|

|          |                   |  |
|----------|-------------------|--|
| CIS 6394 | Digital Forensics |  |
|----------|-------------------|--|

|          |               |  |
|----------|---------------|--|
| CIS 6625 | Data Security |  |
|----------|---------------|--|

|          |                                      |  |
|----------|--------------------------------------|--|
| COP 5522 | Parallel and Distributed Programming |  |
|----------|--------------------------------------|--|

|          |                  |  |
|----------|------------------|--|
| COP 5725 | Database Systems |  |
|----------|------------------|--|

|          |                             |  |
|----------|-----------------------------|--|
| CNT 5407 | System and Network Security |  |
|----------|-----------------------------|--|

|          |                           |  |
|----------|---------------------------|--|
| CNT 6519 | Wireless Network Security |  |
|----------|---------------------------|--|

Security Management Track

|          |  |   |
|----------|--|---|
| ISM 6575 | Advanced Cybersecurity Risk Management | 3 |
|----------|--|---|

|  |  |   |
|--|--|---|
| Choose three courses from the following: |  | 9 |
|--|--|---|

|          |                  |  |
|----------|------------------|--|
| COP 5725 | Database Systems |  |
|----------|------------------|--|

|          |                         |  |
|----------|-------------------------|--|
| COP 5775 | Database Administration |  |
|----------|-------------------------|--|

|          |   |  |
|----------|---|--|
| GEB 5816 | MBA Foundations: Principles of Human Resources Management |  |
|----------|---|--|

|          |   |  |
|----------|---|--|
| GEB 5875 | MBA Foundations: Management Skills and Applications |  |
|----------|---|--|

|          |  |  |
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| ISM 6326 | Information Systems Auditing and Control |  |
|----------|--|--|

National Security Track

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|----------|-------------------|---|
| DSC 6045 | Homeland Security | 3 |
|----------|-------------------|---|

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|--|--|---|
| Choose three courses from the following: |  | 9 |
|--|--|---|

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|----------|-------------------------|--|
| CCJ 5018 | Crime and Public Policy |  |
|----------|-------------------------|--|

|          |   |  |
|----------|---|--|
| CCJ 6715 | Issues in Contemporary Criminal Justice |  |
|----------|---|--|

|          |                          |  |
|----------|--------------------------|--|
| CPO 5779 | Radicalism and Extremism |  |
|----------|--------------------------|--|

|          |                    |  |
|----------|--------------------|--|
| INR 6097 | Political Violence |  |
|----------|--------------------|--|

|          |           |  |
|----------|-----------|--|
| DSC 5020 | Terrorism |  |
|----------|-----------|--|

|          |            |  |
|----------|------------|--|
| INR 5129 | Statecraft |  |
|----------|------------|--|

|          |  |
|----------|--|
| INR 5330 | National Security Policy, Technology and Cyber |
| INR 5365 | Intelligence                                   |

\* GEB 5816 and GEB 5875 are 1.5 sh; students must take both courses

## Cybersecurity Certificate

Department: [Computer Science](#)

Method of Instruction: [Online](#)

Semester Hours: 12

This certificate program is focused on data and system security and prepares professionals to be leaders in the protection of data assets and analysis of potential threats to systems and networks. The program's courses have been carefully blended to meet real-world requirements and to facilitate hands-on experiences that maximize a student's learning outcome in the program.

Students entering the certificate program with a degree other than Cybersecurity, Computer Science, or Information Technology may be required to complete prerequisite courses in computing and programming. The department offers the following foundational courses to complete the prerequisite coursework:

- COP 5518 Foundations: Computing Essentials
- COP 5007 Foundations: Programming Essentials

Prospective students for this certificate must contact the departmental advisor for completing the certificate declaration before the drop/add period of the semester of completion. Students must complete all courses listed below within five years of admission into the program. They must also have a "C" or better in each course and a grade point average of 3.0 or higher for the combined courses.

|  |                             |   |
|--|-----------------------------|---|
| CIS 5775                               | Cybersecurity Principles    | 3 |
| CNT 5407                               | System and Network Security | 3 |
| Choose two courses from the following: |                             | 6 |
| CEN 5079                               | Secure Software Development |   |
| CIS 6376                               | Database Security           |   |
| CIS 6394                               | Digital Forensics           |   |
| COP 5725                               | Database Systems            |   |

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**Total Hours** **12**