

## Master of Science in Cybersecurity

### Old Dominion University

The Master of Science in Cybersecurity is a 30-credit hour non-thesis degree program. It is designed to prepare cyber security technology leaders. Graduates will develop skills and competencies in technical aspects of cyber security and will be prepared to assume responsibility for the management of cybersecurity projects and coordination of cyber operation teams. It also provides preparation for students desiring to pursue doctoral studies or teach cybersecurity courses in 2- and 4-year colleges and universities.

The program is offered in online format and with the option for local students to attend classes on campus. The required core courses focus on the fundamental knowledge of cybersecurity, covering advanced cybersecurity principles, techniques, and operations, as well as advanced topics in law, policy, management and leadership in cybersecurity. Students will have opportunities to choose five restricted electives to learn about different aspects of cybersecurity. The capstone course provides opportunities to synthesize and apply the knowledge and skills to solve real-world cybersecurity problems.

#### Foundational Core Courses (12 hours)

CYSE 600	Cybersecurity Principles	(3 credits)
CYSE 601	Advanced Cybersecurity Techniques and Operations	(3 credits)
CYSE 603	Advanced Cybersecurity Law and Policy	(3 credits)
CYSE 605	Leadership and Management in Cybersecurity	(3 credits)

Restricted Elective Courses (15 hours), to be selected in consultation with program advisor. A maximum of three courses can be selected at the 500 level.

CS 564	Networked Systems Security	(3 credits)
CS 565	Information Assurance	(3 credits)
CS/CYSE 566	Principle and Practice of Cyber Defense	(3 credits)
CS/CYSE 567	Software Reverse Engineering	(3 credits)
CYSE 520	Applied Machine Learning in Cybersecurity	(3 credits)
CYSE 525	Cybersecurity Strategy and Policy	(3 credits)
CYSE 526	Cyber War	(3 credits)
CYSE 595	International Aspects of Cybersecurity	(3 credits)
CYSE 595	Human Factors and Policy Management in Cybersecurity	(3 credits)
CYSE 595	Entrepreneurship in Cybersecurity	(3 credits)
CYSE 597	Tutorial Work in Special Topics in Cybersecurity	(3 credits)
CYSE 607	Advanced Digital Forensics	(3 credits)
CYSE 610	Advanced Cryptography	(3 credits)
CYSE 615	Mobile and Wireless Security	(3 credits)
CYSE 625	Advanced Ethical Hacking and Penetration Testing	(3 credits)
CYSE 635	AI Security and Privacy	(3 credits)
CYSE 697	Independent Study in Cybersecurity	(3 credits)
ECE/CYSE 516	Cyber Defense Fundamentals	(3 credits)
ECE/CYSE 519	Cyber Physical Systems Security	(3 credits)
IT 624	Information Technology Assurance Services	(3 credits)
IT 685	Introduction to Information Security	(3 credits)
MSIM/ENMA 670	Cyber Systems Engineering	(3 credits)

#### Capstone Course (3 hours)

CYSE 698	Master's Project	(3 credits)
----------	------------------	-------------

# Master of Science in Cybersecurity

## Old Dominion University

### Long-Term Class Schedule

Course	Format*	Title	Fall	Spring	Summer
CYSE 600	H	Cybersecurity Principles	✓		✓
CYSE 601	H	Advanced Cybersecurity Tech. & Operations		✓	
CYSE 603	H	Advanced Cybersecurity Law and Policy		✓	
CYSE 605	O	Leadership and Management in Cybersecurity	✓		
CS 564	O	Networked Systems Security		✓	
CS 565	O	Information Assurance		✓	
CS/CYSE 566	H	Principle and Practice of Cyber Defense		✓	
CS/CYSE 567	H	Software Reverse Engineering	✓		
CYSE 520	H	Applied Machine Learning in Cybersecurity	✓	✓	
CYSE 525	O	Cybersecurity Strategy & Policy	✓	✓	
CYSE 526	O	Cyber War	✓	✓	
CYSE 595	O	Cybersecurity Human Factors & Policy			✓
CYSE 595	O	Entrepreneurship in Cybersecurity			✓
CYSE 595	O	Human Factors & Policy Management in Cyber			✓
CYSE 595	O	International Aspects of Cybersecurity			✓
CYSE 607	O	Advanced Digital Forensics	✓		
CYSE 610	H	Advanced Cryptography	✓	✓	
CYSE 615	O	Mobile and Wireless Security	✓		
CYSE 625	H	Advanced Ethical Hacking and Pen Testing	✓		✓
CYSE 635	H	AI Security and Privacy	✓	✓	
CYSE 697	H, O	Independent Study in Cybersecurity	✓	✓	✓
ECE/CYSE 516	H	Cyber Defense Fundamentals	✓		
ECE/CYSE 519	H	Cyber Physical Systems Security		✓	
IT 624	H	Information Technology Assurance Services		✓	
MSIM/ENMA 670	H	Cyber Systems Engineering	✓		
CYSE 698	H, O	Master's Project	✓	✓	✓

\* The hybrid courses (**H**) support on-campus, synchronous online, and asynchronous online. Students have the option to attend the classes in the following ways:

- On campus: the instructor will teach the class in an on-campus classroom. You can join in-person to attend the class.
- Synchronous online: the lecture is real-time streamed through Zoom or Webex. You can join online at the scheduled time to attend the class virtually.
- Asynchronous online: the lectures are recorded. You can review the video and complete assignment anytime according to your schedule (without attending the meetings in-person or virtually).

\* The online courses (**O**) are offered in self-paced, asynchronous online format.

# Master of Science in Cybersecurity

## Old Dominion University

### Sample Plan of Study for Full-Time Students

Course	Credits	Category
<b>Fall I</b>		
CYSE 600 Cybersecurity Principles	3	Core
CYSE 605 Leadership and Management in Cybersecurity	3	Core
Restricted Elective	3	Elective
Restricted Elective	3	Elective
TOTAL 12 credits		
<b>Spring I</b>		
CYSE 601 Advanced Cybersecurity Techniques and Operations	3	Core
CYSE 603 Advanced Cybersecurity Law and Policy	3	Core
Restricted Elective	3	Elective
Restricted Elective	3	Elective
TOTAL 12 credits		
<b>Summer I</b>		
CYSE 698 Master's Project	3	Capstone
Restricted Elective	3	Elective
TOTAL 6 credits		

Total Required for Degree—30 credits

### Sample Plan of Study for Part-Time Students

Course	Credits	Category
<b>Fall I</b>		
CYSE 600 Cybersecurity Principles	3	Core
Restricted Elective	3	Core
TOTAL 6 credits		
<b>Spring I</b>		
CYSE 601 Advanced Cybersecurity Techniques and Operations	3	Core
Restricted Elective	3	Elective
TOTAL 6 credits		
<b>Fall II</b>		
CYSE 605 Leadership and Management in Cybersecurity	3	Core
Restricted Elective	3	Elective
TOTAL 6 credits		
<b>Spring II</b>		
CYSE 603 Advanced Cybersecurity Law and Policy	3	Elective
Restricted Elective	3	Elective
TOTAL 6 credits		
<b>Fall III</b>		
CYSE 698 Master's Project	3	Capstone
Restricted Elective	3	Elective
TOTAL 6 credits		

Total Required for Degree—30 credits