

## EXPECTED COURSE OFFERINGS CYBERSECURITY PROGRAM

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered *is subject to change* due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters. Courses may be offered at the Applied Physics Laboratory (A), Online (O), Virtual Live (VL), or as an Independent Study (IS), as indicated. Courses may also be offered in odd years (odd) or even years (even).

Course Number	Course Name	Summer	Fall	Spring
<b>Prerequisite Courses</b>				
605.201	Introduction to Programming Using Java	O	O	O
605.202	Data Structures	O	O	O
605.203	Discrete Mathematics		O	O
605.204	Computer Organization	O	O	O
<b>Foundation Courses</b>				
605.621	Foundations of Algorithms	O/VL	O	O
695.601	Foundations of Information Assurance	O	O/VL	O/VL
695.641	Cryptology	O	O	O/VL
<b>Focus Areas</b>				
Analysis Assured Autonomy Cyber Operations Networks Space Cyber Systems Independent Study				
<b>Courses by Focus Area</b>				
	<b>ANALYSIS</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.641	Cryptology	O	O	O/VL
695.642	Intrusion Detection	O	O	O
695.643	Introduction to Ethical Hacking	O	O	O

695.644	Computer Forensics		VL	
695.646	Engineering Runtime Malware Detection			VL
695.647	Cyber Threat Hunting and Intelligence		VL	
695.741	Information Assurance Analysis	O	O	O
695.742	Digital Forensics Technologies and Techniques		O	VL
695.744	Reverse Engineering and Vulnerability Analysis		O	O
695.749	Cyber Exercise			
605.728	Quantum Computation		O	
	<b>ASSURED AUTONOMY</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.631	AI for Cybersecurity	O		
695.634	Intelligent Vehicles: Cybersecurity for Connected and Autonomous Vehicles		VL	
695.637	Introduction to Assured AI and Autonomy		O	
695.715	Assured Autonomy		VL	
695.737	AI for Assured Autonomy			O
605.613	Introduction to Robotics		VL	VL
605.624	Logic: Systems, Semantics, and Models			O
605.636	Autonomic Computing			VL
605.649	Introduction to Machine Learning	O	O/VL	O/VL
605.746	Advanced Machine Learning	O		O
	<b>CYBER OPERATIONS</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.615	Cyber Physical Systems Security		O	
695.622	Web Security	O	O	O
695.643	Introduction to Ethical Hacking	O	O	O
695.741	Information Assurance Analysis	O	O	O
695.742	Digital Forensics Technologies and Techniques		O	VL
605.731	Survey of Cloud Computing Security	O		
	<b>NETWORKS</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.621	Public Key Infrastructure and Managing E-Security	VL	O	
695.622	Web Security	O	O	O

695.721	Network Security		O	VL
695.722	Covert Channels	O		
695.723	Advanced Web Security		O	
695.791	Information Assurance Architectures and Technologies	O		O
605.671	Principles of Data Communications Networks	O	O	A
605.674	Network Programming		O	
605.675	Protocol Design			
605.731	Survey of Cloud Computing Security	O		
605.771	Wired and Wireless Local and Metropolitan Area Networks		O	
635.673	Protecting Critical Infrastructure Against Cyber Attacks			O
	<b>SPACE CYBER</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.641	Cryptology	O	O	O/VL
695.642	Intrusion Detection	O	O	O
695.644	Computer Forensics		VL	
695.721	Network Security		O	VL
695.741	Information Assurance Analysis	O	O	O
695.742	Digital Forensics Technologies and Techniques		O	VL
695.744	Reverse Engineering and Vulnerability Analysis		O	O
695.791	Information Assurance Architectures and Technologies	O		O
605.674	Network Programming		O	
605.716	Modeling and Simulation of Complex Systems			VL
605.728	Quantum Computation		O	
675.641	Space Systems Cybersecurity		3VL(HW)	
	<b>SYSTEMS</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.601	Foundations of Information Assurance	O	O/VL	O/VL
695.611	Embedded Computer Systems-Vulnerabilities, Intrusions, and Protection Mechanisms		O	O
695.612	Operating Systems Security		VL	VL
695.613	Securing Industrial Control Systems		VL	VL
695.614	Security Engineering			VL

695.615	Cyber Physical Systems Security		O	
695.711	Java Security		O	
695.712	Authentication Technologies		VL	
695.715	Assured Autonomy		VL	
605.601	Foundations of Software Engineering	O/VL	O/VL	O/VL
605.609	DevOps and Secure Software Development	O	O	O
605.612	Operating Systems		O	O
605.621	Foundations of Algorithms	O/VL	O	O
605.704	Object-Oriented Analysis and Design	O	O	O
605.715	Software Development for Real-Time Embedded Systems		O	O
605.716	Modeling and Simulation of Complex Systems			VL
605.729	Formal Methods			VL
635.673	Protecting Critical Infrastructure Against Cyber Attacks			O
	<b>INDEPENDENT STUDY</b>	<b>Summer</b>	<b>Fall</b>	<b>Spring</b>
695.795	Capstone Project in Cybersecurity			O/VL
695.801	Independent Study in Cybersecurity I	IS	IS	IS
695.802	Independent Study in Cybersecurity II	IS	IS	IS
<i>605.xxx see the Computer Science Program; 705.xxx see the Artificial Intelligence Program; 601.xxx see the Computer Science full-time Program</i>				