Naval Postgraduate School
Master of Science in Computer Science
(Master of Science in Computer Science, NCAE Cyber Operations Specialization)
Program of Study

To qualify for a certificate of completion of the National Centers of Academic Excellence in Cybersecurity Program in Cyber Operations (NSA NCAE CO) certificate, students must complete or validate the following:

1. All core courses listed in Table 1.
2. All specialization courses required to meet mandatory CAE-CO knowledge unit requirements, as shown in Table 2,
3. At least four CAE-CO elective courses from Table 3 meeting optional knowledge unit requirements, as shown in Table 3.

The list given here is sufficient for a degree in Computer Science from the Naval Postgraduate School; however, it may be a subset of the courses required of certain students in the NPS MS in Computer Science program. Examples include Joint Professional Military Education courses required of many military students and additional courses needed to meet particular Navy Subspecialty P-code requirements.

Courses required to meet NCAE-CO knowledge units are highlighted.

Table 1. CAE-CO Program of study – core classes	
Course No.	Course Title
CS0810	Thesis Research
CS2011	Computing System Principles
CS3021	Intermediate Programming & Data Structures
CS3040	Low-Level Programming
CS3060	Database Systems
CS3070	Operating Systems
CS3101	Theory of Formal Languages and Automata
CS3140	Low-Level Programming II
CS3150	Design and Analysis of Algorithms
CS3200	Computer Architecture
CS3250	Intro to Cyber-Physical Systems
CS3310	Artificial Intelligence
CS3315	Introduction to Machine Learning and Big Data
CS3502	Computer Communications & Networks
CS3600	Introduction to Computer Security
CS4900	Technology and Transformation 1
CS4903	Research Methods in Computer Science
CS4924	Seminar Series in Computer Science and Cyber Operations
OS3307	Modeling Practices for Computing

Table 2. CAE-CO Program of Study – Mandatory Knowledge Units	
Course No.	Course Title
CS4600	Secure System Principles
CS4648	Advanced Cyber Munitions
CS4679	Advances in Cybersecurity Operations

Table 3. CAE-CO Optional Knowledge Unit Courses	
Course No.	Course Title
CS3004	Human Computer Interaction
CS3670	Secure Management of Systems
CS3690	Network Security
CS4538	Mobile Device and Wireless Security
CS4677	Computer Forensics
CS4678	Advanced Cyber Vulnerability Assessment
CY4710	Adversarial Cyberspace Operations
EC3800	Microprocessor-Based System Design
EC3740	Reverse Engineering in Electronic Systems