Center for Cybersecurity and Cyber Operations

AT A GLANCE

What is it?
The Center for Cybersecurity and Cyber Operations (C3O) is one of America's foremost centers for defense-related research and education in software security, Inherently Trustworthy Systems (ITC), Cybersecurity Defense, and the use of computational systems in both defensive and adversarial Cyber Operations.

How does it work?
Through teaching and research with non-local DoN and DoD civilians, C3O faculty keep apace of the rapidly evolving topics in cybersecurity and cyber operations. This feedback loop results in leading-edge research that both informs the evolution of courses, and guides students in solving cyber-related warfighting problems.

What will it accomplish?
C3O will continue to help define national strategies in cybersecurity and cyber operations research and education, and provide certifications in six areas of cybersecurity and cyber operations for DoN and DoD personnel.

Points of contact:
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Established in 1998, C3O serves as a hub for synergistically related classes, laboratory work and the research. Working with a student mix of experienced military officers and civilian students, NPS faculty and research staff address cyber-related issues of the Department of Defense and U.S. Government. C3O has set a standard of excellence in research and educational programs benefitting the DoN, DoD and U.S. Government in the following areas:

C3O Mission: To combine research and education to build one of the world's finest resources for military research and education in cybersecurity, cyber techniques, and cyber operations.

Research
C3O research includes projects on a wide variety of topics in cybersecurity and cyber operations that support military and government objectives dependent upon the operation of computer systems and networks, including:
- Automatic identification and patching of software flaws
- Ethics of cyber warfare
- High-frequency active internet topology mapping
- Network and topology deception
- Highly trustworthy systems
- Blockchain applications
- Vulnerability assessment of shipboard machine control systems
- Development and analysis of cybersecurity tools

Education and Curriculum Development
C3O is one of a small group of institutions that has three National Center of Academic Excellence in Cybersecurity (NCAE-C) designations:
Cyber Defense Education, Cyber Research, Cyber Operations

Certificates offered to both resident and distance learning students are:
- Cybersecurity Fundamentals
- Cybersecurity Defense
- Cybersecurity Adversarial Techniques
- Information Systems Security Engineer
- Applied Cyber Operations
- Cyber Operations Infrastructure

National Impact
The C3O has helped define national strategies in cybersecurity and cyber operations research and education. C3O cyber tools and course and laboratory material are used by many national repositories and by hundreds of colleges and universities. Most recently, C3O is participating in the quantification and measurement of cyber workforce competency.