

14 June 2013

EDUCATIONAL SKILL REQUIREMENTS FORM
Network Operations and Technology
SSC 6209
Curriculum# 386

1. Curriculum Number: 386
2. Curriculum taught at NPS
3. Students are Fully Funded
4. Curriculum Length in months: 18 with or without JPME
5. Months the program starts: SEP
6. APC Required: 344
7. Educational Skill Requirements for the *Network Operations and Technology/6209* curriculum have been coordinated with Community Managers.

Designator	OCM	POC	Date
111X	BUPERS-311	CDR Chase Patrick chase.patrick@navy.mil	30 Apr 13
112X	DCNO N133C/BUPERS-312	CDR Todd Nethercott todd.nethercott@navy.mil	4 Apr 13
113X	DCNO N131	Ms. Margarethe Fuller margarethe.fuller@navy.mil	30 Apr 13
120X	BUPERS-314	CDR Brett Hinson Brett.hinson@navy.mil	7 May 13
131X/132X	BUPERS-313	CDR David Whitehead david.g.whitehead@navy.mil	9 Apr 13
1510	NAVAIRSYSCOM AIR-7.3.6	LCDR Mark Angelo mark.angelo@navy.mil	7 May 13
1520	NAVAIRSYSCOM AIR-7.3.6	LCDR Chris Haas christopher.j.haas@navy.mil	7 May 13
180X	BUPERS-317	LCDR Shane Stoughton shane.stoughton1@navy.mil	30 Apr 13
181X	BUPERS-317	LCDR Andy Newsome andrew.newsome@navy.mil	30 Apr 13
182X	BUPERS-317	CDR Ken Demick kenneth.demick@navy.mil	30 Apr 13
183X	BUPERS-317	CAPT Sheryl Richardson sheryl.s.richardson@navy.mil	24 Apr 13

184X	BUPERS-317	LCDR Andy Newsome andrew.newsome@navy.mil	30 Apr 13
2300	BUPERS-315	CAPT Donna Jefcoat donna.m.jefcoat@navy.mil	23 May 13
3100	BUPERS-316	LT Danilo Meulener danilo.meulener@navy.mil	23 May 13
5100	BUPERS-316	CDR Jeff Deviney jeff.deviney@navy.mil	23 May 13
644X, 645X, 743X	BUPERS-319	LT Shane Walker shane.walker@navy.mil	1 May 13
XXX7	FTS	CDR Doug Howell douglas.howell@navy.mil	7 May 13
XXX5	SELRES	CDR Mark Brazelton mark.brazelton@navy.mil	23 May 13

8. Graduates will be able to identify and describe theories and concepts associated with data, information, information systems and networks (human and technological). They will demonstrate the ability to apply theories and technology associated with the physical, information and cognitive domains to enhance and improve military operations. Graduates will possess domain specific knowledge in Network Operations and the theories and technologies that enable networked military operations. This includes but is not limited to the ability to:

- Optimize C2 systems configurations to align with changes in the operational environment.
- Understand the critical nature of information in military planning and operations.
- Develop alternative configuration plans to cope with:
 - Anti-access/area denial and limited bandwidth, emission control, satellite loss and other C2-challenging situations
 - An intruded, degraded or compromised network environment
 - Varied terrestrial, celestial and meteorological environments
 - Prioritizing information needs across the continuum of operations
 - Developing and applying operational and contingency plans for usage and defense of information and information systems, and information assurance
 - Developing communications plans that exploit the full Radio Frequency (RF) and Electro Magnetic Spectrum (EMS) including communications activities operating in and through space.

Graduates will be able to compare and evaluate existing, emerging and innovative technological and theoretical approaches to military operations in terms of how information is acquired, encoded, stored, transmitted, managed, protected, displayed, and ultimately used.

Graduates will be able to evaluate and critique existing information policies, procedures and doctrine affecting military operations, and propose alternatives to seize and maintain information advantage.

Graduates will support these proposals by identifying their impact across the spectrum of military operations. Students will demonstrate their ability to incorporate concepts learned in each of the aforementioned skill requirements by choosing either a group research project or individual thesis to complete prior to graduation. In addition to completing a written project report or individual thesis, each student will demonstrate knowledge and skills through an oral presentation of their research.

Graduates will be able to relate information theories and information systems technologies to current and emerging human interfaces, operations, systems and underlying technologies of military C2 systems. All students will receive a common core of instruction, and complete one of three tracks of specialization in Network Operations, Decision Superiority, or Information Systems Management. Specific common core areas of study include but are not limited to:

- Networking (cloud computing concepts, large data management, RF-based and mobile) theory and applications
- Assured C2
- Cybersecurity and Information Assurance (IA) theory and applications
- Network, Enterprise, System and related user security
- Satellite and space communications systems
- Ship, Shore, Expeditionary, and National (e.g., GIG) RF theory and applications
- Analytical Decision Making and Process Change Management.

Specialization Tracks:

Network Operations:

This track will focus on technology employment and integration in operations. It emphasizes instruction on systems and technology architectures: design, protection, management and operation of cyber systems and the DoD GIG as they apply to military operations. Students will have knowledge of networks and their components, applied to all operational areas, in all environments (land, undersea, sea, air, space and cyberspace), at unclassified and classified levels, and understand and be able to employ the network as an agile warfighting

system. This will include knowledge of RF spectrum utilization in all military environments and phases of operation; unmanned, autonomous and unattended sensors and platforms; and industrial control systems.

Decision Superiority:

This track will focus on the mastery of data, information, knowledge and insights as fundamental to decisions. Students will examine tools, concepts of operation and practices that enable better informed and faster decisions throughout the range of military operations. Graduates will have a grasp of military C2, networks, knowledge management, human machine interface, technology change management, operations centers and use of information in warfare and information as warfare, to be able to apply problem solving skills to achieve mission objectives in GIG operational scenarios, to include a denied or compromised environment. This will include knowledge of RF spectrum utilization in all military environments and phases of operation; unmanned, autonomous and unattended sensors and platforms; and industrial control systems.

Information Systems Management:

This track will focus on the acquisitions and program management of information technology in support of sustainment to global and collaborative military operations. Students will examine acquisition methods/policies, enterprise investment strategies, change management considerations, system analysis, analytics, and intelligent design. Graduates will understand how to develop appropriate technical and acquisition documentation based on policy and best practices, perform financial, cost-benefit and trade-off analysis, and perform required lifecycle planning, programming, and budgeting actions for an Information Technology enterprise that keeps pace with our National Security Strategy.

APPROVED: *Kath S. Geller* 6-21-2013
OPNAV N2/N6 (MAS) [DATE]

APPROVED: *Jan E. Jager* 8 July 2013
INTERIM PRESIDENT, NPS [DATE]

FINAL APPROVAL: _____
OPNAV N15 [DATE]