



The crosswalk below has been developed below as a resource for community colleges and other educational institutions seeking to grant credit for prior learning to military veterans based on their military occupational specialty (MOS). For an accurate comparison between the Whatcom Community College courses that have been mapped and courses at your institution, scroll down to refer to the Course Outcomes chart at the end of the document.

[Link to the Course Outcomes chart](#)

Service Branch / Job Name	MOS	Computer Attributes of MOS	Whatcom Community College Courses	Generally Equivalent to ...
<b>AIR FORCE</b>				
<a href="#">Cyber Surety   View PDF</a>	AFSC-3D1X1	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Computer Systems Programming   View PDF</a>	AFSC-3D0X4	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Cyber Systems Operation   View PDF</a>	AFSC-3D0X2	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Cyber Transport Systems   View PDF</a>	AFSC-3D1X2	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Cyberspace System Operations   View PDF</a>	AFSC-1B4X1	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#">Operations Intelligence   View PDF</a>	AFSC-1N0X1	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Biomedical Equipment   View PDF</a>	AFSC-4A2X1	information technology, technician, database, database administration	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Security+ Windows Server Administration
<a href="#">Fusion Analyst   View PDF</a>	AFSC-1N4X1	computer network, database, electronic health and personnel records, information technology	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Security+ Windows Server Administration

**ARMY**

<a href="#">Signal Support Systems Specialist</a>	MOS-25U-001	business analytics, computer network, data analysis, database, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Nodal Network Systems Operator-Maintainer</a>	MOS-25N-002	network administrator	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Nodal Network Systems Operator-Maintainer</a>	MOS-25N-001	computer network, database, help desk, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#">Signals Intelligence Analyst</a>	MOS-35N-004	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Information Technology Specialist</a>	MOS-25B-003	computer networks, information technology, system administration, network administration, information assurance, security services, network operations, service desk management	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Electro-Magnetic Spectrum Manager</a>	MOS-25E-001	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Microwave Systems Operator-Maintainer   View PDF</a>	MOS-25P-002	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Satellite Communication Systems Operator-Maintainer</a>	MOS-25S-003	computer network, database, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Cryptologic Network Warfare Specialist</a>	MOS-35Q-002	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#"><u>Military Intelligence (MI) Systems Maintainer/Integrator</u></a>	MOS-35T-005	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Air Defense Command, Control, Communications, Computers and Intelligence Tactical Operations Center Enhanced Operator/Maintainer</u></a>	MOS-14J-002	computer network, database, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Multichannel Transmission Systems Operator-Maintainer</u></a>	MOS-25Q-002	computer network, database, help desk, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Counterintelligence Agent</u></a>	MOS-35L-005	computer network, data analysis, database, database administration, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Radio Operator-Maintainer</u></a>	MOS-25C-002	computer network, database, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Geospatial Intelligence Imagery Analyst</u></a>	MOS-35G-006	computer network, database, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#">Signals Collector/Analyst</a>	MOS-35S-005	computer network, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Security+ Windows Server Administration
<a href="#">Cable Systems Installer-Maintainer</a>	MOS-25L-003	computer network, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Security+ Windows Server Administration
<a href="#">Intelligence Analyst</a>	MOS-35F-005	analyst, information technology	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I	Computer Fundamentals A+ Software

**COAST GUARD**

<a href="#">Information Systems Management</a>	CGR-ISM-001	computer network, database, help desk, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Information Systems Technician</a>	CGR-IT-002	database administration, information technology, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Information Systems Management</a>	CGW-ISM-001	business analytics, computer network, data analysis, database, database administration, information technology, network analyst, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#">Electronics</a>	CGW-ELC-003	computer network, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Operations Systems</a>	CGW-OSS-001	computer network, help desk, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Marine Science Technician</a>	CGR-MST-003	technician, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Windows Server Administration A+ Hardware
<a href="#">Operations Specialist</a>	CGR-OS-002	database, help desk	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Windows Server Administration A+ Hardware
<a href="#">Intelligence Specialist</a>	CGR-IS-002	business intelligence, data analysis	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I	Computer Fundamentals A+ Software
<a href="#">Yeoman</a>	CGR-YN-004	computer network, database, electronic health and personnel records (PHI, PII), information technology	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I	Computer Fundamentals A+ Software





MARINE CORPS				
<a href="#">Information Assurance Technician   View PDF</a>	MCE-0689-001	business analytics, business intelligence, computer network, data analysis, database, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Electronics Maintenance Technician</a>	MCE-2862-001	computer network, help desk, information technology, network administrator, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Tactical Data Systems Technician</a>	MCE-5974-001	computer network, data analysis, database, database administration, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Technical Control Chief</a>	MCE-2823-001	computer network, database, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Electro-Optical Ordnance Repairer</a>	MCE-2171-001	computer network, information technology, database	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Security+ Windows Server Administration
<a href="#">Metrology Technician</a>	MCE-2874-001	computer network, technician, help desk, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 205, Computer Operating Systems II	Computer Fundamentals A+ Software Windows Server Administration





Navy				
<a href="#">Communications Intelligence Collection Operator</a>	NER-CTR-005	business analytics, business intelligence, computer network, data analysis, database, database administration, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Cryptologic Technician, Technical   View PDF</a>	NER-CTT-005	business analytics, business intelligence, computer network, data analysis, database, database administration, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Information Systems Technician   View PDF</a>	NER-IT-003	business analytics, business intelligence, computer network, database administration, technician, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Informational Professional Officer</a>	NWO-742X-004	computer network, data analysis, database, database administration, technician, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Information Warfare Officer</a>	NWO-744X-004	business intelligence, computer network, database, database administration, network administrator, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Intelligence Technician</a>	NWO-745X-004	computer network, network analyst, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware







<a href="#">Cryptography</a>	LDO-644X-004	computer network, data analysis, database, information technology, network administrator, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Intelligence</a>	LDO-645X-003	business analytics, business intelligence, computer network, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Meteorology/Oceanography</a>	LDO-646X-004	computer network, data analysis, database, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Aviation Electronics Technician (AT)</a>	NER-AO-004	computer network, help desk, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Aviation Electronics Technician (AT)</a>	NER-AS-005	computer network, help desk, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#">Aviation Maintenance Administrationman</a>	NER-AZ-004	computer network, data analysis, database, database administration, help desk, information technology, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware





<a href="#"><u>Cryptologic Technician, Administrative</u></a>	NER-CTA-005	computer network, data analysis, database, database administration, network security	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Cryptologic Technician, Interpretive</u></a>	NER-CTI-005	computer network, data analysis, database, database administration, health information technology, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Cryptologic Technician, Maintenance</u></a>	NER-CTM-005	computer network, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Cryptologic Technician Networks</u></a>	NER-CTN-002	business analytics, business intelligence, computer network, data analysis, database, database administration, help desk, information technology, network administrator, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Electronics Technician, (Communications)</u></a>	NER-ETR-002	computer network, database, database administration, help desk, information technology, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 116, Virtualization CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Introduction to Virtualization Windows Server Administration A+ Hardware
<a href="#"><u>Information Professional Officer</u></a>	LDO-642X-004	computer network, network analyst, network security, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security CIS 205, Computer Operating Systems II CIS 206, Computer Support I	Computer Fundamentals A+ Software Security+ Windows Server Administration A+ Hardware





<a href="#"><u>Intelligence Specialist</u></a>	NER-IS-004	business intelligence, data analysis, help desk, information technology, network systems	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security	Computer Fundamentals A+ Software Security+
<a href="#"><u>Personnel Specialist</u></a>	NER-PS-001	business analytics, business intelligence, data analysis, database, electronic health and personnel records (PHI, PII), information technology	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security	Computer Fundamentals A+ Software Security+
<a href="#"><u>Yeoman</u></a>	NER-YN-004	database, database administration, electronic health and personnel records (PHI, PII), information technology	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I CIS 110, Introduction to Computer Security	Computer Fundamentals A+ Software Security+
<a href="#"><u>Imagery Analysis Specialist</u></a>	MCE-0241-001	computer network	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I	Computer Fundamentals A+ Software
<a href="#"><u>Aviation Support Equipment Technician (AS)</u></a>	NER-AME-004	computer network	CIS 100, Computer Literacy CIS 105, Computer Operating Systems I	Computer Fundamentals A+ Software





<b>Whatcom Community College Course Number</b>	<b>WCC Course Name</b>	<b>Course Outcomes</b>	<b>Generally Equivalent to ...</b>
CIS 100	Computer Literacy	<ul style="list-style-type: none"><li>• Apply basic computer terminology and technological concepts to daily interactions with computers.</li><li>• Describe the evolution of the Internet.</li><li>• Develop a recommendation for the purchase of a computer based on its intended use (hardware, O/S, and application software).</li><li>• Explain the advantages of using a computer network.</li><li>• Use internet search tools.</li><li>• Describe common ethical dilemmas in the age of computers and the Internet (privacy, copyright, access to information, etc.)</li><li>• Describe sustainable e-waste practices and implications of improper e-waste disposal.</li></ul>	Computer Fundamentals
CIS 105	Computer Operating Systems I	<ul style="list-style-type: none"><li>• Describe the boot process and the basic interactions between hardware and software.</li><li>• Install and update an operating system.</li><li>• Perform the daily tasks involved in managing and troubleshooting operating systems.</li><li>• Use the command line to perform routine tasks.</li><li>• Identify and interpret system events logged on a system.</li><li>• Describe and demonstrate file security and file sharing methods.</li><li>• Backup, modify, and recover critical files.</li><li>• Carry out the recovery of a failed system.</li></ul>	A+ Software





<b>Whatcom Community College Course Number</b>	<b>WCC Course Name</b>	<b>Course Outcomes</b>	<b>Generally Equivalent to ...</b>
CIS 110	Introduction to Computer Security	<ul style="list-style-type: none"><li>● Explain and differentiate the security principles of confidentiality, integrity, and availability.</li><li>● Distinguish types of malware and attacks.</li><li>● Apply tools and techniques for vulnerability assessment.</li><li>● Implement host security.</li><li>● Explain the security function and purpose of network devices and technologies.</li><li>● Identify types of authentication and perform basic configuration.</li><li>● Distinguish types of cryptography and their uses.</li><li>● Implement basic mobile security.</li></ul>	Security +
CIS 116	Virtualization	<ul style="list-style-type: none"><li>● Set up and configure a virtual network.</li><li>● Troubleshoot virtual network issues.</li><li>● Secure virtual networks.</li><li>● Apply virtualization to the workplace.</li><li>● Implement disaster recovery.</li></ul>	Introduction to Virtualization
CIS 205	Computer Operating Systems II	<ul style="list-style-type: none"><li>● Manage a Windows Server environment.</li><li>● Administer configuration of Active Directory and related services.</li><li>● Summarize Active Directory design and account management methods.</li><li>● Implement Group Policy configuration and management.</li><li>● Employ Active Directory Certificate Services.</li><li>● Perform implementation of Internet Information Services for Web Services.</li><li>● Implement installation of Virtualized networks using Hyper-V.</li><li>● Conduct command line configuration and management using Core Server and PowerShell.</li></ul>	Windows Server Administrator





<b>Whatcom Community College Course Number</b>	<b>WCC Course Name</b>	<b>Course Outcomes</b>	<b>Generally Equivalent to ...</b>
CIS 206	Computer Support I	<ul style="list-style-type: none"><li>● Identify all parts of a basic Personal Computer.</li><li>● Discuss the functions and interactions of PC subsystems.</li><li>● Select quality PCs and constituent components based on performance and cost.</li><li>● Perform installation, replacement, and upgrades of PC hardware components and peripherals.</li><li>● Implement and troubleshoot a simple Local Area Network.</li><li>● Troubleshooting and repair faulty PC components and peripherals.</li><li>● Generate Help Desk reports.</li><li>● Use customer support skills and techniques.</li></ul>	A+ Hardware



**Military Branch: Air Force**

**Military Occupation: CYBER SURETY**

**Military Code: AFSC 3D0X3**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 3D073, Craftsman**

**AFSC 3D033, Apprentice**

**AFSC 3D053, Journeyman**

**AFSC 3D013, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Oct 13, Effective 28 Feb 13)**

**1. Specialty Summary.** Supervises or operates fixed and deployed information technology (IT) and telecommunications resources to monitor, evaluate and maintain systems, policy and procedures to protect clients, networks, data/voice systems and databases from unauthorized activity. Identifies potential threats and manages resolution of security violations. Enforces national, DoD and Air Force security policies and directives; employs hardware and software tools to enhance the security by installing, monitoring and directing proactive and reactive information protection and defensive measures to ensure Confidentiality, Integrity and Availability (CIA) of IT resources. Administers and manages the overall Information Assurance (IA) program to include Communications Security (COMSEC), Emissions Security (EMSEC) and Computer Security (COMPUSEC) programs. Related DoD Occupational Subgroup: 153000.

**2. Duties and Responsibilities:**

2.1. Conducts IA risk and vulnerability assessments; ensures enterprise IA policies fully support all legal and regulatory requirements and ensures IA policies are applied in new and existing IT resources. Identifies IA weaknesses and provides recommendations for improvement. Monitors enterprise IA policy compliance and provides recommendations for effective implementation of IT security controls.

2.2. Evaluates and assists IT activities. Makes periodic evaluation and assistance visits, notes discrepancies, and recommends corrective actions. Audits and enforces the compliance of IA procedures and investigates security-related incidents. Assists in conducting IT forensic investigations. Manages the IA program and monitors emerging security technologies and industry best practices.

2.3. Performs or supervises detection and protection activities using IA and IA-enabled tools. Responsible for IA oversight or management of national security systems during all phases of the IT life cycles. Ensures CIA of IT resources.



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□2.4. Operates and manages IA tools and IA-enabled tools. Integrates tools with other IT functions to protect and defend IT resources. Provides CIA by verifying IA controls are implemented in accordance with DoD and Air Force IA standards. Ensures appropriate administrative, physical, and technical safeguards are incorporated into all new IT resources through certification and accreditation and protects IT resources from malicious activity.

2.5. Installs, upgrades, configures and maintains IA tools and IA-enabled tools; develops scripts and macros to automate tedious tasks and ensure data survivability through IA controls.

□2.6. Performs COMSEC management duties in accordance with national and DoD directives. Maintains primary site account for all required physical and electronic COMSEC material. Issues all material to subordinate units and provides guidance and training to unit level COMSEC Responsible Officers. Conducts inspections to ensure COMSEC material is properly maintained and investigates and reports all COMSEC related incidents.

□2.7. Performs EMSEC or TEMPEST as it is otherwise known, duties in accordance with national and DoD TEMPEST standards. Denies unauthorized access to classified, and in some instances, unclassified information via compromising emanations within an inspectable space through effective countermeasure application. Ensures all systems and devices comply with national and DoD TEMPEST standards. Inspects classified work areas, provides guidelines and training, maintains area certifications, determines countermeasures; advises commanders on vulnerabilities, threats, and risks; and recommends practical courses of action.

□2.8. Combat Crew Communications (CCC) technicians train and equip airlift, bomber, early warning, reconnaissance, and tanker aircrews. CCC's areas of responsibility include but are not limited to Communications Security, Flight Information Publications, Identification, Friend or Foe/Selective Identification Feature, Combat Mission Folders, High Frequency, Milstar, Very Low Frequency/Low Frequency, aircrew training, and programming communications equipment. Support prepares aircrews to execute global conventional and strategic (nuclear) taskings from combatant commanders, Joint Chiefs of Staff (JCS), and the US Strategic Command (USSTRATCOM).

2.9. Manages, supervises, and performs planning and implementation activities. Manages implementation and project installation and ensures architecture, configuration, and integration conformity. Develops, plans, and integrates base communications systems. Serves as advisor at meetings for facility design, military construction programs and minor construction planning. Evaluates base comprehensive plan and civil engineering projects. Monitors status of base civil engineer work requests. Performs mission review with customers. Controls, manages, and monitors project milestones and funding from inception to completion. Determines adequacy and correctness of project packages and amendments. Monitors project status and completion actions. Manages and maintains system installation records, files, and indexes. Evaluates contracts, wartime, support, contingency and exercise plans to determine impact on manpower, equipment, and systems. AFECD, 31 October 2013 193

### 3. Specialty Qualifications:



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3.1. Knowledge. Knowledge is mandatory of: IT resources; capabilities, functions and technical methods for IT operations; organization and functions of networked IT resources; communications-computer flows, operations and logic of electromechanical and electronics IT and their components, techniques for solving IT operations problems; and IT resources security procedures and programs including Internet Protocol and basic software scripting.

3.2. Education. For entry into this specialty, completion of high school is mandatory. Additional courses in advanced mathematics, computer science and networking is desirable. Experience in systems administration in an UNIX, Linux/MacOS, or Windows environment and/or software development, testing, and quality assurance is desired. Network+ certification or equivalent is desirable.

3.3. Training. For award of AFSC 3D033, completion of Cyber Surety initial skills course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 3D053. Qualification in and possession of AFSC 3D033. Experience performing IA functions and/or activities.

3.4.2. 3D073. Qualification and possession of AFSC 3D053. Experience supervising IA functions and/or activities.

3.5. Other. The following are mandatory as indicated:

3.5.1. See attachment 4 for additional entry requirements.

3.5.2. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.3. Specialty routinely requires work in the networking environment. For award and retention of AFSCs 3D033/3D053/3D073, must attain and maintain a minimum Information Assurance Management Level I certification according to DoD 8570.01-M, *Information Assurance Workforce Improvement Program*. 3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 3D033/53/73, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management*, is mandatory.

**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret security clearance has been granted according to AFI 31-501.

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**Military Branch: Air Force**

**Military Occupation: COMPUTER SYSTEMS PROGRAMMING**

**Military Code: AFSC 3D0X4**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 3D074, Craftsman**

**AFSC 3D034, Apprentice**

**AFSC 3D054, Journeyman**

**AFSC 3D014, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Jan 12)**

**1. Specialty Summary.** Supervises and performs as computer analyst, coder, tester and manager in the design, development, maintenance, testing, configuration management, and documentation of application software systems, client-server, and web-enabled software and relational database systems critical to warfighting capabilities. Related DoD Occupational Subgroup: 153200.

**2. Duties and Responsibilities:**

2.1. Develops standardized tools and interfaces in accordance with Air Force Network Operations (AFNETOPS) guidance to transform raw data into actionable C2 information. Develops and implements policy to enable effective information discovery, indexing, storage, life-cycle management, retrieval, and sharing in a collaborative enterprise information environment. Harnesses capabilities of systems designed to collect, store, retrieve, process and display data to ensure information dominance.

2.2. Ensures compliance with DoD directives and standards for security and interoperability. Protects operating systems, application software, files, and databases from unauthorized access to sensitive information, or misuse of communication-computer resources.

2.3. Determines, analyzes, and develops requirements for software systems through interpreting standards, specifications, and user needs as a system analyst. Determines, designs, and develops data requirements, database structure, process flow, systematic procedures, algorithms, and file structures to implement and maintain software systems using software engineering techniques. Works with systems using software methodologies such as distributed processing, systems networking, advanced information storage and retrieval, and management techniques. Determines and recommends the most reasonable approach in designing new systems or modifying existing systems. Develops and maintains system specifications. Conducts and participates in system reviews and technical interchanges. Selects



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appropriate software development tools. Explores commercial off-the-shelf options to satisfy user requirements.

2.4. Translates system specifications and requirements into program code and database structures, implements designed functionality as software coders. Analyzes output products and debugs source code to isolate and correct errors in program logic, syntax, and data entry, and to ensure accuracy and efficiency. Conducts code reviews and unit-level testing. Develops and maintains unit-level test plans. Arranges test data and routines. Modifies existing programs to correct program errors or modifies existing functionality or interface. Prepares system graphical descriptions, standard language statements, workload data, and presents and proposes cost. Develops and maintains documentation such as program maintenance manuals and operational guides.

2.5. Designs, develops, maintains, and executes test plans for formal qualification testing, system integration testing, regression testing and verification, validation and acceptance testing as software testers. Conducts test events. Analyzes software system requirement documents. Develops and maintains test data. Performs analysis of test data, determines test results and develops test reports. Makes recommendations to release authorities concerning verifiability, validity, conformance, and interoperability of software systems.

2.6. Designs, develops, maintains, and executes processes to manage software or database components, specifications, test plans, procedures and results, and revision history applicable to a software system to ensure systems in use meet user requirements as software configuration managers. Controls software components at all times to ensure availability and stability of documented baselines. Prepares and manages processes for reporting deficiencies and requesting changes to software components or systems. Manages change packages through analysis and development efforts ensuring testing is performed and documentation is created or updated as required. Conducts reviews of proposed change packages by the user community and control authorities. Prioritizes deficiency reports and change requests using guidance from the user community and control authorities. Prepares and maintains software system baseline documentation and procedures. Prepares, packages, and documents deliverable products.

2.7. As software project manager, interacts with and provides oversight for software system developers and maintainers. Develops and prepares system requirements and proposals. Analyzes requests for information. Prepares documentation of proposal specifications and programs. Organizes system study teams and conducts briefings. Conducts and participates in design reviews and technical interchanges between developers and user representatives. Plans, conducts and reports on the results of system acceptance tests. Manages or participates in the contract management, software quality assurance, or quality assurance evaluation process. AFECD, 31 October 2013 195

2.8. Manages, supervises, and performs planning and implementation activities. Manages implementation and project installation and ensures architecture, configuration, and integration conformity. Develops, plans, and integrates base communications systems. Serves as advisor at meetings for facility design, military construction programs and minor construction planning. Evaluates

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base comprehensive plan and civil engineering projects. Monitors status of base civil engineer work requests. Performs mission review with customers. Controls, manages, and monitors project milestones and funding from inception to completion. Determines adequacy and correctness of project packages and amendments. Monitors project status and completion actions. Manages and maintains system installation records, files, and indexes. Evaluates contracts, wartime, support, contingency and exercise plans to determine impact on manpower, equipment, and systems.

### **3. Specialty Qualifications:**

3.1. Knowledge. Knowledge is mandatory of system capabilities, limitations, and programming logic; techniques and procedures of systems analysis and design; related information processing devices and systems; C-CS; software methodologies; methods of editing input and output data; configuration management techniques; security practices; customer relations; application of mathematical and analytical concepts to process problems within a C-CS; and computer program editing and testing techniques.

3.2. Education. For entry into this specialty, completion of high school is mandatory. Additional courses in algebra, geometry, computer science and computer programming is desirable.

3.3. Training. For award of AFSC 3D034, completion of a Computer Systems Programming initial skills course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 3D054. Qualification in and possession of AFSC 3D034. Experience performing programming functions such as designing, coding, testing, or documenting software.

3.4.2. 3D074. Qualification in and possession of AFSC 3D054. Experience performing or supervising one of the functions of programming, such as preparing system requirements, developing high-level or detailed designs, translating designs into code, testing, configuration management, or project management.

3.5. Other. The following are mandatory as indicated:

3.5.1. A minimum score of 71 on the Air Force Electronic Data Processing Test.

3.5.2. See attachment 4 for additional entry requirements.

3.5.3. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 3D034/54/74, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management*, is mandatory.



**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret security clearance has been granted according to AFI 31-501.

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**Military Branch: Air Force**

**Military Occupation: CYBER SYSTEMS OPERATIONS**

**Military Code: AFSC 3D0X2**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 3D072, Craftsman**

**AFSC 3D032, Apprentice**

**AFSC 3D052, Journeyman**

**AFSC 3D012, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Oct 13, Effective 28 Feb 13)**

**1. Specialty Summary.** Installs, supports and maintains servers or other computer systems and plans for responding to service outages and interruptions to network operations. Administers server-based networked systems, distributed applications, network storage, messaging, and application monitoring required to provision, sustain, operate and integrate cyber networked systems and applications in garrison and at deployed locations. Core competencies include: server operating systems, database administration, web technologies, systems-related project management and supervising computer operators as well as consultant for computer-based problems beyond the knowledge of Client Systems technicians. Supports identification, reconnaissance and exploitation of vulnerabilities while enhancing capabilities within cyber environments to achieve desired affects. Related DoD Occupational Subgroup: 153100.

**2. Duties and Responsibilities:**

2.2. Provides core services by designing, configuring, installing, and managing data services at the operating system and server application level. Provides directory services utilizing dynamically-assigned IP addresses, domain name server, storage area network, and electronic messaging resources. Manages secure authentication methods utilizing public key infrastructure (PKI) technologies and procedures. Standardizes user privileges and system settings using automated deployment tools such as group policy objects (GPO) system management server. Implements security fixes, operating system patches, and antivirus software. Develops, tests, and implements local restoral and contingency operations plans.



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Processes and reviews C4 systems requirement documentation, telecommunication service requests, status of acquisition messages, and telecommunication service orders. Performs strategic and budget planning for networks.

2.3. Performs system resource management, manages system accounts, performs system-wide backups and data recovery, and load and capacity planning and management. Administers: classified and unclassified message traffic via electronic mail systems, database operations, implements conversions, and investigates problems in database environment. Ensures continuing systems operability by providing ongoing optimization and problem solving support. Applies computer security policies to safeguard systems and information. Categorizes, isolates, and resolves system problems. Performs fault isolation by validating, isolating, correcting faults, and verifying service restoral with customers. Processes, documents and coordinates resolution of trouble calls from lower support echelons. Processes scheduled and authorized outages. Submits outage reports in response to unscheduled outages.

2.4. Implements security updates and patches to include: Information Assurance Vulnerability Assessments (IAVA), C4 Notice to Airman (C4 NOTAM), Time Compliance Network Orders (TCNO), Combat Information Transport System (CITS), Time Compliance Technical Order (TCTO), operating system patches, and antivirus software. Implements and enforces national, DoD, and Air Force security policies and directives. Performs proactive security functions to deter, detect, isolate, contain, and recover from information system and network security intrusions. Performs system sanitation resulting from Classified Message Incidents (CMIs).

2.5. Performs and supports information warfare operations within strictly controlled parameters and provides real-time intrusion detection and firewall protection for all IT resources. Researches latest system threats to develop and test tactics, techniques and procedures (TTPs) for both defensive and offensive information operations. Employs developed TTPs on Air Force and DoD computer networks to exploit enemy information systems and defend against hostile information operations. Identifies, analyzes, targets, and exploits adversary's network operations and systems within specifically defined guidelines and rules of engagement. Analyzes risks and/or vulnerabilities and takes corrective action to mitigate or remove them.

2.6. Reviews and implements C4 systems requirements. Performs strategic and budget planning for systems hardware and software. Coordinates and implements system service level agreements and memorandum of understanding with user agencies.

2.7. Manages, supervises, and performs planning and implementation activities. Manages implementation and project installation and ensures architecture, configuration, and integration



conformity. Develops, plans, and integrates base communications systems. Serves as advisor at meetings for facility design, military construction programs and minor construction planning. Evaluates base comprehensive plan and civil engineering projects. Monitors status of base civil engineer work requests. Performs mission review with customers. Controls, manages, and monitors project milestones and funding from inception to completion. Determines adequacy and correctness of project packages and amendments. Monitors project status and completion actions. Manages and maintains system installation records, files, and indexes. Evaluates contracts, wartime, support, contingency and exercise plans to determine impact on manpower, equipment, and systems. AFECDC, 31 October 2013 191

### **3. Specialty Qualifications:**

3.1. Knowledge. Knowledge is mandatory of: Cyber systems elements; capabilities, functions, and technical methods for system operations.

3.2. Education. For entry into this specialty, completion of high school is mandatory. Additional courses in computer and information systems technology is desirable. Network+ certification or equivalent is desirable.

3.3. Training. For award of AFSC, completion of Cyber Systems Operations initial skills course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 3D052. Qualification in and possession of AFSC 3D032. Experience in functions such as system operations, micro- and multi-user technical support, system restoration, resource counting, or security.

3.4.2. 3D072. Qualification in and possession of AFSC 3D052. Experience supervising one of the following functions: analysis of system failure and restoration, C-CS operations, command and control systems support, system administration, and resource management.

3.5. Other. The following are mandatory as indicated:

3.5.1. See attachment 4 for additional entry requirements.

3.5.2. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.3. Specialty routinely requires work in the networking environment. For award and retention of AFSCs 3D032/3D052/3D072, must attain and maintain a minimum Information Assurance Technical Level II certification according to DoD 8570.01-M, *Information Assurance Workforce Improvement*





*Program.* 3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 3D032/52/72, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management*, is mandatory.

**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret clearance has been granted according to AFI 31-501.

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**Military Branch: Air Force**

**Military Occupation: COMPUTER SYSTEMS PROGRAMMING**

**Military Code: AFSC 3D1X2**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 3D172, Craftsman**

**AFSC 3D132, Apprentice**

**AFSC 3D152, Journeyman**

**AFSC 3D112, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Oct 13, Effective 28 Feb 13)**

**1. Specialty Summary.** Deploys, sustains, troubleshoots and repairs standard voice, data and video network infrastructure systems, IP detection systems and cryptographic equipment. Performs, coordinates, integrates and supervises network design, configuration, operation, defense, restoration, and improvements. Analyzes capabilities and performance, identifies problems, and takes corrective action. Fabricates, terminates, and interconnects wiring and associated network infrastructure devices. Related DoD Occupational Subgroups: 115000 and 162200.

**2. Duties and Responsibilities:**

2.1. Provides mission critical voice, data and video services. Installs, upgrades, replaces, configures and maintains systems/circuits/IP-based intrusion detection systems that access military, Federal and commercial networks. Manages infrastructure devices and systems using the latest approved software tools.

2.2. Deploys and operates expeditionary communications systems. Uses agile logistics support channels to sustain continuous network operations. Removes, repairs and replaces assemblies and subassemblies to optimally sustain voice, data and video networks.

2.3. Establishes priorities, maintains, tests, troubleshoots, and repairs network systems equipment and circuits utilizing tools and test equipment. Isolates malfunctions using diagnostic software, technical data, block diagrams, voltage and waveform measurements, and other tests requiring specialized test equipment.



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2.4. Monitors performance of systems and circuits. Coordinates with coalition forces, DoD agencies and other service providers to analyze and isolate performance faults and implement corrective actions. Checks equipment for serviceability and performs preventive maintenance. Isolates faults by coordinating with commercial service providers and depots to test system components and assemblies.

2.5. Maintains and administers network and circuit databases, records and forms. Interprets sketches and layout drawings for placement of distribution systems. Coordinates request for service orders. Reviews, recommends, and implements changes to communications-computer systems installations records (CSIR), technical data, engineering drawings, and equipment wiring diagrams. Updates and verifies entries on system, facility, maintenance, and inspection records. Initiates, tracks, and maintains shipping, receiving, supply, and equipment documents.

2.6. Conducts periodic inspections of systems installations and repair activities. Interprets inspection reports and implements corrective actions, documents inspection and maintenance actions.

2.7. Reviews and maintains operational measurement reports and analyzes network utilization. Ensures equipment and components meet installation practice technical order and accepted commercial installation specifications.

2.8. Applies communications security programs to include physical, cryptographic, transmission, and emission security. Develops and ensures compliance with safety standards and instructions.

2.9. Manages, supervises, and performs planning and implementation activities. Manages implementation and project installation and ensures architecture, configuration, and integration conformity. Develops, plans, and integrates base communications systems. Serves as advisor at meetings for facility design, military construction programs and minor construction planning. Evaluates base comprehensive plan and civil engineering projects. Monitors status of base civil engineer work requests. Performs mission review with customers. Controls, manages, and monitors project milestones and funding from inception to completion. Determines adequacy and correctness of project packages and amendments. Monitors project status and completion actions. Manages and maintains system installation records, files, and indexes. Evaluates contracts, wartime, support, contingency and exercise plans to determine impact on manpower, equipment, and systems.

### **3. Specialty Qualifications:**

3.1. Knowledge. Knowledge of electronic and network principles, information assurance, telephony, copper and fiber-optic transmission principles, cryptographic techniques, network system installation practices, project and circuit diagram interpretation, test equipment, special tools, and management practices is mandatory.



3.2. Education. For entry into this specialty, completion of high school is mandatory. Additional courses in mathematics, computer science or information technologies is desirable. Network+ certification is desirable.

3.3. Training. For award of AFSC 3D132, completion of Cyber Transport initial skills course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 3D152. Qualification in and possession of AFSC 3D132. Also, experience in installation, maintenance, and repair of voice, data and video network infrastructure and cryptographic equipment. AFECD, 31 October 2013 201

3.4.2. 3D172. Qualification in and possession of AFSC 3D152. Also, experience in supervising installation, maintenance, and repair of voice, data and video network infrastructure and cryptographic equipment.

3.5. Other: The following are mandatory as indicated:

3.5.1. For entry into this specialty:

3.5.1.1. Normal color vision as defined in AFI 48-123, *Medical Examinations and Standards*.

3.5.1.2. Must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, *Vehicle Operations*.

3.5.1.3. See Attachment 4 for additional entry requirements.

3.5.2. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.3. Specialty routinely requires work in the networking environment. For award and retention of AFSCs 3D132/3D152/3D172, must attain and maintain a minimum Information Assurance Technical Level II certification according to DoD 8570.01-M, *Information Assurance Workforce Improvement Program*.

3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 3D152/72, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management* is mandatory.

**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret security clearance has been granted according to AFI 31-501.



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**Military Branch: Air Force**

**Military Occupation: CYBERSPACE DEFENSE OPERATIONS**

**Military Code: AFSC 1B4X1**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 1B471, Craftsman**

**AFSC 1B431, Apprentice**

**AFSC 1B451, Journeyman**

**AFSC 1B411, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Oct 13, Effective 28 Feb 13)**

**1. Specialty Summary.** Performs duties to develop, sustain, and enhance network capabilities to defend national interests from attack and to create effects in cyberspace to achieve national objectives. They enable net-centric command and control (C2) systems to synchronize cross-domain attack operations and de-conflict friendly use of cyberspace. They conduct network attack, network defense, and network exploitation operations using on-net tools, tactics, techniques and procedures to achieve COCOM and national objectives. They will partner with Joint and coalition services to detect, deny, disrupt, deceive, and mitigate adversarial access to sovereign national networks and systems. The duties performed by Cyberspace Defense Operators include: operating cyberspace warfare systems; performing technical analysis of networks and systems in support of national level objectives. Related DoD Occupational Subgroup: None.

**2. Duties and Responsibilities:**

2.1. Directs personnel and cyberspace warfare operations. Selects and employs surveillance, combat, reporting and network management systems. Interprets directives into specific guidance and procedures for operator actions. Develops and executes operations plans to ensure positive control of assigned resources. Evaluates operational readiness of communications, sensors, intrusion detection, and related support equipment. Coordinates with other operators performing weapons control, surveillance, and network activities. Advises commander on readiness of capabilities, status reports, training exercises, and evaluation results.

2.2. Develops and executes tactics, techniques, and procedures (TTP) in support of cyberspace full spectrum operations. Analyzes national defense guidance and objectives to create operational policies. Implements policy through development of TTPs to execute assigned weapons and C2 capabilities.



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Plans, conducts, and evaluates exercises to enhance operational readiness. Ensures interoperability of assigned weapons systems with joint/coalition partners. Establishes procedures and monitors implementation of programs, policies, and plans. Implements operational TTPs with DoD, allied forces, and civil authorities.

2.3. Establishes performance standards, trains and conducts evaluations to ensure personnel are proficient, qualified, and certified. Ensures units meet operational readiness goals and adhere to operational procedures. Coordinates with other agencies to ensure resources are adequate to accomplish missions.

2.4. Participates in research, development and operational testing and evaluation to determine new capabilities and modifications to existing systems. Assesses and reverse engineers network nodes and infrastructure devices; to include operating systems and software applications to determine capabilities, functionalities, limitations and vulnerabilities. Assists in writing technical requirements, analyzing equipment specifications, and developing criteria to ensure operational effectiveness.

2.5. Performs network attack activities to include effects gained from emerging technology such as: disruption, data manipulation, degradation, destruction and denial of C2 while maintaining operational situational awareness. Network warfare operations include activities on an adversary's communication infrastructure and equipment.

2.6. Conducts network defense operations of friendly forces and vital interests from hostile attacks. Defense techniques consist of active and passive cyberspace operations including employment of defensive measures designed to deny attacking adversaries or reduce their effectiveness. Network defense includes measures to preserve, protect, recover, and reconstitute friendly cyberspace capabilities before, during, and after a hostile attack. Network defense encompasses cyberspace attack deterrence, attack mitigation and survivability, attack attribution, vulnerability detection and response, data protection, and infrastructure protection.

2.7. Provides command and control of network warfare operations with DoD, interagency and Coalition Forces to establish situational awareness of both friendly and adversary operations.

2.8. When directed, act with federal, state, and local governments, as well as private sector parties, to identify dependencies and reduce vulnerabilities before they can be exploited. Defends and secures national critical infrastructure and national interests.



2.9. Performs battle damage assessments and analysis on network hardware and software components. Applies forensic and reverse engineering TTPs to determine the extent of the battle damage sustained during cyber attacks. AFECD, 31 October 2013 42

### 3. Specialty Qualifications:

3.1. Knowledge. Knowledge is mandatory of: computer operating systems, software applications, protocols, addressing and hardware. Also mandatory, understanding networking fundamentals, network infrastructure, telecommunications theory and data communications. They must be proficient on wireless networking as well as delivery to personal wireless devices and understand cryptography, to include utilization and exploitation techniques.

3.2. Education. For entry into this specialty, completion of high school is mandatory. Additional courses in physics, computer science and mathematics is desirable. Associate degree or higher in related fields or Information Technology (IT) certification is desirable.

3.3. Training. For award of AFSC 1B431, completion of Cyberspace Defense Operations initial skills course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 1B451. Qualification in and possession of AFSC 1B431. Also, experience performing functions such as network attack, defense, and exploitation.

3.4.2. 1B471. Qualification in and possession of AFSC 1B451. Also, experience performing and supervising functions such as network attack, defense, and exploitation.

3.5. Other. The following are mandatory as indicated:

3.5.1. For entry into this specialty:

3.5.1.1. See attachment 4 for additional entry requirements.

3.5.1.2. Prior qualification at the 5-skill level or higher in any AFSC (desirable AFSCs: 3D0X2, 3D0X3, 3D0X4, 3D1X1, 3D1X2, 1N2X1, or 1N4X1).

3.5.1.3. Normal color vision according to AFI 48-123, *Medical Examinations and Standards*.

3.5.2. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.3. Specialty routinely requires work in the networking environment. For award and retention of AFSCs 1B431/1B451/1B471, must attain and maintain a minimum Information Assurance Technical Level II certification according to DoD 8570.01-M, *Information Assurance Workforce Improvement Program*.

3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management*, is mandatory.

**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret clearance has been granted according to AFI 31-501.



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**Military Branch: Air Force**

**Military Occupation: OPERATIONS INTELLIGENCE**

**Military Code: AFSC 1N0X1**

**Training Levels:** All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.

**Below are training levels with Occupation codes:**

**AFSC 1N071, Craftsman**

**AFSC 1N031, Apprentice**

**AFSC 1N051, Journeyman**

**AFSC 1N011, Helper**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 30 Apr 13, Effective 18 Oct 12)**

**1. Specialty Summary.** Analyzes multiple sources of information in developing, evaluating, and disseminating intelligence on potential threats to U.S. and allied forces. Related DoD Occupational Subgroup: 124300.

## **2. Duties and Responsibilities:**

2.1. Operates in a diverse and complex operational environment, supporting all aspects of Air Force operations to ensure U.S. dominance in air, space, and cyberspace. Supports Joint Force, Department of Defense, and National Intelligence Agency operations.

2.2. Advises commanders on threats to U.S. and allied forces and missions as well as Intelligence, Surveillance and Reconnaissance (ISR) capabilities and employment. Provides analysis of adversary threat systems and intelligence expertise necessary to develop detailed execution plans for air, space, and cyberspace operations. Uses state-of-the-art technology to produce all-source intelligence, situation estimates, order-of-battle studies, and other intelligence reports and studies. Assembles maps, charts, and performs threat analysis in support of mission planning. Prepares and presents intelligence reports and briefings. Conducts intelligence debriefings of U.S. and allied military personnel involved in combat operations. Prepares mission reports. Participates in the installation-level Threat Working Group (TWG)

2.3. Conducts external intelligence training. Instructs aircrews, security forces, explosive ordnance disposal and others on collecting and reporting requirements and procedures, recognition techniques, and assessing offensive and defensive weapon system capabilities. Assists Survival Evasion Resistance and Escape (SERE) and Life Support personnel in training evasion, recovery and code of conduct.



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2.4. Assesses vulnerabilities of U.S. forces' telecommunications networks and information which could be collected and exploited by adversaries. Systematically assesses data using analytical procedures to document threats, isolate existing and potential vulnerabilities, identify procedures for minimizing and eliminating vulnerabilities, and recommend Information Operations (IO) techniques to exploit vulnerabilities to a friendly advantage.

### **3. Specialty Qualifications:**

3.1. Knowledge. Knowledge is mandatory of: intelligence organizations and systems; collection and reporting systems, procedures, and methods; intelligence sources; techniques of identifying, collating, evaluating, and analyzing information; geographical and cultural aspects of foreign countries; current military capabilities and employment tactics of potential enemy offensive and defensive weapon systems; special operations; procedures for acquiring, updating, and maintaining intelligence documents, maps, and charts; map and chart use techniques; graphic, oral, and written presentation; support to targeting; capabilities and application of automated data handling and management systems; security classification marking and control; US sensor systems; regional physical characteristics relative to radar significance; basic electromagnetic theory; computerized systems supporting mission planning digital terrain and feature databases.

3.2. Education. For entry into this specialty, completion of high school or General Education Development equivalency, with courses in public speaking, journalism, geography, modern world history, statistics, algebra, geometry, and trigonometry is desirable.

3.3. Training. For award of AFSC 1N031, completion of a basic operations intelligence course is mandatory.

3.4. Experience. The following experience is mandatory for award of AFSC indicated:

3.4.1. 1N051. Qualification in and possession of AFSC 1N031.

3.4.2. 1N071. Qualification in and possession of AFSC 1N051.

3.5. Other. The following are mandatory as indicated:

3.5.1. For entry into this specialty:

3.5.1.1. No speech disorders or noticeable communications deficiencies as defined by AFI 48-123, *Medical Examinations and Standards*.

3.5.1.2. See attachment 4 for additional entry requirements.

3.5.2. For award and retention of AFSC 1N0X1, when required for a current or future assignment, must successfully complete a polygraph test.

3.5.3. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*. AFECDD, 31 October 2013 60



3.5.4. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 1N031, 1N051, and 1N071, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management*, is mandatory.

**NOTE:** Award of the 3-skill level without a completed SSBI is authorized provided an interim Top Secret clearance has been granted according to AFI 31-501.

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**Military Branch: Air Force**

**Military Occupation: BIOMEDICAL EQUIPMENT**

**Military Code: AFSC 4A2X1**

**Training Levels: All Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**Below are training levels with Occupation codes:**

**AFSC 4A291, Superintendent**

**AFSC 4A231, Apprentice**

**AFSC 4A271, Craftsman**

**AFSC 4A211, Helper**

**AFSC 4A251, Journeyman**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**(Changed 31 Jan 12)**

**1. Specialty Summary.** Installs, inspects, repairs, and modifies biomedical equipment and support systems. Performs pre-purchase evaluations of medical devices and advises on operational theory, underlying physiological principles, and safe clinical applications of biomedical equipment. Implements organizational maintenance support for all medical devices used within the medical treatment facility (MTF), medical research laboratories, air transportable hospitals and clinics, and contingency hospitals. Provides technical guidance and intermediate maintenance support on medical equipment systems when assigned to a regional Medical Equipment Repair Center (MERC). Directs the facility management program when assigned. Related DoD Occupational Subgroup: 132600.

**2. Duties and Responsibilities:**

2.1. Assembles, installs, and inspects new biomedical equipment. Assembles equipment and conducts pre-operational tests to verify compliance with medical and technical standards, specifications, contracts, and regulatory guidance. Installs or coordinates the installation of medical equipment that requires interface with other devices or with the facility. Resolves installation and associated maintenance support problems. Performs formal acceptance testing of complex medical equipment and installations such as diagnostic radiology systems and physiological monitoring systems. Performs pre-procurement surveys, and provides technical advice regarding the purchase of new biomedical equipment systems and the required facility interface requirements.

2.2. Inspects, services, and modifies biomedical equipment and support systems. Inspects biomedical equipment systems to determine operational status and compliance with technical standards and specifications. Performs or supervises preventive maintenance tasks such as lubrication; mechanical adjustment; and replacement of filters, tubing, and other parts subject to deterioration. Evaluates user



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maintenance procedures and ensures safe medical equipment practices are exercised. Instructs and advises personnel in the care and safe, effective use of medical equipment. Calibrates medical equipment according to manufacturers' technical literature, pertinent federal regulations, national standards, state and local laws, and Air Force guidance. Applies electrical, electronic, optical, mechanical, pneumatic, hydraulic, and physiological principles to diagnose and locate system malfunctions. Uses test equipment, technical data, engineering drawings, schematics, and reference materials for troubleshooting and repair of medical equipment. Performs authorized modifications to biomedical equipment.

2.3. Performs safety inspections. Inspects and tests medical and patient-related non-medical equipment for compliance with current safety standards. Inspects and tests supporting utility systems and specialized environment control systems of the medical facility for compliance with electrical and patient safety codes and standards. Identifies deficient equipment, initiates corrective action, and informs personnel of possible safety hazards.

2.4. Performs maintenance management and administrative functions. Develops and directs methods and procedures to be used in the maintenance activity. Determines the type, extent, and feasibility of repairs; and implements repair or condemnation procedures. Performs tasks relating to collecting and recording historical maintenance data. Quality controls reports to ensure accuracy of bench stock balance records and historical maintenance records (HMRs). Revises preventive maintenance and calibration cycles based on Air Force regulations, manufacturers' literature, and local conditions. Administers the medical equipment warranty and guarantee program. Develops statements of work (SOWs) and manages the medical equipment contract maintenance program. Ensures availability and control of spare parts, test equipment, and tools.

2.5. Manages facility management programs. Senior technicians and superintendents may be assigned as facility managers. Manages safety, resource protection, security, energy conservation, fire protection, communications, housekeeping, and facility maintenance programs. Maintains liaison with base agencies such as civil engineering (CE), communications, and contracting to acquire services for operation and maintenance of the facility, the installed equipment, and utility systems. Coordinates construction, maintenance, and facility alteration projects. Performs quality assurance evaluations of work completed by base agencies and contractors. Supervises maintenance of hospital environment and housekeeping. Conducts periodic inspections of the MTF and evaluates issues relating to maintenance, safety, fire protection, and disaster planning to ensure compliance with National Fire Protection Association (NFPA) codes and Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards. Verifies reimbursements to CE and contractors, and accumulates cost data to support facility budget requests. AFECD, 31 October 2013 273

### **3. Specialty Qualification:**

3.1. Knowledge. Knowledge is mandatory of: physiology; electrical, electronic, mechanical, optical, hydraulic, pneumatic, and radiation principles that apply to biomedical equipment systems; using and



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interpreting national safety and accrediting standards, blueprints, and Air Force publications; equipment systems application in medicine; and medical safety procedures.

3.2. Education. For entry into this specialty, completion of high school or general educational development equivalency with courses in algebra, trigonometry, mechanics, mechanical theory, general sciences, anatomy, or biology is desirable.

3.3. Training. For award of AFSC 4A231, completion of the basic biomedical equipment maintenance course is mandatory.

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 4A251. Qualification in and possession of AFSC 4A231. Also, experience in functions such as installing, inspecting, calibrating, modifying, and repairing biomedical equipment support systems.

3.4.2. 4A271. Qualification in and possession of AFSC 4A251. Also, experience supervising functions such as installing, calibrating, repairing, or modifying biomedical equipment systems.

3.4.3. 4A291. Qualification in and possession of AFSC 4A271. Also, experience managing functions such as installing, calibrating, repairing, or modifying biomedical equipment systems.

3.5. Other. The following are mandatory as indicated:

3.5.1. For entry into this specialty:

3.5.1.1. Normal color vision as defined in AFI 48-123, *Medical Examinations and Standards*.

3.5.1.2. A minimum age of 18 years prior to entry into technical training.

3.5.1.3. See attachment 4 for additional entry requirements.

3.5.2. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

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**Military Branch: Air Force**

**Military Occupation: FUSION ANALYST**

**Military Code: AFSC 1N4X1**

**Training Levels: Air Force occupations have up to 5 different training levels: Helper, Apprentice, Journeyman, Craftsman and Superintendent.**

**AFSC 1N471\*, Craftsman**

**AFSC 1N431\*, Apprentice**

**AFSC 1N451\*, Journeyman**

**AFSC 1N411\*, Helper**

Go To: [Occupation Details](#)

[Civilian Competencies](#)

**(Changed 30 Apr 12)**

**1. Specialty Summary:** Performs and manages intelligence analysis activities/functions in all domains. Analyzes and exploits intelligence information, develops targets, and provides situational awareness for operations personnel and key leadership. Conducts research and develops assessments of adversarial actions and intentions. Drafts and disseminates long-term and time-sensitive intelligence reports to consumers worldwide. Related DoD Occupational Subgroups: 123200 and 124300.

**2. Duties and Responsibilities:**

2.1. General overlapping duties: Supports analytical aspects of various Air Force and Joint Intelligence, Surveillance, and Reconnaissance operations by collating, analyzing, evaluating and disseminating intelligence information. Analyzes, studies, researches, fuses, and correlates intelligence for strategic, operational, and tactical customers. Produces all-source intelligence, situation estimates, order-of-battle studies, and other intelligence reports and studies. Advises commanders on force protection and intelligence information for US and allied forces.

2.2. Digital Network Analyst: Exploits global communications to support Computer Network Operations (CNO). Employs techniques to collect, identify, and exploit appropriate communications to ensure accurate targeting. Isolates essential elements of information. Produces technical products and intelligence reports as required. Provides studies used to shape the global network environment enabling all aspects of U.S. network operations. Prepares target assessments, adversary studies, situation reports, and other intelligence reports as required. Provides tailored intelligence to enable Information Operations (IO) targeting and execution in support of Combatant Commander (COCOM) Objectives. Researches, analyzes, and provides time-critical Network Warfare operations intelligence to support theater COCOMs. Contributes to reports supporting CNO planning and Indications and Warnings. Provides analysis of IO activities and support to Operations Centers and supported commanders. Uses all-source intelligence information to produce and present topical high-interest



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technical and operational intelligence briefings to all levels of command. Creates and maintains technical and operational databases using diverse computer hardware and software applications.

2.3. Analysis and Production: Analyzes and reports intelligence information. Performs detailed analysis on target network communications for additional exploitation. Recovers, correlates, and fuses technical, geographical, and operational intelligence information. Recognizes and exploits information. Authors' time-sensitive intelligence reports in accordance with established guidelines to support decisions makers. Produces, analyzes, studies, researches, fuses, and correlates intelligence for strategic, operational, and tactical customers. Provides target geopolitical and operational intelligence to national agencies and military command authorities. Identifies and disseminates real-time threat warning information. Develops and employs techniques to collect, identify, and exploit target networks and operating characteristics. Conducts in-depth analysis of communications characteristics and target tactics, techniques, and procedures. Creates and maintains technical and operational databases using diverse computer hardware and software applications. Operates mission-essential communications mediums. Provides detailed support to contingency and deliberate planning processes. Uses all-source intelligence information to produce and present topical high-interest technical and operational intelligence briefings to all levels of command. Prepares target communication assessments, adversary order of battle studies, situation reports, and other intelligence reports as required. Provides analysis of IO activities and support to Air and Space Operations Centers and supported commanders.

### **3. Specialty Qualifications:**

3.1. Knowledge. Must gain and maintain knowledge of global communications procedures; analytical techniques; organization of the national intelligence structure; intelligence organizations and systems; Information Operations; organization of designated military forces; geography; collection and reporting, systems, principles, methods, and procedures; effective writing principles; oral and written intelligence information presentation; and directives for handling, disseminating, and safeguarding classified information.

3.2. Education. For entry into this specialty, completion of high school with courses in composition, speech, geography, world history, statistics, algebra, geometry, trigonometry, computer applications, and digital communications is desirable.

3.3. Training. The following training is mandatory for award of the AFSC indicated:

3.3.1. 1N431A. Completion of the XAAQR1N431AXXXX Network Intelligence Analysis Fundamentals and XAABR1N431AXXXX Digital Network Intelligence Analysis Apprentice courses.

3.3.2. 1N431B. Completion of the XAAQR1N431BXXXX Analysis and Production Fundamentals and XAABR1N431BXXXX Analysis and Production Apprentice courses. AFECD, 31 October 2013 69

3.4. Experience. The following experience is mandatory for award of the AFSC indicated:

3.4.1. 1N451A. Qualification in and possession of AFSC 1N431A.

3.4.2. 1N451B. Qualification in and possession of AFSC 1N431B.

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3.4.3. 1N471A. Qualification in and possession of AFSC 1N451A.

3.4.4. 1N471B. Qualification in and possession of AFSC 1N451B.

3.4.5. 1N490. Qualification in and possession of AFSC 1N471X.

3.5. Other. The following are mandatory as indicated:

3.5.1. No speech disorders or noticeable communications deficiencies as defined by AFI 48-123, *Medical Examinations and Standards*.

3.5.2. See attachment 4 for additional entry requirements.

3.5.3. For award and retention of AFSC 1N4X1X, must successfully complete a polygraph test.

3.5.4. For award and retention of these AFSCs, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

3.5.5. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 1N4X1X, completion of a current Single Scope Background Investigation (SSBI) and Top Secret clearance is mandatory according to mission requirements.

**NOTE:** Initial attendance in 1N4X1A/B AFSC awarding course without a completed SSBI is authorized provided an interim Top Secret eligibility has been granted according to AFI 31-501, *Personnel Security Program Management*, however, 1N4X1A/B AFSC awarding courses require adjudicated Top Secret clearance and finalized polygraph test by training day 45 or when access to course content requires it, whichever comes first in either course.

**4. Specialty Shredouts:**

*Suffix Portion of AFS to Which Related*

A.....Digital Network Analyst

B.....Analysis and Production

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**Military Branch: Army**

**Military Occupation: MICROWAVE SYSTEMS OPERATOR-MAINTAINER**

**Military Code: 25P**

Training Levels: 2 different training levels- 25P30, 25P40.

**Go To:** [Occupation Details](#)

[Civilian Competencies](#)

[ACE Credit Recommendations](#)

Below are brief synopses of the Occupation and Training received by servicemen and women in this profession. Expanded information on both Occupation and Coursework can be obtained by clicking on these links.

[Full Microwave Systems Operator- Maintainer Occupation- link](#)

[Full Microwave Systems Operator- Controller Coursework- link](#)

### **Occupation Details- Synopsis**

The Microwave Systems Operator-Maintainer supervises, installs, operates, and maintains strategic microwave communications systems, and associated antennas, multiplexing, and COMSEC equipment. Perform engineering quality control and continuity testing of circuits, trunks, links, systems, and facilities; and maintains tactical Line of Sight (LOS), Tropospheric (TROPO) scatter communications systems and associated equipment. **At Skill Level 30:** The Microwave Systems Operator-Maintainer establishes and maintains files, COMSEC materials and other signal administration functions; supervises the operation, maintenance, troubleshooting and systems analysis of microwave communications and technical control systems or facilities; supervises direct support maintenance on associated equipment and unit level maintenance on COMSEC devices; ensure that governing regulations on accountability, maintenance, and TEMPEST standards are complied with; establishes workload, work schedules, and repair priorities; performs or supervises quality control and technical evaluation inspections; implements restoration priorities for circuit, trunk, and system outages; coordinates Continuity of Operations Plan (COOP); and coordinates logistical support, as established in the facility Standing Operating Procedures (SOP), or commercial activities contract. **At Skill Level 40:** Able to perform the duties required for Skill Level 30; the Microwave Systems Operator-Maintainer supervises, plans, and directs the installation, operation, and maintenance activities of microwave communications and technical control systems and facilities; provides technical advice and assistance to subordinates; writes operating policy and procedures for microwave and technical control facilities; manages Signal Security (SIGSEC), ECCM and COMSEC procedures; determines capabilities and limitations of assigned equipment; establishes and maintains liaison with supported and supporting units and activities; develops and conducts training for subordinate personnel; and assimilates data and submits statistical and other reports to operational control elements.



This workforce solution was 100% funded by an \$11.7m grant awarded by the U.S. Department of Labor's Employment and Training Administration, Grant #TC-23745-12-60-A-53. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability or ownership.

### **Related Training Outcomes and Competencies:**

Training for this position is comprised of multiple trainings. This is 1 of up to 5 training versions for this occupations.

### **MICROWAVE SYSTEMS OPERATOR-MAINTAINER COMMON CORE**

Course Number: 101-25P10, Phase 1.

Length: 10 weeks (378 hours).

Exhibit Dates: 10/13–Present.

**Learning Outcomes:** Upon completion of the course, the student will be able to understand and apply basic electronics fundamentals, basic digital fundamentals, and basic networking fundamentals; configure, operate, troubleshoot, and maintain data communication routers, modems, multiplexers, and protocol converters; and configure and operate data encryption systems.

**Instruction:** Methods of instruction include laboratory, lecture, and practical exercises. General course topics include direct and alternating current electronics fundamentals, digital fundamentals, data communications fundamentals and applications, encryption systems, and integrated data systems.

**Methods of Assessment:** Methods of assessment include performance rubrics (checklists) and examinations.

**Related Competencies:** *Basic electricity and electronics* topics include AC/DC theory, basic electronic theory and laws, circuitry diagnostics and components, power supplies, schematics, test equipment, and troubleshooting. *Network fundamentals* topics include cryptography, media types, network hardware, network troubleshooting, open system interconnect models (OSI), router basics, and switching devices. *Data communications systems* topics include bitstream, data communications, encryption, multiplexing, and telecommunications.

**Credit Recommendation:** In the lower-division baccalaureate/associate degree category, 3 semester hours in basic electricity and electronics, 3 in network fundamentals, and 3 in data communications systems (2/14)(2/14).

### ***Training Matching Civilian Occupations***

**Supervision topics** include coaching, decision-making, mentoring, problem solving, resource management, scheduling, supervisory reports, time management, and training.

**Communications topics** include briefing, oral communication techniques, presentation skills, research, technical writing, and written communication skills.

**Quality assurance topics** include assessments, inspections, inventory control, performance monitoring, policy and procedures, quality control, and trend analysis.



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**Networking fundamentals** topics include cabling, fiber, IP addressing, local area network (LAN), terminators, troubleshooting, and Variable Length Subnetting (VLSM).

**Routing and routing protocols topics** include Border Gateway Protocol (BGP), dynamic host configuration protocol (DHCP), firewalls, IP configurations, Open Shortest Path First (OSPF), OSPF authentication, and routing tables.

**Switching and switching protocols** topics include IP configuration, mac address tables, port security, port sticky, spanning tree protocol (STP), troubleshooting, and upgrade IOS.

**Server administration topics** include active directory, group policy, imaging, infrastructure, permissions, troubleshooting, and user management.

**Security management topics** include access control list, auditing, firewalls, intrusion detection systems, permissions, and report validation.

**Radio frequency electronic systems troubleshooting and maintenance** topics include antennas, block diagram analysis, computer control concepts, computer interface, connectivity, microwave concepts, modulation techniques, propagation concepts, safety, schematics, signal flow, spectrum analysis, test equipment, and troubleshooting techniques.

**Management topics** include controlling, developing, inventory management, leading, organizing, personnel management, and planning.



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**ACE credit recommendations**

ACE's Military Guide presents college credit recommendations for formal courses and occupations offered by all branches of the military.

All recommendations are based on ACE reviews conducted by college and university faculty members who are actively teaching in the areas they review.

Below are credit recommendations for the INFORMATION TECHNOLOGY SPECIALIST training, at the 3 levels listed.

Military Course	Recommended Semester Hours	Credit Level Recommendation  V-Vocational  L-Lower division baccalaureate/associates  U- Upper division baccalaureate	Training included in each skill level	
			25P30	25P40
Supervision	3 SH	L	X	X
Communications	3 SH	L	X	X
Quality Assurance	3 SH	L	X	X
Networking Fundamentals	3 SH	L	X	X
Routing and Routing Protocols	3 SH	L	X	X
Switching and Switching Protocols	3 SH	L	X	X
Server Administration	3 SH	L	X	X
Security Management	3 SH	L	X	X



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Radio Frequency Electronic Systems Troubleshooting and Maintenance	3 SH	L	X	X
Management	3 SH	U		X
Total semester hours recommended			27 SH	30 SH
Quarter hours recommended			40.5* QH	45 QH

- Common semester hour/quarter hour conversion rate is: Semester hrs X 1.5= Quarter hours

### Onet Military crosswalk results

Onet is a civilian occupational crosswalk created and maintained by the Department of Labor. It includes a military crosswalk, but the Onet crosswalk does not include military occupation or training information. The military crosswalk provides civilian occupations that align with military training. The Onet tool can be used to provide only general occupational crosswalking for military to civilian career paths.

Onet results for **Military Occupation: MICROWAVE SYSTEMS OPERATOR-MAINTAINER**

**Military Code: 25P-** <http://www.onetonline.org/crosswalk/MOC?b=A&s=25p&g=Go>

**Similar Matching Civilian Occupation Profile via Onet** <http://www.onetonline.org/link/summary/49-2022.00>



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**Military Branch: Marines**

**Military Occupation: INFORMATION ASSURANCE TECHNICIAN**

**Military Code: 0689**

**Go To:** [Occupation Details](#)

[Civilian Competencies](#)

[ACE Credit Recommendations](#)

Training Levels: 5 different training levels

### **Career Pattern**

**SGT: Sergeant (E-5).**

**MSGT: Master Sergeant (E-8).**

**SSGT: Staff Sergeant (E-6).**

**MGYSGT: Master Gunnery Sergeant (E-9). IT3:**

**GYSGT: Gunnery Sergeant (E-7).**

Below are brief synopses of the Occupation and Training received by servicemen and women in this profession. Expanded information on both Occupation levels and Coursework details can be obtained by clicking on these links.

[Link to Information Assurance Technician Occupation information](#)

[Link to Information Assurance Manager Course](#) – **NOTE: This course is PART of the extensive training this position receives.**

### **Occupation Details- Synopsis**

**Information assurance technician** are responsible for all aspects of ensuring Marine Corps information systems data availability, integrity authentication, confidentiality, non-repudiation. Information assurance technician implement and monitor security measures for USMC communication information systems networks, and advise the commander that systems and personnel adhere to established security standards and governmental requirements for security on these systems. Duties include assisting in the development and execution of security policies, plans and procedures; design and implementation of data network security measures; network intrusion detections and forensics; information system security incident handling; certification of Marine Corps systems and networks; determine information assurance program requirements; determine information assurance architecture requirements; develop an information assurance program; draft an information assurance plan; draft an information assurance architecture; develop an information assurance plan; implement non-technical information assurance controls; perform a certification and accreditation process; conduct non-technical information assurance assessment; supervise an information assurance program; and enforce an information assurance plan. Entry level input to this MOS will be in the grade of sergeant through staff sergeant only with a PMOS of 0651, 0656, or 0659 on second or subsequent enlistment.



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## Civilian Competencies

**Networking topics include** client/server network, firewalls, LAN, network device security, network devices, network hardware (configuration), UNIX, virtual private network(VPN), and voice over internet protocol (VOIP).

**Network security topics include** data and system security, data integrity, diversity, encryption, information security programs and procedures, information security staff development, IT security program management, personnel security, physical security, reliability, and security programs implementation.

**Systems analysis topics include** digital switching, fault isolation, fiber optics switching, life cycle management, maintenance readiness, modeling, and quality assurance.

**Telecommunications topics include** fiber optics, GAN, infrastructure management, LAN, MAN, microwave satellites (modulation), multiplexing, network operations, optimization of data and telecommunications, planning and design, QoS availability, radio, receivers, receivers and antennas, RF communication, terrestrial equipment, terrestrial equipment, transmitters, WAN, and wireless.

**Management information systems topics include** computer networks, data and knowledge management, information system management, information system software and technology, physical environment security, and systems development life cycle(SDLC).

**Database management topics include** back-up and recovery strategies, database interfaces, database management system, database organization, database programming, database security, and SQL-structured query language.

**Supervision topics include** counseling, disciplinary actions, evaluation, human resource development, mentoring, motivation, performance appraisals, planning, rewards, rewards motivation, safety, supervisory reports, team building, and training.

**Communications topics include** briefings, electronic messages, internal communication, interpersonal communications, message construction, multimedia presentations, official correspondence, oral communications, presentation skills, presentations, and report writing.

**Management topics include** budget development and administration, controlling, coordination, counseling, interpersonal skills, leading, motivation, organizing, performance evaluation, planning, safety administration, and scheduling.

**Operations management topics include** culture implementation, mission planning, policy development, quality assurance and control, resource management, risk management, solution development, solution implementation, and standard operating procedures.



**ACE credit recommendations**

ACE's Military Guide presents credit recommendations for formal courses and occupations offered by all branches of the military. All recommendations are based on ACE reviews conducted by college and university faculty members who are actively teaching in the areas they review.

Below are credit recommendations for the **INFORMATION ASSURANCE TECHNICIAN**, at the 5 levels listed.

Military Course	Recommended Semester Hours	Credit Level Recommendation	Training included in each skill level				
			SGT	SSGT	GYSGT	MSGT	MGYSGT
Networking	2 SH	Lower level BA	X	X	X	X	X
Network Security	3 SH	Lower level BA	X	X	X	X	X
Systems Analysis	3 SH	Lower level BA	X	X	X	X	X
Telecommunications	3 SH	Lower level BA	X	X	X	X	X
Supervision	2 SH	Lower level BA	X	X	X	X	X
Communications	2 SH	Lower level BA	X	X	X	X	X
Management Information Systems	3 SH	Upper level BA	X	X	X	X	X
Database Management	3 SH	Upper level BA	X	X	X	X	X
Management	3 SH	Upper level BA				X	X
Operations Management	3 SH	Upper level BA					X
<b>Total Semester hours</b>			22	22	22	25	28
<b>Total Quarter hours</b>			33	33	33	37.5	42

- Common semester hour/quarter hour conversion rate is: Semester hrs X 1.5= Quarter hours

**Onet Military crosswalk results**

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Onet results for **Military Occupation: INFORMATION ASSURANCE TECHNICIAN**

**Military Code: 0689-**

**Similar Matching Civilian Occupation Profile via Onet-**

<http://www.onetonline.org/crosswalk/MOC?b=M&s=0689&g=Go>



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**Military Branch: Navy**

**Military Occupation: CRYPTOLOGIC TECHNICIAN, TECHNICAL**

**Military Code: CTT**

**Go To: [Occupation Details](#)**

**[Civilian Competencies](#)**

**[ACE Credit Recommendations](#)**

**6 different training Levels:**

**CTT3: Cryptologic Technician, Technical, Third Class (E-4)**

**CTTC: Chief Cryptologic Technician, Technical (E-7)**

**CTT2: Cryptologic Technician, Technical, Second Class (E-5)**

**CTTCS: Senior Chief Cryptologic Technician, Technical (E-8)**

**CTT1: Cryptologic Technician, Technical, First Class (E-6)**

**CTTCM: Master Chief Cryptologic Technician, Technical (E-9).**

Below are brief synopses of the Occupation and Training received by servicemen and women in this profession. Expanded information on both Occupation and Coursework can be obtained by clicking on these links.

[Cryptologic Technician, Technician Occupation profile- link](#)

[Cryptologic Technician, Technical Coursework- link](#)

### **Occupation Details- Synopsis**

The CRYPTOLOGIC TECHNICIAN, TECHNICAL operates and maintains electronic sensors and computer systems; collects, analyzes, exploits, and disseminates Electronic Intelligence (ELINT) in accordance with fleet and national tasking; provides safety of platform, Indications and Warning (I & W), and Anti-Ship Missile Defense (ASMD); and provides technical and tactical guidance to Warfare Commanders and national consumers in support of surface, subsurface, air, and special warfare operations.

### **Related Competencies**

**Introduction to information technology** topics include electronic transmission (files and reports); file management (creating, organizing and saving); and functions of computer hardware.

**Introduction to computer applications** topics include basic computer skills, business-oriented problem solving, file management, inventory software, presentation development, and software installation.

**Introduction to databases** topics include ad hoc queries, client server, creating standard reports, database system administration, and network capabilities.



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**Radio frequency electronic systems troubleshooting and maintenance topics** include circuit wave form analysis, impedance measurements, power supply fault analysis, signal tracing, transmission line modeling, and voltage/current/power measurements.

**Radio frequency safety** topics include Environmental Protection Agency regulations, and Occupational Safety and Health Administration (OSHA) regulations.

**Business communications** topics include electronic messages, multi-media presentations, oral communication techniques, persuasive writing, presentation skills, report writing, and small group interaction.

**Enterprise communication systems** topics include communication line control; network design; performance analysis; quality assurance; software (word processing, spreadsheets, and presentation); systems monitoring; and trend analysis.

**Data communications systems** topics include current and future trends in technology (analysis), data communication (technologies and applications), and telecommunications. Information security management topics include authentication, data and system security, digital signatures, encryption, system reliability, and threats to the computer system.

**Management** topics include conflict resolution, controlling, leading, organizing, planning, policy and procedures development, report writing, and safety administration.

**Human resources management** topics include conflict mediation and resolution, counseling, disciplinary actions, evaluation, legal issues, organizational behavior, staff development, staffing, training, and workforce diversity.

**Risk management** topics include demolition, hazardous materials, and safe procedure rendering.



## ACE credit recommendations

ACE's Military Guide presents credit recommendations for formal courses and occupations offered by all branches of the military.

All recommendations are based on ACE reviews conducted by college and university faculty members who are actively teaching in the areas they review.

Below are credit recommendations for the **CRYPTOLOGIC TECHNICIAN, TECHNICAL** training, at the 6 levels listed.

Military Course	Recommended Hours SH=Semester Hours QH=Quarter Hours	Credit Level Recommendation	Training included in each skill level					
			CTT3	CTT2	CTT1	CTTC	CTTCS	CTTCM
Introduction to Information Technology	3 SH/4.5QH	Lower level BA	X	X	X	X	X	X
Introduction to Computer Applications	3 SH/4.5QH	Lower level BA	X	X	X	X	X	X
Introduction to Databases	3 SH/4.5QH	Lower level BA	X	X	X	X	X	X
Radio Frequency Electronic Systems Troubleshooting and Maintenance	2 SH/3QH	Lower level BA	X	X	X	X	X	X
Radio Frequency Safety	3 SH/4.5QH	Lower level BA	X	X	X	X	X	X
Business Communications	3 SH/4.5QH	Lower level BA		X	X	X	X	X
Enterprise Communications Systems	3 SH/4.5QH	Lower level BA			X	X	X	X
Data Communications Systems	3 SH/4.5QH	Lower level BA			X	X	X	X
Information Security Management	3 SH/4.5QH	Upper level BA			X	X	X	X
Management	3 SH/4.5QH	Upper level BA			X	X	X	X
Human Resources Management	3 SH/4.5QH	Upper level BA					X	X
Risk Management	3 SH/4.5QH	Upper level BA					X	X
<b>Total Semester hours</b>	<b>35</b>		<b>14</b>	<b>17</b>	<b>29</b>	<b>29</b>	<b>35</b>	<b>35</b>



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Total Quarter hours	48		18	25.5	43.5	43.5	52.5	52.5
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- Common semester hour/quarter hour conversion rate is: Semester hrs X 1.5= Quarter hours

### Onet Military crosswalk results

Onet is a civilian occupational crosswalk created and maintained by the Department of Labor. It includes a military crosswalk, but the Onet crosswalk does not include military occupation or training information. The military crosswalk provides civilian occupations that align with military training. The Onet tool can be used to provide only general occupational crosswalking for military to civilian career paths.

Onet results for **Military Occupation: CRYPTOLOGIC TECHNICIAN, TECHNICAL**

**Military Code:** <http://www.onetonline.org/link/summary/15-1122.00> **Similar Matching Civilian**

**Occupation Profile via Onet-** <http://www.onetonline.org/link/summary/15-1122.00>



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**Military Branch: Navy**

**Military Occupation: INFORMATION SYSTEMS TECHNICIAN**

Go To: [Occupation Details](#)      [Civilian Competencies](#)      [ACE Credit Recommendations](#)

**Military Code: IT**

Training Levels: 6 different training levels

### **Career Pattern**

**IT3:** Information Systems Technician, 3rd Class (E-4).

**ITCS:** Senior Chief Information Systems Technician (E-8).

**IT2:** Information Systems Technician, 2nd Class (E-5).

**ITCM:** Master Chief Information Systems Technician (E-9).

**IT1:** Information Systems Technician, 1st Class (E-6).

**ITC:** Chief Information Systems Technician (E-7).

Below are brief synopses of the Occupation and Training received by servicemen and women in this profession. Expanded information on both Occupation levels and Coursework details can be obtained by clicking on these links.

[Link to Information Systems Technician- Occupation](#)

[Link to Information Systems Technician- Courses](#)

### **Occupation Details- Synopsis**

**Information Systems Technicians** perform core and specialty functions of communications operations, message processing, and network administration and security; establish, monitor, and maintain Radio Frequency (RF) communications systems; perform spectrum management within an area of responsibility; handle, store, and retrieve incoming and outgoing messages; perform network system administration, maintenance, and training; manage, plan and coordinate unit-level information systems security and integration across platforms, fleets, and services; and ensure the proper security, distribution, handling, accounting, reporting, and control of Communications Security (COMSEC) materials, systems, and equipment.



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## **Civilian Competencies**

**Server administration** topics include active directory administration, active directory configuration, backup administration, installation and configuration group policy, network operating system, network server, and remote access server (RAS).

**Information technology essentials** topics include A+ certification, audit log, hardware, operating systems, peripherals, and troubleshooting.

**Networking fundamentals** topics include cabling, Internet Protocol IPv4, local area network (LAN), network and certification, subnetting, topology, and troubleshooting.

**Network administration** topics include Linux, network configuration, network implementation, network installation, network management, network performance, reporting, routers, switches, and UNIX.

**Business communication** topics include communication techniques, group interaction, interpersonal communications, multimedia presentations, persuasive writing, report writing, and written communication.

**Information assurance** topics include audit log, group policy, intrusion detection systems (IDS), intrusion prevention systems (IPS), port scanning, testing, and troubleshooting.

**Security operations** topics include communication security, cryptography, electronic key management, force protection, information assurance, managing electronic spillage, operations security, personnel security, physical security, and security management.

**Management** topics include budget management, decision-making, delegation, facilities management, information systems management, knowledge management, maintenance management, and problem solving.

**Human resource management** topics include career counseling, career development, human relations, mentoring, operations management, organizational behavior, performance evaluation, and teamwork coordination.

**Project management** topics include logistics support and scheduling, milestone development, policy implementation, policy monitoring, post-project assessment, risk assessment, and task execution.

**Strategic planning** topics include communication protocol, critical thinking and analysis, emergency operating procedures, mission planning, resource management, strategic threat assessment, and strategy development and deployment.



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### ***Additional Training Information***

***Below is the description of the Information Systems Technician Class A training course. This provides a more detailed description of the training received, but it is also just part of the overall training for these occupations.***

INFORMATION SYSTEMS TECHNICIAN CLASS "A"

**Length: 19 weeks (760 hours).**

**Learning Outcomes:** Upon completion of the course, the student will be able to perform entry level information systems technician duties and tasks; operate and troubleshoot software and hardware, local area networks (LANs), and Microsoft Windows server; and investigate, troubleshoot, and research portable devices.

**Instruction:** Methods of instruction include audiovisual materials, classroom exercises, computer-based training, discussion, laboratory, lecture, and practical exercises. General course topics include A+ certification, information technology essentials, Network+ certification, networking, Microsoft Windows XP, Microsoft Windows 7, Legacy IT, and Cisco Certified Network Administrators (CCNA1).

### **Related Competencies to Civilian Occupations:**

**A+ certification topics include** antivirus software, device manager, hardware, memory, power supplies, processors, and storage devices.

**Information technology essentials topics include** computer assembly, laptops, networking, operating systems, portable devices, preventive maintenance, printers, scanners, security threats, and troubleshooting.

**CISCO network fundamentals topics include** binary and hex, cabling, collision domains, ethernet standards, IP subnetting, open system interconnect models (OSI), topology, and transmission control protocol/Internet protocol (TCP/IP).

**Server administration topics include** configuring and managing devices and peripherals, configuring and managing NTFS security, configuring and managing shared folder security, configuring TCP/IP addressing and security, installing Microsoft Windows XP, managing disks and file systems, and supporting applications.



### ACE credit recommendations

ACE's Military Guide presents credit recommendations for formal courses and occupations offered by all branches of the military. All recommendations are based on ACE reviews conducted by college and university faculty members who are actively teaching in the areas they review.

Below are credit recommendations for the **INFORMATION SYSTEMS TECHNICIAN**, at the 6 levels listed.

Military Course	Recommended Semester Hours	Credit Level Recommendation	Training included in each skill level					
			IT3	IT2	IT1	ITC	ITCS	ITCM
Information Technology Essentials	3 SH	L	X	X	X	X	X	X
Networking Fundamentals	3 SH	L		X	X	X	X	X
Network Administration	3 SH	L		X	X	X	X	X
Server Administration	3 SH	L	X	X	X	X	X	X
Business Communication	3 SH	L		X	X	X	X	X
Information Assurance	3 SH	L		X	X	X	X	X
Security Operations	3 SH	U			X	X	X	X
Management	3 SH	U				X	X	X
Human Resource Management	3 SH	U					X	X
Project Management	3 SH	U					X	X
Strategic Planning	3 SH	U						X
<b>Total Semester hours</b>			<b>6</b>	<b>18</b>	<b>21</b>	<b>24</b>	<b>30</b>	<b>33</b>
<b>Total Quarter hours</b>			<b>9</b>	<b>27</b>	<b>31.5</b>	<b>36</b>	<b>45</b>	<b>49.5</b>

- Common semester hour/quarter hour conversion rate is: Semester hrs X 1.5= Quarter hours

### Onet Military crosswalk results

Onet is a civilian occupational crosswalk created and maintained by the Department of Labor. It includes a military crosswalk, but the Onet crosswalk does not include military occupation or training information. The military crosswalk provides civilian occupations that align with military training. The Onet tool can be used to provide only general occupational crosswalking for military to civilian career paths.

Onet results for **Military Occupation: INFORMATION SYSTEMS TECHNICIAN**

**Military Code: IT-** <http://www.onetonline.org/crosswalk/MOC?b=&s=it&g=Go>



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Similar Matching Civilian Occupation Profile via Onet- <http://www.onetonline.org/link/summary/15-1142.00>



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