DISTRICT NAME:

CTE Course Description and Standards Crosswalk

Course Information	
Course Name	N+
Course Number	BB825
Number of High School Credits	.5
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Information Technician, Support Technician
Date of district Course Revision	February 2014
Career & Technical Student Organization (CTSO)	
CTSO embedded in this sequence	BPA
Occupational Standards	
Source of Occupational Standards	CompTIA Network + Standards
Names/Numbers of Occupational Standards	Network+ (N10-005)
Registration Information	
Course Description (brief paragraph – as shown in your student handbook or course list)	The purpose of the course is to provide the student with the equivalent knowledge of an entry level network administrator with 9-12 months of experience. The course prepares the student to obtain the CompTIA's Network+ certification. Students completing this course at AVTEC will receive .5 high school credit.
Instructional Topic Headings (please separate each heading by a semi-colon)	Identifying network cable and network types; Identifying common network standards; Selecting and installing network interface cards; Identifying wired and wireless network components; Setting up a wired or wireless network; Managing static and IP addressing; Managing network protocols; Configuring network security; Managing network traffic; Configuring remote access to a network; Troubleshooting common network issues
Summative Assessments and Standards	
Technical Skills Assessment (TSA)	Network+ (N10-005) Examination
Course addresses:	
New Alaska ELA and Math Standards	Y
Alaska Cultural Standards	Y
All Aspects of Industry (AAI)	Y

DISTRICT NAME:

Core Technical Standards	Y
Employability Standards	Y

Employability Standards	
Source of Employability Standards	State of Alaska

Tech Prep	
Current Tech Prep Articulation Agreement? (Y/N)	Y
Date of Current Agreement	Dec. 2014
Postsecondary Institution Name	AVTEC- Alaska's Institute of Technology
Postsecondary Course Name	Introduction to Networks
Postsecondary Course Number	IT 107
# of Postsecondary Credits	4 credits

Additional CTE Course Information

Author	
Course developed by	Dan Bohrnsen
Course adapted from	Previous Edition
Date of previous course revision	11/1998

Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	Yes

Standards Alignment

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Cables and Connectors: Identify network cables by sight or name (Twisted Pair, Coaxial, Straight-through, Crossover, Console) Identify network cable speed capabilities by name (10BaseT, 100BaseT, 1000BaseT, 10GBaseT) Identify network connectors by sight or name (RJ-11, RJ-45, F Type, Serial) Given a scenario and networking requirements, select and install cables for communication between computers and networking devices.	Network+ (N10-005) 2.6, 3.1, 3.2, 1.0, 2.0, 3.8, 4.2, 1.2, 1.3, 1.6, 2.1, 1.4, 3.7	IT-NET 1,2,3,4,5	L.9-12.1.a-b	A-REI.2 N-Q.1	B2, 4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.
Wired Networking: Identify network interface cards and motherboard expansion slots by name or sight. Given a scenario where a new networking card is required in a new or existing computer, select and install the appropriate networking card. Identify wired networking devices by name or sight. Given a scenario where computers must communicate within a wired network, select and install the appropriate networking device(s). Given a scenario where computers must communicate with two or more wired networks, select and install the	Network+ (N10-005) 2.6, 3.1, 3.2, 1.0, 2.0, 3.8, 4.2, 1.2, 1.3, 1.6, 2.1, 1.4, 3.7, 5.5, 3.4, 3.5, 5.2, 5.3	IT-NET 1,2,3,4,5	L.9-12.1.a-b L.9-12.3a L.9-12.6 RST.9-12.4A R-3 9-12 R-4 9-10	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
appropriate networking device(s). Given a scenario where a VoIP implementation is required, select and install the appropriate networking devices and cables.								
Wireless Networking: Given a scenario where computers must communicate within a wireless network, select and install the appropriate networking devices. Given a Windows system, configure a wireless network connection to use the same encryption standard and authentication as configured on a wireless access point. Given a Windows system, add or update a wireless profile to automatically connect to a wireless network. Given a scenario and a Windows system, prioritize wireless profiles to meet end-user requirements.	Network+ (N10-005) 2.2, 3.7, 3.3, 5.1, 5.4,	IT-NET 1,2,3,4,5	L.9-12.1.a-b L.9-12.3a L.9-12.6 RST.9-12.4A	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.
Network Connection Configuration: Identify and select valid IP addresses and classful and classless subnet masks for network connections. Given a Windows system, configure static IP address information on a network connection for communication within a network.	Network+ (N10-005) 3.5, 1.6, 1.3, 1.1, 1.2, 2.6, 1.3, 2.3, 1.7	IT-NET 1,2,3,4,5	L.9-12.1.a-b L.9-12.3a L.9-12.6 RST.9-12.4A	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.

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Given a Windows system, configure the network connection for communication outside of the local network. Given a Windows system, configure the network connection to use DHCP for IP configuration. Given a Windows system, configure the network connection to query DNS servers. Given a Windows system, configure an alternate IP configuration on a network connection. Given a Windows system, configure the network connection to share an Internet connection to meet end-user requirements.								
Network Services: Given a scenario and a network configuration, identify necessary networking protocols and services. Identify UDP and TCP ports of common networking protocols. Given a scenario and network requirements, identify public and private interfaces and addresses for a NAT implementation. Given a scenario and network requirements, identify and select the DHCP scope, reservations, and options	Network+ (N10-005) 1.6, 1.1, 1.2, 1.3, 2.3, 2.6, 1.7, 1.4, 2.1, 5.5, 1.9	IT-NET 1,2,3,4,5	L.9-12.1.a-b R2-9-12	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
to meet network								
Network Security: Given a scenario and security requirements, select protocols to manage remote networking devices. Given a Windows system, configure the basic Windows Firewall by opening the necessary ports based on running services and applications. Identify specific security features included on networking devices. Given a scenario, select and install networking devices to meet networking security requirements.	Network+ (N10-005) 5.4, 1.5, 2.1, 4.1, 5.2, 5.5, 2.6, 1.4, 5.3, 1.6, 4.4, 5.6	IT-NET 1,2,3,4,5	L.9-12.1.a-b L.9-12.3a L.9-12.6 RST.9-12.4A R4-9-12	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.
Network Management: Given a scenario, select and install networking devices to prioritize network traffic, reduce broadcast or collision domains, and separate voice and data traffic. Given a Windows system, enable and configure Remote Desktop to meet end-user requirements.	Network+ (N10-005) 4.5, 1.6, 5.2, 1.4, 2.1, 4.3, 4.4, 1.2, 3.7, 4.1, 4.6	IT-NET 1,2,3,4,5	L.9-12.1.a-b L.9-12.3a L.9-12.6 RST.9-12.4A	A-REI.2 N-Q.1	B2,4	A2,5	Technical Skills Technology	CompTIA Network+ Cert.
Network Troubleshooting: Use and interpret the output from the **ipconfig** command to verify and troubleshoot the existing network configuration.	Network+ (N10-005) 1.6, 1.8, 4.3, 2.5, 3.6, 3.8,	R3-9-12						CompTIA Network+ Cert.

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Use and interpret the output from the **tracert** command to identify default gateway, routing path and IP information for internetwork traffic. Use and interpret the output from the **ping** command to identify and troubleshoot the logical connectivity between two or more networking devices. Given a scenario, select the appropriate tool to troubleshoot physical connectivity problems.	4.2, 2.4, 5.1							
Students will apply the knowledge they have obtained concerning CTSO (i.e. competitive events, technical national certification, internships, community service projects)	BPA State/Nat'l Com Event # 305 and 310	BM3,5,6	L.9-12.6 SL.9-12.6 SL.9-12.1.a-d		B2,3,4 C4 D6 E7,8	A2,5	Technical Skills Tec Planning Labor Work Habits	BPA Competition #'s 305 and 310

Instructional Resources

List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)

http://www.testout.com

http://www.testout.com/home/educator-resources/instructor-tools/labsim-lesson-plans

http://akcis.org

www.bpa.org

www.comptia.org/certification

www.certiport.com