Colorado CTE

# Network Systems & Telecommunications (2015): Grades 9, 10, 11, 12, Higher Education

Adopted 2015

**Identify and analyze customer/organizational network system needs and requirements to design a network.** ITNT.01

**01. Gather data to identify customer/organizational requirements.** ITNT.01.01

- a. Gather information using interviewing and questioning techniques and strategies. ITNT.01.01.A
- b. Identify input and output requirements. ITNT.01.01.B
- c. Identify physical and system requirements for various types of installations. ITNT.01.01.C
- d. Identify security and new application requirements within the system. ITNT.01.01.D
- e. Identify hardware, networking, and software system requirements. ITNT.01.01.E
- f. Identify environment requirements, conditions, and limitations. ITNT.01.01.F
- g. Analyze facilities' power and structural capacity. ITNT.01.01.G
- h. Demonstrate knowledge of non-functional requirements. (e.g., integrity response time, reliability, support and documentation). ITNT.01.01.H

**02. Conduct requirements analysis.** ITNT.01.02

- a. Analyze information from users and define business objectives to be achieved. ITNT.01.02.A
- b. Perform a business process analysis (BPA) to understand the customer's business processes. ITNT.01.02.B
- c. Analyze the Business Process Analysis document and customer's stated requirements to make a determination to move forward with the requested project. ITNT.01.02.C
- d. Evaluate the potential effect of emerging technologies on the system. ITNT.01.02.D

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**De** **Analyze requirements specifications and design the network.** ITNT.02.01

**system using current**

**technologies, tools, and standards.** ITNT.02

a. Assess documented requirements to create network design that meets needs of the customer/organization. ITNT.02.01.A

b. Identify roles of team members/customers in the network development process. ITNT.02.01.B

c. Demonstrate the use of current design tools in the design process. ITNT.02.01.C

**02. Demonstrate knowledge of technologies, tools and standards in designing a network.** ITNT.02.02

a. Demonstrate knowledge of the basics of network architecture. ITNT.02.02.A

b. Demonstrate knowledge of basic network classifications and topologies. ITNT.02.02.B

c. Identify common network computing platforms and LAN physical media. ITNT.02.02.C

d. Characterize network connectivity basis and transmission line applications. ITNT.02.02.D

e. Demonstrate knowledge of communication standards for networks. ITNT.02.02.E

f. Characterize the use of Network Operating Systems. ITNT.02.02.F

g. Employ the use of prototyping to evaluate network system functionality. ITNT.02.02.G

**Perform network installation and configuration to launch a network system.** ITNT.03

**01. Implement network system.** ITNT.03.01

a. Evaluate design requirements and install system in accordance with requirements. ITNT.03.01.A

b. Install a network infrastructure. ITNT.03.01.B

c. Install a Network Operating System. ITNT.03.01.C

d. Configure a Network Operating System. ITNT.03.01.D

e. Apply industry standards quality assurance to network and telecommunications systems. ITNT.03.01.E

**02. Develop a test plan and perform testing and validation.** ITNT.03.02

a. Define and deploy test procedures using new or established procedures for testing, identifying, and tracking resolutions. ITNT.03.02.A

b. Develop and perform test cases using requirements and design specifications. ITNT.03.02.B

c. Document testing procedures and actions. ITNT.03.02.C

**03. Summarize network quality assurance procedures.** ITNT.03.03

a. Use customer satisfaction in determining network characteristics (e.g. cost, efficiency, etc.). ITNT.03.03.A

b. Provide technical documentation as necessary. ITNT.03.03.B

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c. Recognize the relationship between dependability, functionality, scalability and ease of use. ITNT.03.03.C

**Perform network maintenance and user support functions to maintain a network system.** ITNT.04

**01. Perform network administration and monitoring to maintain a network system.** ITNT.04.01

a. Monitor network performance including information management and infrastructure. ITNT.04.01.A

b. Demonstrate knowledge of disaster recovery and business continuance. ITNT.04.01.B

c. Perform network system administration tasks. ITNT.04.01.C

d. Apply and test software upgrades, service packs and patches. ITNT.04.01.D

e. Perform standard computer backup procedures. ITNT.04.01.E

f. Troubleshoot network system and data communications problems. ITNT.04.01.F

g. Update and maintain technical documentation as necessary. ITNT.04.01.G

**02. Perform user support services to support a network system.** ITNT.04.02

a. Identify various methods of technical support used to maintain and support a network system. ITNT.04.02.A

b. Perform technical support duties. ITNT.04.02.B

c. Provide and maintain user documentation as appropriate. ITNT.04.02.C