

## ITCT-115 NETWORK+ 3 CREDITS

### SYLLABUS

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#### CATALOG DESCRIPTION

An introduction to basic computer hardware components, hardware compatibility issues, software installation and functions, security risks and prevention, preventative maintenance and green technology issues. May be preparation for an industry certification exam

Prerequisites: ITCT 111 or (ITCT 113 or ITCT 114)

Semester Offered: On Demand

#### *COMMON STUDENT LEARNING OUTCOMES*

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

##### BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

##### CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

##### CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

##### EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

##### INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

##### INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

#### COURSE LEARNING OUTCOMES

*Upon successful completion of the course, the student will be able to...*

- I. **1.0 Network architecture**
- II. 1.1 Explain the functions and applications of various network devices
- III. 1.2 Compare and contrast the use of networking services and applications.

- IV. 1.3 Install and configure the following networking services/applications
- V. 1.4 Explain the characteristics and benefits of various WAN technologies
- VI. 1.5 Install and properly terminate various cable types and connectors using appropriate tools.
- VII. 1.6 Differentiate between common network topologies
- VIII. 1.7 Differentiate between network infrastructure implementations
- IX. 1.8 Given a scenario, implement and configure the appropriate addressing schema
- X. 1.9 Explain the basics of routing concepts and protocols
- XI. 1.10 Identify the basics elements of unified communication technologies
- XII. 1.11 Compare and contrast technologies that support cloud and virtualization
- XIII. 1.12 Given a set of requirements, implement a basic network
- XIV. 2.0 Network operations**
- XV. 2.1 Given a scenario, use appropriate monitoring tools
- XVI. 2.2 Given a scenario, analyze metrics and reports from monitoring and tracking performance tools
- XVII. 2.3 Given a scenario, use appropriate resources to support configuration management
- XVIII. 2.4 Explain the importance of implementing network segmentation
- XIX. 2.5 Given a scenario, install and apply patches and updates
- XX. 2.6 Given a scenario, configure a switch using proper features
- XXI. 2.7 Install and configure wireless LAN infrastructure and implement the appropriate technologies in support of wireless capable devices
- XXII. 3.0 Network security**
- XXIII. 3.1 Compare and contrast risk related concepts
- XXIV. 3.2 Compare and contrast common network vulnerabilities and threats
- XXV. 3.3 Given a scenario, implement network hardening techniques
- XXVI. 3.4 Compare and contrast physical security controls
- XXVII. 3.5 Given a scenario, install and configure a basic firewall
- XXVIII. 3.6 Explain the purpose of various network access control models
- XXIX. 3.7 Summarize basic forensic concepts
- XXX. 4.0 Troubleshooting**
- XXXI. 4.1 Given a scenario, implement the following network troubleshooting methodology
- XXXII. 4.2 Given a scenario, analyze and interpret the output of troubleshooting tools
- XXXIII. 4.3 Given a scenario, troubleshoot and resolve common wireless issues
- XXXIV. 4.4 Given a scenario, troubleshoot and resolve common copper cable issues
- XXXV. 4.5 Given a scenario, troubleshoot and resolve common fiber cable issues
- XXXVI. 4.6 Given a scenario, troubleshoot and resolve common network issues
- XXXVII. 4.7 Given a scenario, troubleshoot and resolve common security issues
- XXXVIII. 4.8 Given a scenario, troubleshoot and resolve common WAN issues
- XXXIX. 5.0 Industry standards, practices, and network theory**
- XL. 5.1 Analyze a scenario and determine the corresponding OSI layer
- XLI. 5.2 Explain the basics of network theory and concepts
- XLII. 5.3 Given a scenario, deploy the appropriate wireless standard
- XLIII. 5.4 Given a scenario, deploy the appropriate wired connectivity standard
- XLIV. 5.5 Given a scenario, implement the appropriate policies or procedures
- XLV. 5.6 Summarize safety practices

- XLVI. 5.7 Given a scenario, install and configure equipment in the appropriate location using best practices
- XLVII. 5.8 Explain the basics of change management procedures
- XLVIII. 5.9 Compare and contrast the following ports and protocols
- XLIX. 5.10 Given a scenario, configure and apply the appropriate ports and protocols