# *INFORMATION TECHNOLOGY NETWORKING CURRICULUM FRAMEWORK*



This document was prepared by:

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### VISION

*All Nevadans ready for success in the 21st century*

### MISSION

*To improve student achievement and educator effectiveness by ensuring opportunities, facilitating learning, and promoting excellence*

Nevada Department of Education

Nevada Ready!

## INTRODUCTION

The Nevada Career and Technical Education (CTE) Curriculum Frameworks are a resource for Nevada's public schools and charter schools to design, implement, and assess their CTE programs and curriculum. The content standards identified in this document are listed as a model for the development of local district programs and curriculum. They represent rigorous and relevant expectations for student performance, knowledge, and skill attainment which have been validated by industry representatives.

This curriculum framework ensures the following:

- CTE course(s) and course sequence teaches the knowledge and skills required by industry through applied learning methodology and, where appropriate, work-based learning experiences that prepare students for careers in high-wage, high-skill, and/or in-demand fields. Regional and state economic development priorities shall play an important role in determining program approval. Some courses also provide instruction focused on personal development.

- CTE course(s) and course sequence includes leadership and employability skills as an integral part of the curriculum.

- CTE course(s) and course sequence is part of a rigorous program of study and includes sufficient technical challenge to meet state and/or industry-standards.

### NEVADA DEPARTMENT OF EDUCATION

#### CURRICULUM FRAMEWORK FOR
#### INFORMATION TECHNOLOGY NETWORKING

## PROGRAM INFORMATION

| | |
|---:|:---|
| **Program Title:** | **Information Technology Networking** |
| **State Skill Standards:** | **Information Technology Networking** |
| **Standards Reference Code:** | **ITN** |
| **Career Cluster:** | **Information Technology** |
| **Career Pathway:** | **Network Systems** |
| **Program Length:** | **3-year, completed sequentially** |
| **Program Assessments:** | **Information Technology Networking** |
| | **Workplace Readiness Skills** |
| **CTSO:** | **FBLA / SkillsUSA** |
| **Grade Level:** | **9-12** |
| **Industry Certifications:** | **See Nevada's Approved Certification Listing** |

## PROGRAM PURPOSE

The purpose of this program is to prepare students for postsecondary education and employment in the Information Technology Networking industry.

The program includes the following state standards:

- Nevada CTE Skill Standards: Information Technology Networking
- Employability Skills for Career Readiness
- Nevada Academic Content Standards (alignment shown in the Nevada CTE Skill Standards):
  - English Language Arts
  - Mathematics
  - Science
- Common Career Technical Core (alignment shown in the Nevada CTE Skill Standards)

## CAREER CLUSTERS

The National Career Clusters® Framework provides a vital structure for organizing and delivering quality CTE programs through learning and comprehensive programs of study (POS). In total, there are 16 Career Clusters in the National Career Clusters Framework, representing more than 79 Career Pathways to help students navigate their way to greater success in college and career. As an organizing tool for curriculum design and instruction, Career Clusters provide the essential knowledge and skills for the 16 Career Clusters and their Career Pathways.*

*Cite: National Association of State Directors of Career Technical Education Consortium. (2012). Retrieved from https://cte.careertech.org/sites/default/files/CareerClustersPathways.pdf and https://www.air.org/sites/default/files/CTEClusters.pdf

**PROGRAM OF STUDY**

The program of study illustrates the sequence of academic and career and technical education coursework that is necessary for the student to successfully transition into postsecondary educational opportunities and employment in their chosen career path. (NAC 389.803)

**PROGRAM STRUCTURE**

The core course sequencing with the complementary courses provided in the following table serves as a guide to schools for their programs of study. Each course is listed in the order in which it should be taught. Complete program sequences are essential for the successful delivery of all state standards in each program area. A program does not have to utilize the complementary courses for students to complete their program of study.

**INFORMATION TECHNOLOGY NETWORKING**

**Required Core Course Sequence (R) with Complementary Courses (C)**

| Required/ Complementary | Course Title | Abbreviated Name | CIP Code | SCED Subject Area | SCED Course Identifier | SCED Course Level | SCED Unit Credit | SCED Course Sequence | SCED Course Number |
|---|---|---|---|---|---|---|---|---|---|
| R | Cisco IT Essentials | CISCO IT ESST | 11.1002 | 10 | 102 | G | .5 | 13 | 10102G0.5013 |
| R | Cisco Introduction to Cybersecurity | CISCO IT CYBR | 11.1002 | 10 | 102 | G | .5 | 13 | 10102G0.5013 |
| R | CCNA I Introduction to Networking | CISCO CCNA I | 11.1002 | 10 | 102 | G | 1.00 | 23 | 10102G1.0023 |
| R | CCNA II Routing and Switching Essentials | CISCO CCNA II | 11.1002 | 10 | 102 | G | 1.00 | 33 | 10102G1.0033 |
| C | IT Networking Advanced Studies | IT NETWRKG AS | 11.1002 | 10 | 102 | E | 1.00 | 11 | 10102E1.0011 |
| C | CTE Work Experience - Information Technology | WORK EXPER IT | 99.0011 | 10 | 298 | G | 1.00 | 11 | 10298G1.0011 |

### STATE SKILL STANDARDS

The state skill standards are designed to clearly state what the student should know and be able to do upon completion of an advanced high school career and technical education (CTE) program. The standards are designed for the student to complete all standards through their completion of a program of study. The standards are designed to prepare the student for the end-of-program technical assessment directly aligned to the standards. (Paragraph (a) of Subsection 1 of NAC 389.800)

### EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

Employability skills, often referred to as "soft skills," have for many years been a recognizable component of the standards and curriculum in career and technical education programs. The twenty-one standards are organized into three areas: (1) Personal Qualities and People Skills; (2) Professional Knowledge and Skills; and (3) Technology Knowledge and Skills. The standards are designed to ensure students graduate high school properly prepared with skills employers prioritize as the most important. Instruction on all twenty-one standards must be part of each course of the CTE program. (Paragraph (d) of Subsection 1 of NAC 389.800)

### CURRICULUM FRAMEWORK

The Nevada CTE Curriculum Frameworks are organized utilizing the recommended course sequencing listed in the program of study and the CTE Course Catalog. The framework identifies the recommended content standards, performance standards, and performance indicators that should be taught in each course.

### CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOs)

To further the development of leadership and technical skills, students must have opportunities to participate in one or more of the Career and Technical Student Organizations (CTSOs). CTSOs develop character, citizenship, and the technical, leadership and teamwork skills essential for the workforce and their further education. Their activities are considered a part of the instructional day when they are directly related to the competencies and objectives in the course. (Paragraph (a) of Subsection 3 of NAC 389.800)

### WORKPLACE READINESS SKILLS ASSESSMENT

The Workplace Readiness Skills Assessment has been developed to align with the Nevada CTE Employability Skills for Career Readiness Standards. This assessment provides a measurement of student employability skills attainment. Students who complete a program will be assessed on their skill attainment during the completion level course. Completion level courses are identified in the Program Structure table as SCED Course Level "G" and SCED Course Sequence 22 or 33. (Paragraph (d) of Subsection 1 of NAC 389.800)

### END-OF-PROGRAM TECHNICAL ASSESSMENT

An end-of-program technical assessment may be implemented for those programs with current industry validated standards to align with the Nevada CTE Skill Standards for this program. This assessment provides a measurement of student technical skill attainment. Students who complete a program will be assessed on their skill attainment during the completion level course. Completion level courses are identified in the Program Structure table as SCED Course Level "G" and SCED Course Sequence 22 or 33. (Paragraph (e) of Subsection 1 of NAC 389.800)

### CERTIFICATE OF SKILL ATTAINMENT

Each student who completes a course of study must be awarded a certificate which states that they have attained specific skills in the industry being studied and meets the following criteria: A student must maintain a 3.0 grade point average in their approved course of study, pass the Workplace Readiness Skills Assessment, and pass the end-of-program technical assessment. (Subsection 4 of NAC 389.800)

### CTE ENDORSEMENT ON A HIGH SCHOOL DIPLOMA

A student qualifies for a CTE endorsement on their high school diploma after successfully completing the following criteria: (1) completion of a CTE course of study in a program area; (2) completion of academic requirements governing receipt of a standard diploma; and (3) meet all requirements for the issuance of the Certificate of Skill Attainment. (NAC 389.815)

### CTE COLLEGE CREDIT

CTE College Credit is awarded to students based on articulation agreements established by each college for the CTE program, where the colleges will determine the credit value of a full high school CTE program based on course alignment. An articulation agreement will be established for each CTE program designating the number of articulated credits each college will award to students who complete the program.

CTE College Credit is awarded to students who: (1) complete the CTE course sequence with a grade-point average of 3.0 or higher; (2) pass the state end-of-program technical assessment for the program; and (3) pass the Workplace Readiness Assessment for employability skills.

Pre-existing articulation agreements will be recognized until new agreements are established according to current state policy and the criteria shown above.

Please refer to the local high school's course catalog or contact the local high school counselor for more information. (Paragraph (b) of Subsection 3 of NAC 389.800)

### ACADEMIC CREDIT FOR CTE COURSEWORK

Career and technical education courses meet the credit requirements for high school graduation (1 unit of arts and humanities or career and technical education). Some career and technical education courses meet academic credit for high school graduation. Please refer to the local high school's course catalog or contact the local high school counselor for more information. (NAC 389.672)

# CORE COURSES
## RECOMMENDED STUDENT PERFORMANCE STANDARDS

## COURSE INFORMATION

|  |  |
|---:|:---|
| **Course Title:** | CISCO-IT Essentials and CISCO-Introduction to Cybersecurity |
| **Abbreviated Name:** | CISCO IT ESST and CISCO IT CYBR |
| **Credits:** | 1 |
| **Prerequisite:** | None |
| **CTSO:** | FBLA / SKILLSUSA |

## COURSE DESCRIPTION

**Note: These are semester courses which are both required as part of the program of study.**

**CISCO-IT Essentials**

This course introduces students to the fundamentals of computer hardware and software, mobile devices, security and networking concepts, and the responsibilities of an IT professional. Students will be able to describe the internal components of a computer and assemble a computer system. Students will be able to install and understand operating systems, connect via a networked environment, and troubleshoot using system tools and diagnostic software.

**CISCO-Introduction to Cybersecurity**

This course explores the broad topic of cybersecurity including procedures to implement data confidentiality, integrity, availability, and security controls on networks, servers, and applications. Students will understand security principles and how to protect personal data and privacy online.

## TECHNICAL STANDARDS

| | |
|---:|:---|
| **CONTENT STANDARD 1.0:** | **INTEGRATE CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOS)** |
| Performance Standard 1.1: | Explore the History and Organization of CTSOs |
| *Performance Indicators*: | 1.1.1-1.1.3 |
| Performance Standard 1.2: | Develop Leadership Skills |
| *Performance Indicators*: | 1.2.1-1.2.6 |
| Performance Standard 1.3: | Participate in Community Service |
| *Performance Indicators*: | 1.3.1-1.3.3 |
| Performance Standard 1.4: | Develop Professional and Career Skills |
| *Performance Indicators*: | 1.4.1-1.4.5 |
| Performance Standard 1.5: | Understand the Relevance of Career and Technical Education (CTE) |
| *Performance Indicators*: | 1.5.1-1.5.3 |
| **CONTENT STANDARD 2.0:** | **UTILIZE SAFETY PROCEDURES AND PROPER TOOLS** |
| Performance Standard 2.1: | Utilize Safety Procedures |
| *Performance Indicators*: | 2.1.1-2.1.9 |
| Performance Standard 2.2: | Utilize Proper Tools |
| *Performance Indicators*: | 2.2.1-2.2.4 |
| **CONTENT STANDARD 3.0:** | **EXAMINE NETWORK SYSTEM HARDWARE** |
| Performance Standard 3.1: | Identify Computer and Network Hardware |
| *Performance Indicators*: | 3.1.1-3.1.14 |
| Performance Standard 3.2: | Explore Routers and Switches |

*Performance Indicators*:  3.2.1-3.2.13

Performance Standard 3.3:  Investigate Wireless Networks

*Performance Indicators*:  3.3.1-3.3.7

Performance Standard 3.4:  Troubleshoot Hardware

*Performance Indicators*:  3.4.1-3.4.4

**CONTENT STANDARD 4.0:**  **UNDERSTAND COMPUTER SERVICE**

Performance Standard 4.1:  Practice Installation of Hardware and Network Systems

*Performance Indicators*:  4.1.1-4.1.3

Performance Standard 4.2:  Configure, Install, and Maintain Peripherals

*Performance Indicators*:  4.2.1-4.2.7

Performance Standard 4.3:  Communicate Effectively with Customers

*Performance Indicators*:  4.3.1-4.3.5

Performance Standard 4.4:  Operating Systems

*Performance Indicators*:  4.4.1-4.4.5

**CONTENT STANDARD 5.0:**  **ANALYZE SYSTEM NETWORK PROTOCOLS**

Performance Standard 5.1:  Understand Network Protocols

*Performance Indicators*:  5.1.1-5.1.10

Performance Standard 5.2:  Implement Network Protocols

*Performance Indicators*:  5.2.1-5.2.5

**CONTENT STANDARD 6.0:**  **UNDERSTAND SECURITY OF PHYSICAL LAYERS, SOFTWARE, AND NETWORK ACCESS**

Performance Standard 6.1:  Protecting Networks

*Performance Indicators*:  6.1.1-6.1.7

Performance Standard 6.2:  Configuration

*Performance Indicators*:  6.2.1-6.2.5

Performance Standard 6.3:  Event Handling

*Performance Indicators*:  6.3.1-6.3.11

Performance Standard 6.4:  Understand Ethics in Relation to Cybersecurity

*Performance Indicators*:  6.4.1-6.4.5

**CONTENT STANDARD 7.0:**  **CONSTRUCT NETWORK SYSTEMS**

Performance Standard 7.1:  Identify Network System Needs

*Performance Indicators*:  7.1.1-7.1.6

Performance Standard 7.2:  Design and Evaluate Network Systems

*Performance Indicators*:  7.2.1-7.2.6

Performance Standard 7.3:  Construct Network Systems

*Performance Indicators*:  7.3.1-7.3.6

Performance Standard 7.4:  Perform Network Administration and Monitoring

*Performance Indicators*:  7.4.1-7.4.5

**CONTENT STANDARD 8.0:**  **MAINTAIN NETWORK SYSTEMS**

Performance Standard 8.1:  Demonstrate Network Troubleshooting and Diagnostics

*Performance Indicators*:  8.1.1-8.1.8

Performance Standard 8.2:  Demonstrate Network Maintenance

*Performance Indicators*:  8.2.1-8.2.5

**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS**

| | |
|---|---|
| **CONTENT STANDARD 1.0:** | **DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS** |
| Performance Standard 1.1: | Demonstrate Personal Qualities and People Skills |
| *Performance Indicators*: | 1.1.1-1.1.7 |
| Performance Standard 1.2: | Demonstrate Professional Knowledge and Skills |
| *Performance Indicators*: | 1.2.1-1.2.10 |
| Performance Standard 1.3: | Demonstrate Technology Knowledge and Skills |
| *Performance Indicators*: | 1.3.1-1.3.4 |

**ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS\***

| | |
|---|---|
| **English Language Arts:** | Reading Standards for Literacy in Science and Technical Subjects |
| | Writing Standards for Literacy in Science and Technical Subjects |
| | Speaking and Listening |
| **Mathematics:** | Mathematical Practices |

\*Refer to the Information Technology Networking Standards for alignment by performance indicator.

## COURSE INFORMATION

|  |  |
|---|---|
| **Course Title:** | **CISCO-CCNA I Introduction to Networking** |
| **Abbreviated Name:** | **CISCO CCNA I** |
| **Credits:** | **1** |
| **Prerequisite:** | **CISCO-IT Essentials and CISCO-Introduction to Cybersecurity** |
| **Program Assessments:** | **TBD** |
| | **Workplace Readiness Skills** |
| **CTSO:** | **FBLA / SkillsUSA** |

## COURSE DESCRIPTION

This course covers basic networking concepts including networking architecture, structure, and functions; principles and structure of IP addressing; router hardware; network configurations; and the fundamentals of Ethernet concepts.

## TECHNICAL STANDARDS

**CONTENT STANDARD 1.0:**  **INTEGRATE CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOS)**

Performance Standard 1.1:  Explore the History and Organization of CTSOs

*Performance Indicators*:  1.1.1-1.1.3

Performance Standard 1.2:  Develop Leadership Skills

*Performance Indicators*:  1.2.1-1.2.6

Performance Standard 1.3:  Participate in Community Service

*Performance Indicators*:  1.3.1-1.3.3

Performance Standard 1.4:  Develop Professional and Career Skills

*Performance Indicators*:  1.4.1-1.4.5

Performance Standard 1.5:  Understand the Relevance of Career and Technical Education (CTE)

*Performance Indicators*:  1.5.1-1.5.3

**CONTENT STANDARD 2.0:**  **UTILIZE SAFETY PROCEDURES AND PROPER TOOLS**

Performance Standard 2.1:  Utilize Safety Procedures

*Performance Indicators*:  2.1.1-2.1.9

Performance Standard 2.2:  Utilize Proper Tools

*Performance Indicators*:  2.2.1-2.2.4

**CONTENT STANDARD 3.0:**  **EXAMINE NETWORK SYSTEM HARDWARE**

Performance Standard 3.1:  Identify Computer and Network Hardware

*Performance Indicators*:  3.1.1-3.1.14

Performance Standard 3.2:  Explore Routers and Switches

*Performance Indicators*:  3.2.1-3.2.13

Performance Standard 3.3:  Investigate Wireless Networks

*Performance Indicators*:  3.3.1-3.3.7

Performance Standard 3.4:  Troubleshoot Hardware

*Performance Indicators*:  3.4.1-3.4.4

**CONTENT STANDARD 4.0:**  **UNDERSTAND COMPUTER SERVICE**

Performance Standard 4.1:  Practice Installation of Hardware and Network Systems

*Performance Indicators*:  4.1.1-4.1.3

Performance Standard 4.2: Configure, Install, and Maintain Peripherals
*Performance Indicators*: 4.2.1-4.2.7
Performance Standard 4.3: Communicate Effectively with Customers
*Performance Indicators*: 4.3.1-4.3.5
Performance Standard 4.4: Operating Systems
*Performance Indicators*: 4.4.1-4.4.5
**CONTENT STANDARD 5.0: ANALYZE SYSTEM NETWORK PROTOCOLS**
Performance Standard 5.1: Understand Network Protocols
*Performance Indicators*: 5.1.1-5.1.10
Performance Standard 5.2: Implement Network Protocols
*Performance Indicators*: 5.2.1-5.2.5
**CONTENT STANDARD 6.0: UNDERSTAND SECURITY OF PHYSICAL LAYERS, SOFTWARE, AND NETWORK ACCESS**
Performance Standard 6.1: Protecting Networks
*Performance Indicators*: 6.1.1-6.1.7
Performance Standard 6.2: Configuration
*Performance Indicators*: 6.2.1-6.2.5
Performance Standard 6.3: Event Handling
*Performance Indicators*: 6.3.1-6.3.11
Performance Standard 6.4: Understand Ethics in Relation to Cybersecurity
*Performance Indicators*: 6.4.1-6.4.5
**CONTENT STANDARD 7.0: CONSTRUCT NETWORK SYSTEMS**
Performance Standard 7.1: Identify Network System Needs
*Performance Indicators*: 7.1.1-7.1.6
Performance Standard 7.2: Design and Evaluate Network Systems
*Performance Indicators*: 7.2.1-7.2.6
Performance Standard 7.3: Construct Network Systems
*Performance Indicators*: 7.3.1-7.3.6
Performance Standard 7.4: Perform Network Administration and Monitoring
*Performance Indicators*: 7.4.1-7.4.5
**CONTENT STANDARD 8.0: MAINTAIN NETWORK SYSTEMS**
Performance Standard 8.1: Demonstrate Network Troubleshooting and Diagnostics
*Performance Indicators*: 8.1.1-8.1.8
Performance Standard 8.2: Demonstrate Network Maintenance
*Performance Indicators*: 8.2.1-8.2.5

**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS**

**CONTENT STANDARD 1.0: DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**
Performance Standard 1.1: Demonstrate Personal Qualities and People Skills
*Performance Indicators*: 1.1.1-1.1.7
Performance Standard 1.2: Demonstrate Professional Knowledge and Skills
*Performance Indicators*: 1.2.1-1.2.10
Performance Standard 1.3: Demonstrate Technology Knowledge and Skills
*Performance Indicators*: 1.3.1-1.3.4

**ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS\***

|  |  |
|---|---|
| **English Language Arts:** | Reading Standards for Literacy in Science and Technical Subjects |
|  | Writing Standards for Literacy in Science and Technical Subjects |
|  | Speaking and Listening |
|  |  |
| **Mathematics:** | Mathematical Practices |

\*Refer to the Information Technology Networking Standards for alignment by performance indicator.

**COURSE INFORMATION**

|  |  |
|---|---|
| Course Title: | **CISCO-CCNA II Routing and Switching Essentials** |
| Abbreviated Name: | **CISCO CCNA II** |
| Credits: | **1** |
| Prerequisite: | **CISCO-CCNA I Introduction to Networking** |
| Program Assessments: | **Information Technology Networking** |
|  | **Workplace Readiness Skills** |
| CTSO: | **FBLA / SKILLSUSA** |

**COURSE DESCRIPTION**

This course covers the architecture, components, and operations of routers and switches in a network. Students will learn how to configure a router and a switch for basic functionality. Configuration implementation of monitoring tools is also addressed. Upon successful completion of this program, students will be prepared for CompTIA's A+ and the Cisco Certified Entry Networking Technician (CCENT) certification exams.

**TECHNICAL STANDARDS**

| | |
|---|---|
| **CONTENT STANDARD 2.0:** | **UTILIZE SAFETY PROCEDURES AND PROPER TOOLS** |
| Performance Standard 2.1.1: | Utilize Safety Procedures |
| *Performance Indicators*: | 2.1.1-2.1.9 |
| Performance Standard 2.2: | Utilize Proper Tools |
| *Performance Indicators*: | 2.2.1-2.2.4 |
| **CONTENT STANDARD 3.0:** | **EXAMINE NETWORK SYSTEM HARDWARE** |
| Performance Standard 3.1: | Identify Computer and Network Hardware Systems |
| *Performance Indicators:* | 3.1.1-3.1.14 |
| Performance Standard 3.2: | Explore Routers and Switches |
| *Performance Indicators*: | 3.2.1-3.2.13 |
| Performance Standard 3.3: | Investigate Wireless Networks |
| *Performance Indicators*: | 3.3.1-3.3.7 |
| Performance Standard 3.4: | Troubleshoot Hardware |
| *Performance Indicators*: | 3.4.1-3.4.4 |
| **CONTENT STANDARD 4.0:** | **UNDERSTAND COMPUTER SERVICE** |
| Performance Standard 4.1: | Practice Installation of Hardware and Network Systems |
| *Performance Indicators*: | 4.1.1-4.1.3 |
| **CONTENT STANDARD 5.0:** | **ANALYZE SYSTEM NETWORK PROTOCOLS** |
| Performance Standard 5.1: | Understand Network Protocols |
| *Performance Indicators*: | 5.1.1-5.1.10 |
| Performance Standard 5.2: | Implement Network Protocols |
| *Performance Indicators*: | 5.2.1-5.2.5 |
| **CONTENT STANDARD 6.0:** | **UNDERSTAND SECURITY OF PHYSICAL LAYERS, SOFTWARE, AND NETWORK ACCESS5** |
| Performance Standard 6.1: | Protecting Networks |
| *Performance Indicators*: | 6.1.1-6.1.7 |

Performance Standard 6.2: Configuration
*Performance Indicators*: 6.2.1-6.2.5
Performance Standard 6.3: Event Handling
*Performance Indicators*: 6.3.1-6.3.11
Performance Standard 6.4: Understand Ethics in Relation to Cybersecurity
*Performance Indicators*: 6.4.1-6.4.5
**CONTENT STANDARD 7.0:** **CONSTRUCT NETWORK SYSTEMS**
Performance Standard 7.1: Identify Network System Needs
*Performance Indicators*: 7.1.1-7.1.6
Performance Standard 7.2: Design and Evaluate Network Systems
*Performance Indicators*: 7.2.1-7.2.6
Performance Standard 7.3: Construct Network Systems
*Performance Indicators*: 7.3.1-7.3.6
Performance Standard 7.4: Perform Network Administration and Monitoring
*Performance Indicators*: 7.4.1-7.4.5
**CONTENT STANDARD 8.0:** **MAINTAIN NETWORK SYSTEMS**
Performance Standard 8.1: Demonstrate Network Troubleshooting and Diagnostics
*Performance Indicators:* 8.1.1-8.1.8
Performance Standard 8.2: Demonstrate Network Maintenance
Performance Indicators: 8.2.1-8.2.5

## EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

**CONTENT STANDARD 1.0:** **DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**
Performance Standard 1.1: Demonstrate Personal Qualities and People Skills
*Performance Indicators:* 1.1.1-1.1.7
Performance Standard 1.2: Demonstrate Professional Knowledge and Skills
*Performance Indicators*: 1.2.1-1.2.10
Performance Standard 1.3: Demonstrate Technology Knowledge and Skills
*Performance Indicators*: 1.3.1-1.3.4

## ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS*

**English Language Arts:** Reading Standards for Literacy in Science and Technical Subjects
Writing Standards for Literacy in Science and Technical Subjects
Speaking and Listening

**Mathematics:** Mathematical Practices

*Refer to the Information Technology Networking Standards for alignment by performance indicator.

## COMPLEMENTARY COURSES
### RECOMMENDED STUDENT PERFORMANCE STANDARDS

Programs that utilize the complementary courses can include the following:

- Continuation course(s)
- Advanced Studies course
- Lab course(s)
- CTE Work Experience courses

### COURSE INFORMATION

|  |  |
|---:|:---|
| **Course Title:** | **IT Networking Advanced Studies** |
| **Abbreviated Name:** | **IT NETWORKING AS** |
| **Credits:** | **1** |
| **Prerequisite:** | **CISCO-CCNA II Routing and Switching Essentials** |
| **CTSO:** | **FBLA / SKILLSUSA** |

### COURSE DESCRIPTION

This course is offered to students who have achieved all content standards in a program and desire to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

### TECHNICAL STANDARDS

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

### EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

### SAMPLE TOPICS:

- School-based work experience

- Internships

- Special projects

**COURSE INFORMATION**

| | |
|---:|:---|
| **Course Title:** | **CTE Work Experience – Information Technology** |
| **Abbreviated Name:** | **WORK EXPER IT** |
| **Credits:** | **1** |
| **Prerequisite:** | **Level 1 course and concurrently enrolled in the Level 2 or higher course** |
| **CTSO:** | **FBLA / SKILLSUSA** |

**COURSE DESCRIPTION**

This course is designed to expand the students' opportunities for applied learning. This course provides an in-depth CTE work experience that applies the processes, concepts, and principles as described in the classroom instruction. This course will encourage students to explore and develop advanced skills through work-based learning directly related to the program of study. The course must follow NAC 389.562, 389.564, 389.566 regulations.