

Work-Based Learning - NSS

Level: 4

Career Cluster: Digital Technology

Program: Information Technology

Pathway(s): Networking Systems and Security

Course Catalog Description

This advanced course gives students opportunities to apply technical and professional skills in authentic workplace, project-based, and client-focused settings. Students strengthen their abilities in networking, troubleshooting, cybersecurity, technical documentation, and career readiness while preparing for postsecondary pathways and industry-aligned opportunities.

Summary

This advanced course provides students with structured opportunities to apply technical knowledge and professional skills in authentic workplace and project-based settings. The course is designed for students who are ready to extend their learning beyond foundational classroom instruction and demonstrate readiness for postsecondary education, industry credentials, and entry-level careers in networking, cybersecurity, systems administration, and IT support. Students engage in supervised experiences that strengthen their ability to configure and manage systems, troubleshoot hardware and network issues, apply cybersecurity practices, communicate with clients and team members, and document technical processes using industry-relevant workflows. Through internships, client-based projects, school-based enterprises, simulations, and other real-world learning experiences, students build independence, reliability, adaptability, and problem-solving skills while exploring career pathways in high-demand technology fields. The course also emphasizes professional growth through goal setting, reflection, portfolio development, and presentation of technical work, enabling students to connect classroom competencies to workplace expectations and prepare for future certification, employment, and continued study in networking systems and security.

Notes

Compared with the previous general course, this updated version provides a much more pathway-specific and industry-aligned framework for student learning. The earlier course focused broadly on career goals, training plans, safety agreements, documentation of hours, employer evaluations, and reflection across any pathway, while this revised course is tailored specifically to Information Technology and emphasizes networking, systems management, troubleshooting, cybersecurity, client-based projects, portfolio development, and technical communication. The new version expands the learning structure by organizing content into clearly defined sections with refined objectives, detailed student learning outcomes, and targeted real-world experience ideas that directly connect to authentic IT roles and responsibilities. It also strengthens expectations for technical skill application, workplace readiness, and postsecondary preparation by incorporating project-based experiences, industry-relevant workflows, and evidence of learning through documentation, presentations, and portfolio artifacts.

Student Learning Outcomes

1. Career Launch & WBL Planning

Objective: Prepare students to evaluate career pathways, establish professional goals, and develop a personalized plan for work-based learning success.

- Analyze careers in networking, cybersecurity, and IT systems
- Identify interests (network admin, cyber defense, IT support, cloud, etc.)
- Develop resume, portfolio, and professional profile
- Create a Work-Based Learning Plan with measurable goals
- Demonstrate understanding of IT workplace expectations

Real-World Experience Ideas

- Job shadow an IT support specialist
- Interview a network administrator
- Attend an IT career panel
- Create a personal career plan

2. Professional Practice & IT Workflows

Objective: Develop the professional habits, communication skills, and workflow practices required to function effectively in IT workplace settings.

- Demonstrate professional communication in IT environments
- Follow IT workflows (ticketing systems, troubleshooting procedures)
- Apply time management and documentation practices
- Analyze roles and responsibilities in IT teams

Real-World Experience Ideas

- Use a mock ticketing system
- Practice help desk role-play
- Document a service workflow
- Observe an IT team meeting

3. Network Configuration & System Management

Objective: Strengthen students' ability to configure, manage, and organize network and system resources using industry-relevant practices.

- Configure network devices and systems
- Set up users, permissions, and system access
- Manage files, systems, and network resources
- Apply best practices for system organization and efficiency

Real-World Experience Ideas

- Set up a small lab network

- Create user accounts and roles
- Map a network layout
- Organize shared system files

4. Troubleshooting & Technical Support

Objective: Build students' capacity to diagnose issues, apply structured problem-solving strategies, and document technical support processes effectively.

- Diagnose and resolve technical issues
- Apply structured troubleshooting strategies
- Use tools to monitor system performance
- Document troubleshooting processes and outcomes

Real-World Experience Ideas

- Diagnose a simulated device issue
- Complete a troubleshooting log
- Monitor system performance data
- Support a peer tech issue

5. Cybersecurity & Risk Management

Objective: Equip students to recognize risks, apply foundational cybersecurity practices, and evaluate the ethical and legal responsibilities of protecting systems and data.

- Apply cybersecurity principles to protect systems and data
- Identify potential vulnerabilities and threats
- Implement basic security measures and protocols
- Analyze ethical and legal considerations in cybersecurity

Real-World Experience Ideas

- Review a sample security policy
- Identify risks in a scenario
- Set strong password guidelines
- Create a phishing awareness tip sheet

6. Client-Based IT Projects

Objective: Provide opportunities for students to apply technical knowledge in authentic client-based contexts and communicate solutions to stakeholders.

- Complete real IT support or networking tasks
- Work with clients or stakeholders to solve problems
- Apply technical skills to meet project requirements
- Present and justify technical solutions

Real-World Experience Ideas

- Complete a client tech request
- Present a solution to a stakeholder
- Track project tasks and deadlines
- Write a brief client update

7. Advanced Work-Based Learning (Toward Industry Readiness)

Objective: Advance students toward industry readiness by fostering independence, reliability, and problem-solving in real workplace environments.

- Demonstrate independence in IT tasks
- Meet workplace expectations for productivity and reliability
- Apply advanced problem-solving in real-world contexts
- Evaluate readiness for certifications, employment, or postsecondary pathways

Real-World Experience Ideas

- Complete an internship task independently
- Meet a workplace productivity goal
- Reflect on employer feedback
- Prepare for a certification exam

8. Portfolio Development & Project

Objective: Enable students to curate evidence of learning, complete a culminating technical project, and present their growth, skills, and career readiness with confidence.

- Develop a professional IT portfolio (projects, logs, certifications, artifacts)
- Document system configurations, troubleshooting cases, and solutions
- Complete a IT/networking project
- Present and defend technical work
- Reflect on growth and career goals

Additional Information

WBL Experience Options (Learning THROUGH → AT Work)

- IT support internship (school, district, or local business)
- Networking or systems project for a client (setup, upgrade, troubleshooting)
- Cybersecurity audit or risk analysis project
- School-based enterprise (help desk, tech support team)
- Supervised entrepreneurship (tech support services, small network installs)

End-of-Course Outcomes

- Apply networking and system administration skills in real-world environments
- Configure, manage, and troubleshoot network systems and devices
- Apply cybersecurity principles to protect systems, data, and users
- Analyze system performance and resolve technical issues
- Demonstrate professional workplace behaviors including communication, collaboration, and accountability
- Document technical processes, configurations, and troubleshooting steps
- Develop a professional portfolio demonstrating IT and networking skills
- Evaluate postsecondary and career pathways in networking, cybersecurity, and IT support

Assessment Structure

- Work-Based Learning Plan
- IT Project Deliverables (network setups, troubleshooting logs)
- Reflection Logs
- Mentor / Employer Feedback
- Technical Documentation
- Portfolio (systems, configs, problem-solving evidence)
- Project & Presentation