Cybersecurity

Specifications, Competencies & Requirements

PURPOSE

This endorsement is meant for certified teachers interested in teaching **Cybersecurity** courses. It is attached to a current Utah Educator License with a concentration in **Secondary** and **CTE** Education.

Upon attachment of this endorsement to a Utah educator license, educators will be approved to teach the following USBE courses:

Computer Systems 1
Computer Systems 2
Cloud Computing 1
Cloud Computing 2
Cyber Defense and Ethics
Intro to Python 1
Intro to Python 2
Linux Fundamentals
AP CK Cybersecurity Networking
3D Print Technology
Cybersecurity Forensics
Database Development
Digital Literacy
Exploring Computer Science
Computer Science Investigations
HTML 5 App Dev Fundamentals
Intro to Information Technology
Network Fundamentals
AP CK Cybersecurity Fundamentals

ENDORSEMENT TYPES

Prerequisite

Demonstrate an understanding of the basics of Career and Technical Education (CTE).

CTE Knowledge

Associate Level Requirements

The applicant must meet **TWO** of these content areas to be awarded the associate-level endorsement. The endorsement is non-renewable and valid for up to three school years before it expires.

Cloud and Network OR Databases
Cybersecurity
Linux
Digital Literacy
CTSO Knowledge

Professional Level Requirements

The applicant must meet **ALL** the competency areas listed above.

COMPETENCY DETAILS & DESCRIPTIONS

Prerequisite

1. CTE Knowledge

Demonstrate an understanding of CTE basics:

- Explain how CTE links learning to specific Utah industries and what its main goals are.
- Know the licenses and endorsements needed to teach specific CTE courses.
- Describe how CTE is organized into clusters and pathways at the state, district (LEA), and school levels, and how this helps students succeed after graduation.
- Locate and use the state's strands and standards in lesson plans.
- Explore CTE student organizations (CTSOs) and professional groups and explain how they support students and teachers.
- Explain how advisory boards, with industry members, make sure programs meet job market needs and maintain safe learning environments.
- Understand the basics of securing funding, planning for the future of the program, and participating in the state Program of Quality Review (PQR) to ensure program excellence.

*Select **one** of the following options:*

- **USBE Course:** CTE Orientation
- **Complete THREE years of full-time CTE Teaching in Utah**
- **Currently hold a professional-level CTE endorsement**

Endorsement Competencies

2. Network and Cloud OR Databases

Demonstrate competency in Network Security AND Cloud Computing or Databases.
Network security encompasses client operating system security, security applications, firewalls, device security, secure computing, and network port security.
Cloud Computing includes the advantages of cloud concepts and solutions, cloud architecture, the cloud development life cycle, deployment applications, and cloud governance.
Databases include introductory knowledge of how to design, create, and query relational databases, such as MySQL, Microsoft SQL Server, or Oracle. Understanding database design, object management, and data retrieval.

*Select **one** of the following options:*

- **Bachelor's Degree or higher in Cybersecurity:**
  Examples:
  Brigham Young University: Cybersecurity
  Weber State University: Cybersecurity & Network Mgmt.
  Utah Valley University: Cybersecurity

Southern Utah University: MS Cybersecurity

- **Bootcamps**: Choose one:
  - University of Utah's Cybersecurity Professional Bootcamp
  - Google Cybersecurity Professional Certificate
- **Industry Certification**: Choose TWO (ONE in Network **and** ONE in either Cloud OR Database):
  Network (Choose one)
  - ☐ Certiport ITS Networking Security
  - ☐ CompTIA Network+
  - ☐ TestOut Network Pro Certification Industry Exam

  Cloud OR Database (Choose one)
  - ☐ Cloud Computing
  - ☐ Databases

3. Cybersecurity

Demonstrate competency in basic Cybersecurity, including key security principles, frameworks, and mindset. Understanding how vulnerabilities open a company to security incidents, the importance of adherence to security principles, and implementing benchmarks can help mitigate the risk of attack. This includes:

- Security Principles - frameworks, best practices, vulnerabilities, common attacks, social engineering attacks, encryption
- Network - vulnerabilities, protocols, security, wireless networks, logs
- Securing endpoint devices -
- Vulnerability assessment & risk management
- Incident handling

*Select **one** of the following options:*

- **Bachelor's Degree or higher in Cybersecurity:**
  Examples:
  Brigham Young University: Cybersecurity
  Weber State University: Cybersecurity & Network Mgmt.
  Utah Valley University: Cybersecurity
  Southern Utah University: MS Cybersecurity
- **Bootcamps**: Choose one:
  - University of Utah's Cybersecurity Professional Bootcamp
  - Google Cybersecurity Professional Certificate
- **Industry Certification**: Choose one:
  - Certiport ITS Cybersecurity
  - CompTIA Security+
  - TestOut Security Pro Certification Industry Exam
- **Other:** Harvard EdX: CS50CS

4. Linux

Demonstrate understanding and competency in Linux Operating systems. Including managing, securing, automating, and troubleshooting Linux systems in cloud and hybrid environments.

Understanding of automation, orchestration, security, and containers.

*Select **one** of the following options:*

- **Bachelor's Degree or higher in Cybersecurity:**
  Examples:
  Brigham Young University: Cybersecurity
  Weber State University: Cybersecurity & Network Mgmt.
  Utah Valley University: Cybersecurity
  Southern Utah University: MS Cybersecurity
- **Bootcamps**: Choose one
  - University of Utah's Cybersecurity Professional Bootcamp
  - Google Cybersecurity Professional Certificate
- **Industry Certification**: Choose one:
  - TestOut Linux Pro Certification
  - CompTIA Linux+ Certification Industry Exam

5. Digital Literacy

Demonstrate knowledge of the information processing cycle, digital communication, digital citizenship, and digital tools/media.

*Select **one** of the following options:*

- **USBE Digital Literacy Methods Workshop:** Typically held in the summer. Visit the USBE CTE Calendar for more information.
- **IC3 Digital Literacy Certifications:** Successful completion of the most current version of the IC3 certification from the date of application. Certifications can be found at Certiport.com.

6. CTSO Knowledge

Demonstrate Career and Technical Student Organization (CTSO) knowledge:

- **Help students lead:** Give students opportunities to build their leadership abilities and take charge.
- **Mentor students:** Offer guidance to help students set goals and overcome difficulties as they grow.
- **Manage the organization:** Coordinate meetings, events, and budgets, and handle administrative tasks smoothly.
- **Create helpful programs:** Develop activities that match the CTSO's goals of building leadership, exploring careers, and developing skills.
- **Communicate effectively:** Clearly talk with students, school leaders, and community members, and promote the CTSO.
- **Work with others:** Partner with teachers, businesses, and other organizations to create opportunities like internships and community service.
- **Advocate for CTE:** Promote Career and Technical Education and work to get the resources and recognition it needs.
- **Keep learning:** Stay up-to-date on CTSO management and trends in CTE.

- **Focus on student success:** Support students' interests and celebrate their accomplishments.

*Select **one** of the following options:*

- **SkillsUSA New Advisor Training Canvas Course**
- **Attend a CTSO Fall Leadership Conference**. Reflected on MIDAS transcripts.
- **USBE Microcredential**: Career & Technical Student Organizations.