

High Quality Career and Technical Education

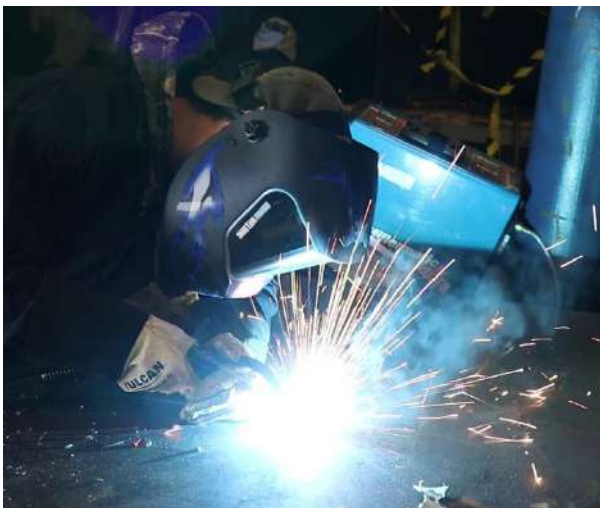


Washington Office of Superintendent of
PUBLIC INSTRUCTION

"Career and Technical Education" (CTE) means a planned program of courses and learning experiences that begins with exploration of career options; supports basic academic and life skills; and enables achievement of high academic standards, leadership, options for high skill, high wage employment preparation, and advanced and continuing education.

When designing high quality CTE pathways:

- ✓ pathways must be designed, approved, and evaluated with local advisory committees comprised of representation from business/industry, labor, and agriculture – reflecting the diversity of the community;
- ✓ pathways must help address the skills gap of Washington's economy, and be aligned with high-demand fields;
- ✓ pathways must be comprised of a sequenced progression of multiple courses that are technically intensive and rigorous;
- ✓ pathways must provide coursework with academic, industry, and 21st century leadership skill standards-aligned and integrated curriculum;
- ✓ pathways must lead to workforce entry, registered apprenticeships, or postsecondary education in a related field;
- ✓ pathways must allow students to earn dual credit and/or include or lead to a credential that is recognized as necessary for employment or advancement in that field;
- ✓ pathways must provide students the opportunity to demonstrate occupationally specific skills and competencies;



- ✓ pathways must be designed with embedded work-based learning opportunities that evolve as the sequence progresses;
- ✓ pathways must be designed with extended learning opportunities; activities related to the course which occur beyond the scheduled school day or school year - student leadership development is best demonstrated through the aligned Career and Technical Student Organizations (CTSOs);
- ✓ pathways should be designed to maximize access to equivalency credit; honoring the integration of academic standards in CTE courses.

Pathway examples provided reflect credit bearing experiences that start in 9th grade; many CTE programs begin at the 7th grade level with exploratory courses that build the foundation to high quality credit bearing pathways.



Construction Pathway

An example student experience in a high quality construction pathway.

Pathway Experience: Core Plus Construction Program Area: Skilled & Technical Sciences

Sample Credit-Bearing Course Sequence

460100: Core Plus Construction – Introduction
460201: Core Plus Construction – Foundations
460000: Core Plus Construction – Construction I+II

Equivalency Credit:

Academic credit towards graduation, earned through CTE coursework

Student earns equivalency credit in English and 3rd Year Math through state equivalency framework.

Dual Credit

Student earns college credit through Architecture and Construction or Woodworking.
Example: Green River

Industry Recognized Credential(s)

Student will earn the Core Plus Certificate, and certificates such as Flagger, OSHA 10 and First Aid/CPR.

Work-based learning (WBL)

Student may take part in various WBL activities including industry site tours, construction careers field day, working with an industry mentor, or taking part in an internship.

Career and Technical Student Organization (CTSO)

SkillsUSA: Student may take part in various community service and leadership activities at the local, regional, state, or national level. Technical competitions such as: Architectural Drafting, Building Maintenance, Carpentry, and Teamworks Construction.

Post-Secondary Pathways

Military Service

- Allied Trade Specialist
- Carpentry & Masonry Specialist
- Construction Engineer

Four-Year University

- Bachelor's Degree in Construction Management
- Master's Degree in Construction Management

Direct Entry to Workforce

- Construction/Carpenter Helper/Laborer

Community & Technical Colleges

- Carpentry Technology (AAS)
- Associate in Construction Management – Direct Transfer

Apprenticeship

Construction Industry Training Council or Washington

- Carpenter or Laborer



Natural Resources Pathway

An example student experience in a high quality forestry-based pathway.

Pathway Experience: Natural Resources – Forestry Program Area: Agriculture Education

Sample Credit-Bearing Course Sequence

030101: Natural Resources
030501: Introduction to Forestry
030506: Forest Management + 038888: Natural Resource Cooperative Worksite Experience

Equivalency Credit:

Academic credit towards graduation, earned through CTE coursework

Student earns lab science credit through Natural Resources and Forest Management state equivalency framework course completion.

Dual Credit

Student earns college credit through Natural Resources – Forestry Science.
Example: Grays Harbor

Industry Recognized Credential(s)

Student may earn OSHA-10, Society of American Foresters Certification, or the Sustainable Forestry Initiative Forest Management Certificate.

Work-based learning (WBL)

Student completes forest health Supervised Agriculture Experience (SAE) research project, takes a field trip to public lands, completes paid worksite learning experience.

Career and Technical Student Organization (CTSO)

FFA: Student may take part in various service learning and leadership development activities at the local, district, state, or national level. Career development events such as: Forestry, and Environmental and Natural Resources, and completing a proficiency award.

Post-Secondary Pathways

Military Service

- Environmental Health & Safety Specialist
- Natural Resources Program Manager

Four-Year University

- Bachelor's of Sustainable Forest Management
- Bachelor's of Natural Resource Management
- Master's of Forest Management

Direct Entry to Workforce

- Forest/Conservation Technician
- Parks Maintenance Worker
- Survey Field Technician

Community & Technical Colleges

- Natural Resources- Forestry Technician (AAS)(AAS-T)
- Forest Resource Management (BAS)

Apprenticeship

- Not applicable at this time.



IT Pathway

An example student experience in a high quality computer science pathway.

Pathway Experience: Computer Science Program Area: Business & Marketing Education

Sample Credit-Bearing Course Sequence

110701: Introduction to Computer Science
110201: Computer Programming (Computer Science APA)
118888: Computer and Information Sciences and Support Services Cooperative Worksite Experience

Equivalency Credit:

Academic credit towards graduation, earned through CTE coursework

Student earns 1st credit beyond Geometry or Science for Computer Programming.

Dual Credit

Student earns college credit through Computer Science, and/or Computer Programming.
Example: Wenatchee Valley

Industry Recognized Credential(s)

Student may earn Microsoft Technology Associate (MTA) Certifications, or Computer Technology Precision Exam.

Work-based learning (WBL)

Student may complete a job shadow and interview a programmer, take part in an unpaid internship, and complete a paid worksite learning experience.

Career and Technical Student Organization (CTSO)

Student may take part in various service and leadership based activities through aligned CTSO. Competitions may include; FBLA: Computer Applications and Programming SkillsUSA: Information Technology Services and Technical Computer Applications

Post-Secondary Pathways

Military Service

- Information Support & Services
- Programming & Software Development

Four-Year University

- Bachelor's Degree in Computer Science or Information Technology
- Master's Degree in Computer Science

Direct Entry to Workforce

- Information Support & Services
- Network Systems Support

Community & Technical Colleges

- Computer Technology (ATS)
- Information Technology (AAS-T)
- Information Technology (ATA)

Apprenticeship

- Apprenti*
- Software and Network Management



Manufacturing Pathway

An example student experience in a high quality aerospace pathway.

Pathway Experience: Core Plus Aerospace Program Area: Skilled and Technical Sciences

Sample Credit-Bearing Course Sequence

470000: Introduction to Manufacturing
150613: Core Plus

Equivalency Credit:

Academic credit towards
graduation, earned
through CTE coursework

Student earns mathematics, science, and English credit through state approved Core Plus
540-hour equivalency framework course

Dual Credit

Student earns college credit through Core Plus 1 and Core Plus 2/Manufacturing Dual
Credit agreement *Example: Everett*

Industry Recognized Credential(s)

Student may earn the Core Plus certificate, OSHA 10 and/or the Forklift Operator
Certificate

Work-based learning (WBL)

Student may hear from guest speakers in manufacturing, complete a summer internship,
or take part in a recognized apprenticeship preparation program.

Career and Technical Student Organization (CTSO)

SkillsUSA: Student may take part in various community service and leadership activities at
the local, regional, state, or national level. Student may also take part in technical
competitions such as: Aircraft Maintenance and Aircraft Assembly.

Post-Secondary Pathways

Military Service

- Aircraft mechanics and service technicians
- Machinist

Four-Year University

- Bachelor's Degree in Aerospace Engineering
- Master's Degree in Mechanical Engineering

Direct Entry to Workforce

- Aerospace assembler
- Flight line repair and modification
- Aerospace electrical

Community & Technical Colleges

- Aviation Maintenance Technology (AMT Certificate)
- Advanced Manufacturing Tech (ATA)

Apprenticeship

Aerospace Joint Apprenticeship Committee

- Aircraft Mechanic Airframe
- Machinist



Healthcare Pathway

An example student experience in a high quality healthcare pathway.

Pathway Experience: Healthcare Program Area: Health Sciences

Sample Credit-Bearing Course Sequence

260103: Biomedical – Body Systems
510799: Medical Terminology
511614: Nursing Assistant

Equivalency Credit:

Academic credit towards
graduation, earned
through CTE coursework

Student earns lab science credits through Biomedical – Body Systems, and Nursing Assistant state equivalency framework course completion

Dual Credit

Student earns college credit through Medical Terminology, or Nursing Assistant CTE Dual Credit articulation agreements *Example: Walla Walla*

Industry Recognized Credential(s)

Student may earn Home Care Aide, Certified Nursing Assistant, Dementia, Health Care Provider, or Blood Borne Pathogen

Work-based learning (WBL)

Student may hear from a guest speaker in the medical field, take part in a focused healthcare-based field trip, complete an internship, and/or complete work-site learning clinical hours

Career and Technical Student Organization (CTSO)

HOSA: Student may take part in various service learning and leadership development activities, and skill development events such as Medical Terminology, Clinical Nursing, Home Health Aide, and Nursing Assisting

Post-Secondary Pathways

Military Service

- Medical Assistant
- LPN & LVN
- Occupational Therapy Assistant
- Critical Care Nurse

Four-Year University

- Bachelor's Degree in Nursing (BSN)
- Master of Nursing (RN)
- Doctor of Nursing Practice (DNP)
- PhD in Nursing

Direct Entry to Workforce

- Home Care Aide
- Certified Nurse Assistant (CNA)

Community & Technical Colleges

- Associate's Degree, transfer for RN
- Licensed Practical Nurse (LPN)

Apprenticeship

Washington Association of Community
& Migrant Health Centers

- Medical Assistant