

# High Quality Career and Technical Education

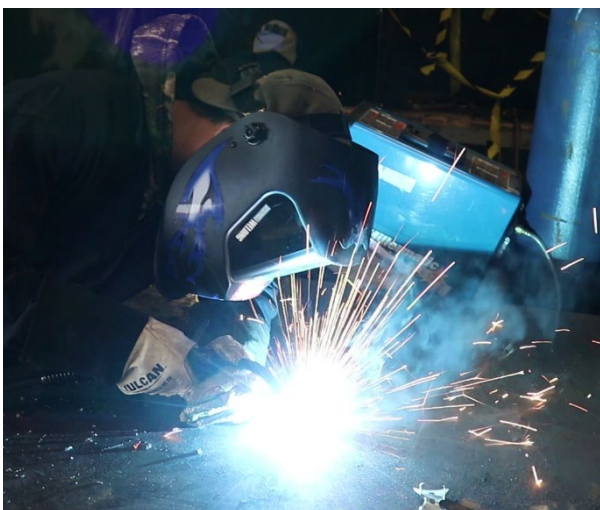


Washington Office of Superintendent of  
**PUBLIC INSTRUCTION**

*"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 21<sup>st</sup> 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 3<sup>rd</sup> 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 1<sup>st</sup> 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

### Community & Technical Colleges

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

### Four-Year University

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

### Apprenticeship

- Apprenti*
- Software and Network Management

### Direct Entry to Workforce

- Information Support & Services
- Network Systems Support



# 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