

Career and Technical Education  
**Program of Study Application**  
**2016** Version  
(Full Application)

**Directions—please enter information into ALL the fields in this application.** If you have technical problems with this application, contact Nakeia Daniels POS.Application@state.or.us.  
(For detailed information on how to complete this application consult the **Guide to Using the Oregon CTE Program of Study Application 2016.**) **DEADLINE for submission: June 30, 2016**

<b>CTE POS—Title:</b>	<b>Advanced Manufacturing</b>
Career Area:	Industrial Engineering Systems--IE
Cluster Area (& appropriate secondary CTE licensure):	IE--Manufacturing (Manufacturing Tech)
Focus Area (if applicable):	
Secondary CIP Code: (Link to CIP website)	48.000 (6 digit)
Community College CIP Code: (Link to CIP website)	48.000 (6 digit)

Secondary School Name:		Tualatin High School
Secondary School District:		Tigard-Tualatin School District
Secondary School ID Number:		381163
Secondary Teacher Name	Email	Current CTE License
David Ellingson (Lead Teacher)	dellingson@ttsd.k12.or.us	IES--Engineering Technology
Jill Hubbard	jhubbard@ttsd.k12.or.us	IES-Engineering Technology

<b>CC Technical Skill Assessment (TSA):</b> Use the code from this table for your selected TSA.	AUTO001
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<b>Secondary Technical Skill Assessment (TSA):</b> Use the code from this table for your selected TSA.	AUTO001
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<b>Primary Oregon Community College Name:</b> (Contact POS.Application@state.or.us to add multiple colleges)	Portland Community College
College Point of Contact:	PCC Sally Earll sally.earll@pcc.edu
Community College CTE Program Title(s):	Machine Manufacturing Technology
Community College Award:	Associate of Applied Science

<b>Visual/Roadmap:</b> (Insert link, or identify location where sample of visual can be found)	See attached
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<b>Regional Coordinator/Contact:</b>	2A--Beth Molenkamp elizabeth.molenkamp@pcc.edu
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CTE Teacher: Submit complete electronic application materials to your CTE Regional Coordinator.

Regional Coordinator: Email application and addenda to this mailbox-- POS.Application@state.or.us), or follow an alternative process described in Step 8 of the **Submission Process** on the last page of this application.

**DEADLINE for submission: June 30, 2016**



## **CTE POS Course Lists—Secondary**

**Directions:**

1) Please list below the CTE Program of Study Secondary Courses in which the instructor will:

- Teach with intent and purpose the CTE POS knowledge and skills identified in the CTE POS Skill Set, and
- Assess and record student achievement of those standards

2) Mark as “TSA” those courses that are necessary for students to take before they are required to take the Technical Skill Assessment for this POS.

*Note: Additional CTE courses may be listed (and supported with Perkins funds) if they support the identified skill set; but do not mark those as “TSA” Required”*

**Secondary Core CTE Courses** (Please be complete; this information will be entered into the CTE Program Update database and all fields are required)

TSA* Required	School Course #	Secondary Course Name	# of Credits	5-digit NCES Code	Course Description (brief) (boxes below will expand)	Articulating College (if applicable)	College Course #	College Course Name
<input checked="" type="checkbox"/>	21004	Introduction to Engineering	0.5	21004	This course provides an authentic, hands-on exploration into engineering fields and careers with a focus on developing critical thinking and problem solving skills. Students work in teams to gain experience in mechanical, electrical, civil, and software engineering systems.	Portland Community College		
<input type="checkbox"/>	21107	Computer Aided Design	0.5	21107	Assignments will cover the fundamentals of three-view drafting views, and sections. Assignments include basic shapes, as well as applications for all other Technology Education areas. Students will work at an individually paced rate so that 24 required assignments are completed during the semester. All work is done in the latest version of Auto-CAD.	Chemeketa Community College		
<input type="checkbox"/>	02075	TechGeometry	1.0	02075	Technical Geometry incorporates the same core geometric concepts required in a standard geometry course including the properties of triangles, polygons, and circles and properties of three-dimensional geometric figures including area, surface area and volume, but includes additional topics that focus on career and technical applications. These concepts will be taught using practical applications in a contextual style of teaching, including	Select College		

**CTE Program Of Study .... 2016 Application** (continued)

					labs and projects. Reasoning skills and problem-solving are emphasized throughout the course. Algebra concepts are used and reviewed throughout the course to continue to prepare students for advanced math.			
<input type="checkbox"/>	21009	Robotics	0.5	21009	Students will design, build, program and test robots. All students will be actively engaged in training activities and the design and development of their teams' robot. Students will demonstrate creativity and innovation by developing design solutions that meet challenges specified in local robotics competitions. Students will demonstrate communication and collaboration skills by working collaboratively to support individual learning and contribute to the learning of others. Students work in teams to analyze and evaluate alternate solutions to design challenges. Students will conduct research and make informed decisions about the design process. The classroom atmosphere is one in which it is okay to ask questions, encourage others, take chances, and make mistakes.	Select College		
<input checked="" type="checkbox"/>	13052	Digital Design and Fabrication 1	0.5	13052	This course incorporates problem/project based learning to help students develop skills to conceptualize items for fabrication using 2D and 3D modeling software. Students will design, prototype and fabricate a solution using 3-D printers, laser engravers, and various other manufacturing process and devises as appropriate. Students will learn how to safely use and maintain equipment.	Select College		
<input checked="" type="checkbox"/>	13058	Digital Design and Fabrication 2	0.5	13058	This course builds on Digital Design and Fabrication 1 to incorporate problem/project based learning to help students develop skills to	Select College		

# CTE Program Of Study .... 2016 Application (continued)

					conceptualize items for fabrication using 2D and 3D modeling software. Students will design, prototype and fabricate a solution using 3-D printers, laser engravers and various other manufacturing process and devices as appropriate. Students will learn how to safely use and maintain equipment.			
<input type="checkbox"/>	13097	Advanced Projects	0.5	13097	Students explore topics of interest related to processing and production with the support of instructors and mentors. This course allows students an opportunity to work closely with industry experts to expand their knowledge and skills and obtain more advanced skills in digital design and fabrication.	Select College		
<input type="checkbox"/>						Select College		
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<input type="checkbox"/>						Select College		
<input type="checkbox"/>						Select College		

*\*TSA required—Technical Skill Assessment required course—required courses that, when completed, trigger TSA assessment eligibility for the student*

## CTE POS Course Lists—Post-Secondary

### Post-secondary Core CTE Courses:

- Enter the name of the college program that is the postsecondary component of this POS
- Select the highest level of this component offered by the college
- List only the courses included in the Course/Skill Set crosswalk matrix

[illegible]

## Course-to-Skill Set Crosswalk/Matrix

Please use one of the Excel spreadsheets posted online at (<http://www.ode.state.or.us/search/page/?=3584>) (or use one you've created locally) to crosswalk the identified skill set to the listed secondary and post-secondary courses.

- You should use the same matrix for both secondary and post-secondary courses.
- It is only required to map courses to the standards (Knowledge and Skill Statements); it is not necessary to map the performance indicators, duties, or tasks.
- Be sure to identify the selected skill set in your matrix, the secondary and postsecondary components.
- If your selected skill set is not from the Oregon Skill Sets website, please identify its origin and how it was industry validated.

☒ **Secondary:** (check this box to indicate secondary course-to-skills crosswalk is complete and attached)

☐ **Post-secondary:** (check this box to indicate post-secondary course-to-skills crosswalk is complete and attached)

## CTE POS Design Elements

*There are five Elements necessary for a robust Career and Technical Education Program of Study—all are critical to being State approved in Oregon*

### GENERAL DIRECTIONS FOR COMPLETING THE ELEMENTS SECTIONS:

- In the first part of each Element section, click on each checkbox for criteria that applies to your Program of Study
- For those criteria that don't apply at this time, explain in the Comments box at the end of the section why those criteria are not met and how you will address them before the program is up for revision (POSs are usually approved for four years) Programs that do not meet all elements at the time of application may be temporarily approved as a "State Recognized Program" (SRP) until missing elements are completed; SRP's can convert to POS anytime and be immediately eligible for Perkins funds, per local grant administrator's budget.
- In the second part of each Element section, there is the expandable space provided for Comments, as mentioned above. Use this box to explain missing check marks in the criteria statements above, point out strengths of your program, or identify special circumstances you need to have considered during ODE review of this application
- If you already have documents or files that help demonstrate the strength or potential of each Element, simply attach those documents or files in the appropriate Addendum folder, or provide links to online documents, when submitting this application, rather than write lengthy responses in the Comment box. (Consult the *Guide to Using the Oregon CTE Program of Study Application 2016* for details about how to use Addenda if submitting supporting documents or files.)

## Element 1: Standards & Content

*Standards and Content are the foundational elements for designing and improving Perkins-eligible Programs of Study*

This POS design includes:

- ☒ A. Relevant, rigorous technical skill standards-based content, including or aligned with challenging academic standards
- ☐ B. Shared secondary and post-secondary technical content which incorporates the knowledge and skills identified in the Oregon Skill Sets or other industry-based standards, which are validated through national and state employer input
- ☒ C. Sufficient size, scope and sequence to include curriculum and instruction leading to student attainment of academic and technical knowledge and skills for high school graduation, college entry, and careers within high wage, high demand fields
- ☒ D. A systemic approach to instructional delivery of academic and technical knowledge and skills where student performance is demonstrated through valid and reliable technical skill assessments (TSA) aligned to industry standards
- ☒ E. A plan for continuous improvement of program design and instructional delivery that provides the opportunity for each CTE POS student to:
  - ☒ Meet diploma requirements, post-secondary entry requirements, and/or certificate/degree requirements
  - ☒ Demonstrate mastery of academic and technical content that is aligned with industry standards
  - ☒ Apply learning through authentic experiences
  - ☒ Develop skills and build confidence to compete in high wage, high skill, and/or high demand occupations.

- **Directions for using the Comment box**—Expandable space is provided for comments. This Box is intended for explanations for missing checks above, or notes regarding program strengths worth consideration during POS review. If you already have documents or files that do this more quickly, simply attach those documents or files (or links to them) to this application in the appropriate Addendum folder. (Consult the *Guide to Using the Oregon CTE Program of Study Application 2016*, for more details.)

Please address these questions through your comments in **Element 1 Comment Box** below (or attach documentation in an appropriately identified file/folder):

- Address any unchecked box above
- Explain how this POS is aligned with challenging academic standards at the HS and CC levels
- Identify those who participated in the decision of which skill set to use for this POS
- Who participated in the crosswalk of the skill sets to HS and CC courses

**Element 1 Comment Box:** The content for this program is relevant and rigorous in that it is based upon the technical abilities found in the manufacturing work environment. The curriculum and instruction for the classes taught allow the students enough experience to be able to enter a vocational or academic college program and have an understanding of

## CTE Program of Study .... 2016 Application (continued)

the manufacturing processes and the skills necessary to utilize that understanding. They can then test their abilities with an industry recognized TSA with Autodesk Certification.

Who participated in Skill Set and Crosswalk of skill sets. Our CTE Revitalization Committee participated in skill set and crosswalk of skill sets. The CTE Revitalization Committee is made up of members from industry, post secondary schools, CTE teachers, equity coordinators, and district administrators. TTSD CTE Revitalization Committee Members: Lynette Hansen (Midway LLC/World of Speed), Sara Singer (City of Tualatin), Ben Bryant (City of Tualatin), Amber Fields (Associate Principal, Tigard High School), Lloyd Purdy (City of Tigard), Jarvis Gomes (Associate Principal, Tualatin High School), Karen Twain (Associate Superintendent, Tigard-Tualatin School District), Charlie Hopewell (Sunset Manufacturing), Noelle Gorbett (STEM TOSA, Tigard-Tualatin School District), Linda Moholt (Tualatin Chamber of Commerce), Reese Lord (Worksystems Inc.), Myronda Shiding (Impact NW), Heidi Gorka (CTE Teacher), David Ellingson (CTE Teacher), John Schwend (Poly-Cast Inc.), Kurt Studer (Williams Controls), Kris Fix (Fought & Co.), Mark Daskalos (Charter Mechanical), Jay Holm (Poly-Cast Inc.), Martin Boehm (Chemwest Systems Inc.), Jose Alvarez (Tualatin High School Equity Coordinator), Susan Salkield (Grants and Special Projects Manager, Tigard-Tualatin School District).

## Element 2: Alignment and Articulation

*Alignment and Articulation are key to getting Program of Study partners working together to build career pathways for CTE students*

The alignment of this POS includes:

- ☒ A. A unified, cohesive sequence of content among secondary and post-secondary partners contained in a non-duplicative sequence of courses or learning experiences.
- ☒ B. Alignment of content between secondary and post-secondary education partners may include course articulation or other ways to acquire post-secondary education credits (e.g. Oregon's Credit for Proficiency, Dual Credit, Oregon Transfer credit, etc.).
- ☒ C. Articulation agreements are developed, implemented and supported at the institutional level to ensure long-term sustainability and cross-sector cooperation.
- ☒ D. Based on the program design and instructional plan, each student will:
  - ☒ Continually progress in knowledge and skills when ready;
  - ☒ Earn high school or college credit based on performance; and
  - ☒ Make the connection between educational preparation and entry into a career.

➤ **Directions for using the Comment box**—Expandable space is provided for comments. This Box is intended for explanations for missing checks above, or notes regarding program strengths worth consideration during POS review. If you already have documents or files that do this more quickly, simply attach those documents or files (or links to them) to this application in the appropriate Addendum folder. (Consult the **Guide to Using the Oregon CTE Program of Study Application 2016**, for more details.)

Please address these questions through your comments in **Element 2 Comment Box** below (or attach documentation in an appropriately identified file/folder):

- Address any unchecked box above
- Briefly describe the level of alignment and/or articulation that exists for this POS (you may also identify non-Perkins eligible alignments that exist with private schools, universities, etc.)
- Briefly describe the alignment and/or articulation activities that have occurred, and who participated from HS and CC levels

### Element 2 Comment Box:

Briefly describe the level of alignment and/or articulation that exists for this POS (you may also identify non-Perkins eligible alignments that exist with private schools, universities, etc.)

Briefly describe the alignment and/or articulation activities that have occurred, and who participated from HS and CC level. Tualatin High School has aligned two courses in the pathway with local colleges: Intro to Engineering and Computer Aided Design.



## Element 3: Accountability & Evaluation

*Accountability and Evaluation are core elements for Perkins eligibility—they provide data illustrating the value of CTE to students' future plans*

In this POS design:

- ☒ A. Performance will be measured against the Perkins-required performance measures as described in Perkins IV Measurement Definitions identified in Oregon's State Plan (re: Data Collection)
- ☒ B. Business, community and education partners (specifically, an Advisory Committee) participate in CTE Program of Study design and development, including:
  - ☒ Assistance in evaluating program vision, goals and priorities
  - ☒ Validation of industry skill standards for curriculum content and technical skill assessment, where appropriate
  - ☒ Participation in the CTE teacher recruitment, instructor appraisal process, and ongoing faculty professional development
- ☒ C. Perkins performance data is used for data-driven, CTE program of study design and improvement decisions
- ☒ D. Students have the opportunity to learn in a contextual career related environment that allows them to:
  - ☒ Monitor their own progress through their demonstration of attaining technical and academic skill standards
  - ☒ Demonstrate their technical and academic proficiency in meaningful ways, e.g., Technical Skill Assessment, etc.
  - ☒ Adapt their program to meet personal goals based on industry requirements and performance outcomes

➤ **Directions for using the Comment box**—Expandable space is provided for comments. This Box is intended for explanations for missing checks above, or notes regarding program strengths worth consideration during POS review. If you already have documents or files that do this more quickly, simply attach those documents or files (or links to them) to this application in the appropriate Addendum folder. (Consult the **Guide to Using the Oregon CTE Program of Study Application 2016**, for more details.)

Please address these questions through your comments in **Element 3 Comment Box** below (or attach documentation in an appropriately identified file/folder):

- Address any unchecked box above
- Identify the data used in designing this POS, and the effect that the data had on the design
- Identify the members of the Business Advisory Committee
- How will the POS be evaluated, and by whom?
- How will you know if the POS is successful?
- What process will you use to decide any changes that need to occur because of the POS evaluation?
- **Required:** List the TSA(s) code used for this POS on Page 1 (ODE approved list)

**Element 3 Comment Box:** The data used in designing this Program Of Study was the number of manufacturing companies in Tualatin that participated in the Manufacturing Day (61 companies) that all expressed a desire to have a Manufacturing Class at Tualatin High School. This has also been requested at Tualatin City Council meetings by board members, the mayor, and others. This drive by the local industry helped the CTE Revitalization Grant which we obtained and provided support to start the Program Of Study. The effect of this has been that the class will be designed with updated goals and content that is relevant to the local industry. It has provided the support for training needed to teach the classes and mentoring for the students.

The members of the Business Advisory Committee include Western Precision Products, Sunset Manufacturing, Machine Sciences, and will include others as they officially connect to the Program.

The POS will be evaluated first by the students through surveys and interviews. It will also be evaluated by the instructor as students progress by informal and formal assessments. Industry partners will evaluate the program based on their observations in the classroom and their input in the advisory committee meetings.

The success of the program will be measured by the number of students that complete the POS and pass the TSA (AUTO001).

The process for determining changes in the POS will be:

If the evaluation warrants a new class, or overhaul of the entire program, a meeting will be held with the advisory committee and the Administrator in charge of curriculum at Tualatin High School. This meeting will determine what the program of Study will entail.

If the evaluation shows a needed change in instruction or content order, or updated content, then the instructor will seek more training and mentoring from industry partners.  
Secondary and Post Secondary TSA: AUTO001

## Element 4: Student Support Services

*Student Support Services include the ways that all students are made aware of the career and education opportunities available in the CTE career Pathway that is the focus of this POS.*

In this POS design:

- ☒ A. All CTE students will have informational guidance support and advising to assist them in progressing through a CTE program of study in an efficient and seamless manner (e.g. Career Pathway Templates, Education Plan and Profile, POS visual guides, Career Information System, etc.).
- ☒ B. Each student will be able to:
  - ☒ Identify the career path options he/she can follow to a chosen career;
  - ☒ Receive consistent and informed messages about career and possible financial options for post-secondary education;
  - ☒ Take ownership of their education through maintaining a current education plan;
- ☒ C. Compliance is evident with Federal regulations, including Title VI- Civil Rights Act of 1964; Title IX – Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; Vocational Education Programs Guidelines for Eliminating Discrimination and Denial of Services on the Basis of Race, Color, Sex, Religion, National Origin, Age or Disability; Title II of the Americans with Disabilities Acts of 1990; therefore, this POS provides:
  - ☒ Appropriate access for all students, including non-traditional and special populations.
  - ☒ A non-biased and non-discriminating learning environment (with respect to race, color, national origin, gender and disability status).
  - ☒ Program facilities with physical access and instruction that accommodates students with disabilities, including various learning styles (e.g. the use of visual, auditory, tactile, and kinesthetic teaching methods, and other appropriate forms of instruction).
  - ☒ Responsiveness to the needs of students for whom English is a second language.
- ☒ D. Opportunities for structured student leadership are a program component and integrated into CTE POS instruction. This POS integrates either:
  - ☐ 1) One of the state chartered CTSO's: ☐ DECA, ☐ FBLA, ☐ FCCLA, ☐ FFA, ☐ HOSA, or ☐ SkillsUSA, **or**
  - ☐ 2) Another local or national organization that meets the criteria listed in the ODE Student Leadership criteria document.
    - The locally developed student organization or experience provides leadership development opportunities that meet the following expectations (see details in linked document above):
      - ☐ Context related instruction, career development , and practical assessment
      - ☐ Community-based learning experiences
      - ☐ Organizational management and administrative experiences

➤ **Directions for using the Comment box**—Expandable space is provided for comments. This Box is intended for explanations for missing checks above, or notes regarding program strengths worth consideration during POS review. If you already have documents or files that do this more quickly, simply attach those documents or files (or links to them) to this application in the appropriate Addendum folder. (Consult the **Guide to Using the Oregon CTE Program of Study Application 2016**, for more details.)

Please address these questions through your comments in **Element 4 Comment Box** below (or attach documentation in an appropriately identified file/folder):

- Address any unchecked box above
- Briefly describe the POS-specific student support services that HS and CC students will receive in this POS that will support their success in the courses
- How will those student support services help inform and prepare HS and CC students for their next educational and career steps?
- Briefly describe the specific efforts that will be made to recruit all types of students into this POS (both HS and CC levels)
- Briefly describe any student leadership opportunities that will be available for both HS and CC

**Element 4 Comment Box:** Students will have access to all the support systems in place at the high school already (IEP/504/ESOL accommodations). They will also have industry mentors that volunteer in the classroom and help them gain the skills they need. Students will not only have access to the Program Of Study pathway, they will also have it shown and explained to them throughout the school year. They will have access to material from the internet as well as free software that will allow them to learn outside the classroom. The support systems mentioned will help them prepare for work/academics by showing them that they can access their learning many different ways. Students will be recruited through contact by other students that have already taken Intro. To Engineering, CAD, or have participated in Robotics. Recruitment of Spanish-speaking students will made by the instructor through conversations,

## CTE Program Of Study .... 2016 Application (continued)

posters at school, as well as emails and phone calls home. Female students that have already taken any of the classes will be asked to recruit their female friends for the classes. The reasoning behind this is that female students that have already taken some of the classes have indicated that they don't want to be the only girl in class. All students are recruited through our Club Fair for the entire high school, the eighth grade welcome, and various demonstrations/exhibitions put on by our Robotics Team.

**Opportunities for leadership:** Students will have opportunities for leadership within SkillsUSA group.

### 1. Relevant Links:

PCC WEBSITES OF PROGRAMS <http://www.pcc.edu/programs/>

CIVIL ENGINEERING TECHNOLOGY WEBSITE <http://www.pcc.edu/programs/civil-engineering/>

CIVIL ENGINEERING TECHNOLOGY COOPERATIVE EDUCATION <http://spot.pcc.edu/jobs/quest/eqcmet.htm>

CIVIL ENGINEERING TECHNOLOGY CATALOG

<http://catalog.pcc.edu/programsanddisciplines/civilengineeringtechnology/>

Oregon Department of Education | Oregon Department of Community Colleges and Workforce Development | Revised November 2014

2015 CTE Program of Study Renewal Form Page 2 of 6

CTE Program Of Study ....2015 Application (continued)

CIVIL ENGINEERING TECHNOLOGY ADVISING GUIDE <http://www.pcc.edu/programs/civil-engineering/documents/advising-guide.pdf>

CIVIL ENGINEERING TECHNOLOGY ADVISING SPECIALIST <http://spot.pcc.edu/~lbrownin/>

GRAD PLAN <http://www.pcc.edu/resources/advising/grad-plan/>

ADVISING SERVICES <http://www.pcc.edu/resources/advising/>

COUNSELING SERVICES <http://www.pcc.edu/resources/counseling/>

CAREER COUNSELING <http://www.pcc.edu/resources/careers/resource-centers/career-exploration.html>

CAREER CENTER <http://www.pcc.edu/resources/careers/resource-centers/>

START LAB <https://www.pcc.edu/resources/orientation/documents/orientation-schedule.pdf>

ESOL PROGRAM ADVISORS <http://www.pcc.edu/prepare/esol/sylvania/>

ESOL PROGRAM <http://www.pcc.edu/prepare/esol/>

INTERNATIONAL ADVISORS <http://www.pcc.edu/about/international/>

DISABILITY SERVICES <http://www.pcc.edu/resources/disability/>

OFFICE OF AFFIRMATIVE ACTION AND EQUITY <http://www.pcc.edu/about/affirmative-action/>

DIVERSITY TRAINING <http://www.pcc.edu/about/affirmative-action/training.html>

TRANSFER INFORMATION <http://www.pcc.edu/programs/university-transfer/>

SOU BAS BUSINESS MANAGEMENT TRANSFER INFORMATION <http://www.pcc.edu/programs/university-transfer/transfer-guides/SOUBAS.html>

OIT BAS TECHNOLOGY AND MANAGMENT TRANSFER INFORMATION <http://www.oit.edu/distance-education/programs/technology-management>

OREGON TRANSFER GUIDES <http://www.pcc.edu/programs/university-transfer/transfer-guides/>

OUT OF STATE TRANSFER GUIDES <http://www.pcc.edu/programs/university-transfer/transfer-guides/out-of-state.html>

2. Technical Skill Assessment: <http://www.ode.state.or.us/search/page/?id=3230>

3. All expectations have been met. The following information provides supporting evidence for the Expectations: Student Support Services per each original statement.

A. Students receive information, guidance, and/or counseling specific to this CTE Program of Study, including career and job market information, and college program information. Evidence: Students in the Civil Engineering Tech program at PCC have a specialized advisor who is knowledgeable about PCC systems as well the nuances of the field and the program. The PCC website shows the many diverse CTE programs available as well as how to get started in one, a career center as well as offers advising and career counseling services. The Civil Engineering Technology degree program has their own website and advising guides which details how students can get started and get support.

B. Students participate in CTE POS specific career related learning experiences or related work experience. Evidence: Students are required to take CMET 280 CE: Civil/Mechanical Engineering Technology 1-5cr. to meet their required degree elective requirements. This is an internship experience that is offered in a real world setting.

C. Students' education planning is developed around information specific to this CTE Program of Study. Evidence: Students and advisors work with the GRAD PLAN program to create a personalized degree plan based on the students' level of entry at PCC and the program requirements. In addition, the catalog of programs and degrees offers guidance on educational planning.

D. Extended application projects or capstone experiences are developed within the context of this CTE Program of Study. Evidence: Students complete a series of extensive applied projects throughout the program starting in their first year. They will experiment and understand a variety of materials as well as complete projects from the preplanning phase

through completion.

E. Written information is provided to all students in this CTE Program of Study informing them of available articulated college (or university) credits, dual credit, expanded options, scholarships, and other postsecondary opportunities.

Evidence: PCC has extensive and detailed information available in their transfer website and in the transfer guides that are available showing the paths of articulation from PCC CTE programs to university programs. Currently there is a direct transfer program with Southern Oregon University for a BAS Business Management, Oregon Institute of Technology, BAS Business and Technology or a BS Operations Management that AAS students can transfer directly into. The program advising specialist reaches out to students through email, class visits and one-on-one meetings about transfer options, scholarships, extra-curricular opportunities, and available college resources. .

Oregon Department of Education | Oregon Department of Community Colleges and Workforce Development | Revised November 2014

2015 CTE Program of Study Renewal Form Page 3 of 6

CTE Program Of Study ....2015 Application (continued)

F. Efforts are made to provide information to students who are considered non-traditional by gender to the occupations resulting from this CTE Program of Study. Evidence: PCC is committed to reaching out to all students regardless of their gender. The CTE program advisors are empowered to reach out to high school students through high school visits, annual student preview day, and career fairs. In addition, the program participates biennially in the NW Career Youth expo and participates in the event "Girls in Technology," which is aimed solely at high school girls and CTE/technology programs.

G. Access and recruitment to courses in this CTE POS are provided for all students including, but not limited to all Oregon and federal protected classes. Evidence: PCC is firmly committed to creating a diverse student body through continued and regular education of staff and faculty as well as by offering ongoing support to students and staff through the Office of Affirmative Action and Equity.

H. Accommodations are made to assure students with special needs can participate in this CTE POS. Evidence: The Disability Services office at PCC is able to help accommodate students with documented disabilities receive services they may qualify for.

I. Assistance is provided for students wishing to participate in this CTE POS for whom English is not their native language. Evidence: Most CTE programs require an English and Reading level minimum placement of WR 115 and/or RD 115. PCC offers ESOL courses for students who wish to improve their English language proficiency prior to entering into their CTE program of choice. For students who are studying on an international visa, international advisors that specialize in helping non-native speakers enter into the ESOL program are available.

## Element 5: Professional Development

*Professional Development for POS teachers should be designed on the needs identified by data, and should focus on continuous improvement of student opportunities within this POS.*

The planned professional development for this POS will:

- ☒ A. Connect to teacher effectiveness evaluations.
- ☒ B. Help teachers and administrators develop and improve standards-based curriculum and learning experiences that promote the integration of coherent and challenging academic content and industry-based technical standards, including opportunities for the appropriate academic and CTE instructors to jointly develop and implement classroom-based curriculum and instructional strategies.
- ☒ C. Include professional development that is high quality, sustained, intensive, and focused on instruction designed to increase the academic knowledge and understanding of industry standards
- ☒ D. Encourage applied learning methodology that contributes to the academic and CTE knowledge of the student
- ☒ E. Provide research and training opportunities that help teachers develop appropriate and useful assessment tools and strategies.
- ☒ F. Provide training and guidance geared to help improve instructional delivery methodology that helps improve student performance and skill acquisition, particularly skills needed to work with and improve instruction for special populations.
- ☒ G. Assist teachers in accessing and utilizing CTE accountability data, student achievement data, and data from assessments

➤ **Directions for using the Comment box**—Expandable space is provided for comments. This Box is intended for explanations for missing checks above, or notes regarding program strengths worth consideration during POS review. If you already have documents or files that do this more quickly, simply attach those documents or files (or links to them) to this application in the appropriate Addendum folder. (Consult the **Guide to Using the Oregon CTE Program of Study Application 2016**, for more details.)

Please address these questions through your comments in **Element 5 Comment Box** below (or attach documentation in an appropriately identified file/folder):

- Address any unchecked box above
- Briefly describe how PD will be planned and implemented, based on the needs of the POS
- Briefly describe any planned joint PD ventures for HS and CC teachers, as well as regional trainings

**Element 5 Comment Box:** Professional Development will be based on ongoing meetings with the advisory committee and trainings done by the local manufacturing business, Portland Community College, and joint ventures with CTE Revitaliation grant recipients throughout the state of Oregon (specifically with Tim Morley at Hillsboro School District and John Niebergall from Sherwood School District and Bowman Fab Lab), as well as teacher need and requests. Portland Community College trainings will allow teachers to get certifications on a various pieces of equipment and will be aligned with their college courses. High School CTE Advanced Manufacturing Teacher Leaders will provide guidance in delivery of instruction and course design in a high school setting.

CTE Teacher: Submit complete electronic application materials to your CTE Regional Coordinator.


Regional Coordinator: Email application and addenda to this mailbox-- POS.Application@state.or.us), or follow an alternative process described in Step 8 of the **Submission Process** on the last page of this application. **DEADLINE for submission: June 30, 2016**




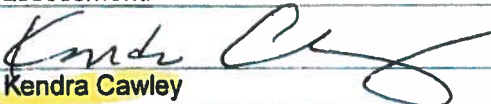
**Certification of Assurance**

Directions: **After filling in all the appropriate fields in this form**, print out a copy of this Certification of Assurance page and acquire all the appropriate signatures. **All signatures must be on one form.** Mail complete, signed Assurance form to Nakela Daniels at: ODE, 255 Capitol St. NE, Salem, OR 97310 or send PDF to [nakela.daniels@ode.state.or.us](mailto:nakela.daniels@ode.state.or.us).

Name of CTE POS	Engineering Pathway
Name of Secondary School	Sunset High School
Name of Community College	Portland Community College

<b>SECONDARY LOCAL SUPPORT and CERTIFICATE OF ASSURANCE</b>	I have reviewed this program application document for clarity, completeness and adherence to program quality standards, and support its approval. I agree that the CTE program area requirements for secondary CTE programs, including appropriate CTE certification for teachers, the rules and regulations for Public Law 109-270, and the requirements contained in the Oregon State Plan for Career and Technical Education will be complied with in the operation of the CTE programs and services offered by the district or through contract between the district and other agencies, institutions, or individuals. I agree to furnish CTE program data as requested by the Oregon Department of Education.	
Secondary School District Administrator Signature		Date: 6/2/16
Administrator's Name	Chris Bick	

<b>LOCAL SUPPORT and CERTIFICATE OF ASSURANCE</b>	The program advisory committee has been involved in the design and development of this program.	
Advisory Committee Signature		Date: 6/17/2016
Advisory Committee Member's name	CARY GATZKE	

<b>POST-SECONDARY LOCAL SUPPORT AND CERTIFICATE OF ASSURANCE</b>	This community college has been involved in the design and development of this CTE program of study and agrees to continue collaboration meeting all 5 Core Elements, especially alignment and articulation and reliable and valid technical skills assessment.	
Community College Administrator's Signature		Date: 6/29/16
CC Administrator's Name	Kendra Cawley	

**For Regional Coordinator Use Only**

Recommended Status:	
<input checked="" type="checkbox"/> RECOMMENDED FOR STATE APPROVAL (Perkins Eligible) <input type="checkbox"/> DISAPPROVED (and returned for revision)	
Regional Coordinator Signature	Date: 6/29/16

**For ODE/OCCWD Use Only**

Approval Status:	
<input type="checkbox"/> FINAL STATE APPROVAL (Perkins Eligible)	
Education Specialist Signature	Expiration Date: _____
	Date: _____

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# **Submission Process**

## **Instructions**

Submit complete electronic copies of the application materials by following this procedure:

1. Do not send PDF applications. Please send in original Word format.
2. Be sure you are using the correct year's application from ODE's website.
3. Create a file (main folder) for storing all documents to be submitted
4. Title the folder using the name of the secondary school, the name of the Program of Study, and the year of submission, e.g., "OregonTownHSAccounting2016."
5. Create subfolders clearly named for each Element's Addendum that you are including with the application, e.g., "Addendum1," "Element1," or "1StandardsContent."
6. If submitting unique documents for individual schools in a Regional Application, create subfolders for each school within the appropriate Element's Addendum folder, e.g., "OregonTownHSAAddendum1."
7. Place the completed POS Application and a scanned copy of the completed Assurance document in the main folder; put any other documents included with the application in their appropriate subfolders. (Please name documents and folders so that they are clearly identified.)
8. Each application needs to include a completed Assurance page with all signatures included on one form—please, no duplicate pages with partial signatures.  
(For Regional Programs of Study, however, each secondary institution will need to have its own Assurance page; for those Regional applications, please secure Community College signatures first, then photocopy for each secondary partner and acquire secondary signatures; then scan and place all originals in the main POS folder with the application.)
9. Please be sure all required documents, links, and examples are in their appropriate folders before performing Step 8.
10. Prepare files for submission:
  - a. Submit each POS application main folder with its subfolders one POS at a time.
  - b. Use the electronic download process using ODE's FTP portal. Go to the ODE Secure File Transfer site (<https://district.ode.state.or.us/apps/xfers/>) and follow the online directions for sending your POS folder to POS.Application@state.or.us. For technical help with this procedure, call Ron Dodge—503-947-5653, or Nakeia Daniels—503-947-5636.
  - c. Alternatively, you may save folders on a Jump Drive or CD-ROM and send to ODE, in care of: Nakeia Daniels, Oregon Department of Education, PSB 2<sup>nd</sup> Floor, 255 Capitol St. NE, Salem, OR 97310.

CTE Teacher: Submit complete electronic application materials to your CTE Regional Coordinator.

Regional Coordinator: Submit application and addenda using the FTP process described in 10 above, to this mailbox:

POS.Application@state.or.us ). (Alternatively, using Step 10(c) above, a jump drive or CD ROM can be used to send files to ODE.)

***DEADLINE for submission: June 30, 2016***

**(You may delete this page before submitting this application.)**

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