**OREGON** DEPARTMENT OF **EDUCATION**

**Office of Educational Improvement and Innovation**
Public Service Building
255 Capitol Street NE
Salem, OR 97310-0203
503-947-5600
Fax 503-378-5156
ODE CTE Website

**CTE™** Learning that works for Oregon

**COMMUNITY COLLEGES AND WORKFORCE DEVELOPMENT** WORKSOURCE OREGON

**Oregon Department of Community Colleges and Workforce Development**
Public Service Building
255 Capitol Street NE
Salem, OR 97310-0203
503-378-8648
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CCWD/HECC Porgram Approval Site

# Career and Technical Education
# Program of Study Application
# **2018** Version
## **(**Full Application**)**

> **Directions—please enter information into ALL the fields in this application.** If you have technical problems with this application, contact Ron Dodge 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 2018**.)* **DEADLINE for submission: June 29, 2018;  (Early Bird: April 30, 2018)**

| CTE POS—Title: | Engineering Technology |
|---|---|
| Career Area: | Industrial  Engineering Systems--IE |
| Cluster Area (& appropriate secondary CTE licensure): | IE--Engineering Technology |
| Focus Area (if applicable): | |
| Secondary CIP Code: (Link to CIP website) | 14.4201 (6 digit) |
| Community College CIP Code: (Link to CIP website) | 15.1301 (6 digit) |

| Secondary School Name: | | Southridge HS | |
|---|---|---|---|
| Secondary School District: | | BSD | |
| Secondary School ID Number: (Link to ID_lookup) | | **2783** | |
| **Secondary Teacher Name** | **Email** | **Current CTE License** | |
| Jacob Small  (Lead Teacher) | jacob_small@beaverton.k12.or.us | IES--Engineering Technology | |
| Dave Holz | karl_holz@beaverton.k12.or.us | IES - Engineering Technology | |
| | | | |

| **Secondary** Technical Skill Assessment (TSA): Use the code from this table for your selected TSA. | MWEC - PLTW - 3REG006 |
|---|---|

| **CC** Technical Skill Assessment (TSA): Use the code from this table for your selected TSA. | :2AREG011 |
|---|---|

| **Primary Oregon Community College Name:** (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): | Civil Engineering |
| Community College Award: | Associate of Applied Science |

| **Visual/Roadmap:** (Insert link, or identify location where sample of visual can be found) | https://drive.google.com/file/d/1XQn3DoEPG_IKpL__fPiGLQrf7mze6DrQ/view?usp=sharing |
|---|---|

| **Regional Coordinator/Contact:** | 2A--Beth Molenkamp elizabeth.molenkamp@pcc.edu |
|---|---|

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 29, 2018**

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# CTE POS Course Lists—Secondary

> **Directions:**
> **1)** Please list below the CTE Program of Study <u>Secondary Courses</u> in which the instructor will:
> - Teach with intent and purpose the CTE POS knowledge and skills identified in the CTE POS Skill Set, <u>and</u>
> - 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 |
|---|---|---|---|---|---|---|---|---|
| ☒ | A560X | Engineering & Design | .5 | 21006 | This class is a prerequisite for ALL Engineering and Computer Science pathways at SRHS.  Exploring Engineering & Computer Science will be a broad survey of different aspects of engineering and computer science topics. Topics to be covered include, but are not limited to, Electronics, Computer Programming, Web Design, Robotics, CAD 3D modeling, 3D printing and Rapid Prototyping. [This course was previously titled Exploring Engineering and Design.]<br><br>This is a required .5 credit to complete POS | Select College | | |
| ☐ | A561X | Engineering & Design II | .5 | 21006 | Prerequisites: Exploring Engineering & Computer Science<br>Computer Aided Design (CAD) is a fundamental skill used in most Engineering fields to model physical objects with a computer. Students will learn to use software to create 3D models and virtual objects which can be turned into physical objects using 3D printers, laser etchers, or milling machines. This class may be required | Select College | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ☐ | | | | | for more advanced Engineering courses.<br><br>This is an optional course to attain additional 1.0 credit to complete POS | | | |
| ☐ | A568X | Advanced Technology (Mechatronics) | .5 | 21003 | Prerequisites: Computer Hardware and/or 3D CAD & Rapid Prototyping The line between software engineering and robotic manufacturing is blurring. This course continues a introduction to this field, focusing first on additional in-depth work with the technical design process. This course covers techniques of analysis and troubleshooting of basic electronic circuits that may include sensors and actuators. Labs include measurement and testing techniques for series and parallel circuits, and procedures to communicate technical information in written and oral form. Students in this course may receive PCC dual credit.<br><br>This is an optional course to attain additional 1.0 credit to complete POS | Select College | | |
| ☐ | A562X | Robotics | .5 | 21009 | Prerequisites:    Engineering & Design 1 [beginning 2018-19] This course is designed for students interested in the field of robotics and related technologies, including programming, mechanical engineering, and electronics. This class will examine effective application of mathematics to solve real-world problems. Students will work in teams to build, code, and test robots and compete against other robot teams.<br><br>This is an optional course to attain additional 1.0 credit to complete POS | Select College | | |
| ☐ | A563X | Robotics II | .5 | 21009 | Prerequisites: Robotics 1, or Teacher Approval | Select College | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Students graduate from using Lego NXT robots, found in Robotics 1, to industrial strength Tetrix robots. This is an applied science class where students take what was learned in math and physics, and apply this knowledge to solve real-world engineering challenges. Students fully investigate topics like autonomous robots, radio-controlled robots, gear trains, chassis design, drive and servo motor control, and the robots that are used in manufacturing. Students learn how to work in teams, specializing in areas that match the student's skill set. This course is repeatable to more fully explore the field of robotics.<br><br>This is an optional course to attain additional 1.0 credit to complete POS | | | |
| ☒ | C8901 | IB Design Technology | .5 | 03206 | Prerequisite: Completion of an Engineering/Computer Science sequence<br>The aim of the IB Design Technology course is to use new and existing technologies to create and deliver new products, services and systems. By using the design cycle, students will demonstrate their investigative, analytical, and design thinking abilities. Projects that require development, prototyping, testing and evaluation will mirror the design processes used across various industries. Design cycle processes that will be addressed in this course are:<br>• Human factors and ergonomics<br>• Resource management and sustainable production<br>• Modeling<br>• Raw material to final product<br>• Innovation and design<br>• Classic design | Select College | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | This is a required .5 credit to complete POS | | | |
| ☒ | C8902 | IB Design Technology | .5 | 03206 | Prerequisite: Completion of an Engineering/Computer Science sequence<br>The aim of the IB Design Technology course is to use new and existing technologies to create and deliver new products, services and systems. By using the design cycle, students will demonstrate their investigative, analytical, and design thinking abilities. Projects that require development, prototyping, testing and evaluation will mirror the design processes used across various industries. Design cycle processes that will be addressed in this course are:<br>• Human factors and ergonomics<br>• Resource management and sustainable production<br>• Modeling<br>• Raw material to final product<br>• Innovation and design<br>• Classic design<br><br>This is a required .5 credit to complete POS | Select College | | |
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*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**

| Name of Certificate or Degree Program | Enter name of college program | | |
|---|---|---|---|
| Highest award available in Program: | Select certificate or degree | | |
| **College Course #** | **Post-Secondary Course Name** | **Number of Credits** | **Accelerated College Credit/College Now?** |
| CMET 110 | Statics | 4 | ☒ |
| CMET 111 | Portland Design: Brews, Bridges and Bikes | 3 | ☒ |
| CMET 112 | Technical Algebra/Trigonometry | 4 | ☒ |
| ENGR 102 | Engineering Graphics | 3 | ☒ |
| CMET 121 | Strength of Materials | 4 | ☒ |
| CMET 122 | Global Energy Physics | 4 | ☒ |
| CMET 123 | Technical Algerbra with Analytic Geometry | 4 | ☒ |
| WR 121 | English Composition | 4 | ☒ |
| CMET 131 | Applied Calculus | 8 | ☒ |
| CMET 213 | Fluid Mechanics | 3 | ☒ |
| CMET 227 | Applied Electricity Fundametals | 2 | ☒ |
| CH 101 | Inorganic Chemistry Priniciples | 5 | ☒ |
| CMET 133 | Materials Technology | 3 | ☒ |
| CMET 221 | Environment Systems | 3 | ☒ |
| Engr 226 | Plane Surveying | 4 | ☒ |

# Course-to-Skill Set Crosswalk/Matrix

Please use one of the Excel spreadsheets posted online at (Skill Set Matrices Page ) (**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 <u>five Elements</u> 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 2018* 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*

<u>This POS design includes</u>:

☒ 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. <u>If you already have documents or files that do this more quickly</u>, simply attach those documents or files (or links to them) to this application in an appropriate Addendum folder. (Consult the *Guide to Using the Oregon CTE Program of Study Application 2018*, 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:**
A. No unchecked boxes
B. https://www.beaverton.k12.or.us/depts/tchlrn/Pages/LT_Browse-Learning-Targets.aspx
Check "CTE" and "EngineeringDesignDev"

These learning targets were developed in district with input from local and state representatives in CTE.  The district CTE programs are aligned in our use of these targets and reveisti them yearly for updates and revision. • The following are the Oregon Skill Sets that we incorporate in our program:

ENP01.01     ENP02.01     ENP03.01     ENP04.01     ENP05.01     ENP06.01     ENP07.01
ENP08.01     ENP09.01          ENP10.01.These skill sets were selected based on inout for PCC representatives, district CTE specialists and program teachers and professional in the community.

D. The crosswalk work involved input fro PCC representatives and district CTE representatives as well as program teachers and administrators.

• Link to department and course descriptions as seen on pg. 28 of the SRHS Academic Planning Guide.

https://docs.google.com/document/d/1unaa0_nnVlpmj3KUOz1fjm4FrQS9OGF3iBbXw3EvmDU/edit


• Students use basic skills being taught in the entry level courses to build the foundation necessary to complete the TSA in advanced courses.

• The POS consists of 1.5 required credits plus 1.0 credits of choice classes within the pathway. Career Related Learning Experiences (CRLE) will be offered within the pathway to satisfy graduation requirements as well as POS requirements.  Alignment of the POS to industry needs and demands of High Skill - High Wage jobs will be the focus of the Advisory panel and curriculum developers.

# 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 care**e**r.

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➢ **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 an appropriate Addendum folder.  (Consult the ***Guide to Using the Oregon CTE Program of Study Application 2018***, for more details.)

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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

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**Element 2 Comment Box:**

A. Box C was left unchecked. The instructor is communicating with PCC in regard to articulating their high school classes with PCC course offerings.

B. POS design offers students experience with industry standard technology, software, and hardware. The curriculum is designed to introduce skills and experiences that carry on to post-secondary education, work-study, and employment. Opportunity for alignment and articulation exist with PCC through the Engineering II (Drafting and rapid prototyping) class as well as the Advanced Technology (Mechatronics) class.  Software platforms used by industry and PCC will be used in POS to smooth the transition from one program to the next. No articulation agreements in place at this time although articulation is the goal of further collaboration.

C. The high school instructor has met with PCC instructors to determine what in the high school course(s) will be able to be articulated with theirs.

• Collaboration with industry partners, post-secondary education providers, and POS graduates will design and maintain a POS that meets the needs of students entering a career path.  The BSD School Board, teachers, and administration are committed to the core ideas of a standards-based system - https://www.beaverton.k12.or.us/depts/tchlrn/grdrpt  All SRHS students complete Student Education Plan and Profile activities to help them understand and prepare for college/career readiness - https://www.beaverton.k12.or.us/schools/southridge/academics/Pages/College-and-Career.aspx. Students in the POS can also complete their extended application / senior exhibition through the advanced courses in the program -- https://www.beaverton.k12.or.us/schools/southridge/academics/Pages/Graduation-Requirements.aspx

# 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

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➢ **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 an appropriate Addendum folder.  (Consult the ***Guide to Using the Oregon CTE Program of Study Application 2018***, for more details.)

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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)

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**Element 3 Comment Box:**

A. No unchecked boxes

B. Each June, the BSD will report enrollment and performance data (including TSA and industry credentials) on students who complete courses in state-approved career and technical programs.

C.The Engineering Technology Advisory Committee will meet annually to evaluate program vision, goals and priorities, revalidate industry skill standards and technical skill assistant, and participate in CTE teacher recruitment when necessary, and contribute to instructor appraisal and professional development.
Members of the Advisory Committee will be:
 Richard Turnock - PGE (Retired), Frosty Comer - Cook Security, Greg Goloborodko - Worksystems

D. The POS will be evaluated by POS teachers and the Engineering Technology Advisory Committee. The district CTE Coordinator requires each POS to be evaluated annually to ensure alignment with core requirements and include a plan for improvements. The 90% reports created from the data by the state data collection systems will be used to inform improvements within the POS and ensure that all measures are met.

• In Students will have the opportunity to learn in a contextual career related environment through the alignment of the program to industry declared skills and knowledge needs. Additionally, students will demonstrate their technical skills and academic proficiency through completion of the TSA and a capstone project and presentation to local industry professionals. Students are encouraged to adapt their capstone projects specifically to their personal interests and strengths while meeting industry requirements and performance outcomes.

• Data used in designing this POS was derived from the Oregon Department of Education's High-Wage, High-Skill, High-Demand Occupation resource. The data identified the occupations specific to Engineering Technology, and the POS teachers and the Advisory Committee distilled the skills required for these occupations. The courses identified for the POS were selected and fine tuned for these skills.

Data from the Oregon Skills Set Engineering Technology Cluster was used to design the POS. https://www.ode.state.or.us/search/page/?id=951

E.  The criteria used to measure POS success will be students technical skill acquisition (TSA), the number of participants, and the percentage of completers.

 F. Annual review of the POS evaluation by the POS teachers and Engineering Technology Advisory Committee will inform any changes that need to occur.

G. Secondary TSA: MWEC - PLTW - 3REG006
Post Secondary TSA: :2AREG011

# 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, ☐ FNRL, ☐ 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

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➤ **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 an appropriate Addendum folder. (Consult the ***Guide to Using the Oregon CTE Program of Study Application 2018***, for more details.)

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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

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**Element 4 Comment Box:**
A. No unchecked boxes.
B. Student guidance and information will be conveyed through POS brochures, posters, online resources and direct communication via POS teachers and classrooms, the Counseling Center, the Career Center and other avenues. The Southridge HS Tech Careers Pathway is available at https://www.beaverton.k12.or.us/schools/southridge/academics/Pages/Career-Academies.aspx

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• Program teachers will manage resources that catalogue students' self-identified chosen career and career path options, disseminate consistent and informed messages about career and possible financial options for post secondary education. Students will create an individual education plan and profile annually: https://www.beaverton.k12.or.us/schools/southridge/academics/Pages/College-and-Career.aspx

C. Beaverton School District Nondiscrimination Policy: https://www.beaverton.k12.or.us/about-us/Pages/Nondiscrimination-Policy.aspx

• BSD Policies and Regulations: https://www.beaverton.k12.or.us/dist/Pages/policies.aspx#Section-I

• The Engineering Technology POS will utilize locally sourced curriculum designed to meet the needs outlined by our advisory board.  Curriculum will align with the Oregon Skill Sets as well as specific cotent and skills identified as helpfu and necessary by post secondary partners.  Curriculum will align and encourage participation ina CTSO such as SkillsUSA and/or a local trade or industry organization.

• In addition to the support services embedded in course curriculum, Engineering classrooms will contain bulletin boards outlining student support services available to support their success in the courses. Student support services will include career education, direct individual advising from POS teachers, notification of outside resources and opportunities, and access to Advisory Committee members and their resources.

D. We will recruit all types of students with brochures, online resources, student news announcements, student advisory presentations and a curriculum night booth.

E. Student leadership opportunities will include participation in SkillsUSA at the local and state level, peer tutoring and mentoring in the community MakerSpace, cross-curricular outreach and collaboration with other academic departments, clubs and organizations, and management of the Engineering and Design club and inhouse 3Dhubs manufacturing business.

1. Relevent 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/
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, extra0curricular opportunities, and available college resources. .

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.*

<u>The planned professional development for this POS will</u>:

☒ 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.  <u>If you already have documents or files that do this more quickly</u>, simply attach those documents or files (or links to them) to this application in an appropriate Addendum folder.  (Consult the ***[Guide to Using the Oregon CTE Program of Study Application 2018](#)***, 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

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**Element 5 Comment Box:**

A. No unchecked boxes

 B. POS teachers will attend professional development opportunities via PACTEC that bring together similar programs of study and community college partners.
https://www.pcc.edu/pactec/

C. Teachers will also work with other CTE POS  teachers within the school and district and community college on curriculum and instruction and alignment to industry needs and community college requirments..

• Online PD and Community connection resources.
http://www.skillsusaoregon.org/Websites/skillsusaoregon/images/SkillsUSA%20Oregon%202017-18%20v1.pdf
https://www.worksystems.org/          http://allhandsraised.org/

• PD will be an ongoing ingrained process through program specific ILT work, local and regional conferences, and district CTE work.  Industry partners (listed above) will also push in and bring teachers into the community to align our work to their needs and build relationships.

• The 5-D Rubric requires 2 student growth goals per year. The process requires each teacher to conduct a self assessment on their skill level for each domain, gather pre-assessment data in the chosen areas of focus, create two student growth goals, gather and analyze data throughout the year,

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and finally report on goal progress and findings. The process helps teachers develop appropriate and useful assessment tools and strategies. The student growth goals can focus on improved instruction for special populations where the data suggests it is needed.

CTE Program Teachers are evaluated on the 5D framework.

• 5D framework
https://www.k-12leadership.org/content/service/5-dimensions-of-teaching-and-learning

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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 29, 2018*

## CTE **P**rogram **O**f **S**tudy …. 2018 **Application** (continued)

Oregon Department of Education | Oregon Department of Community Colleges and Workforce Development | Revised September 2017
2018 CTE Program of Study Application Form                                                                 Page 18 of 20

# 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. <u>All signatures must be on one form</u>. Email completed COA with ALL signatures to **POS.Application@ode.state.or.us**.

| Name of CTE POS | Engineering Technology |
|---|---|
| Name of Secondary School | Soutridge High School |
| Name of Community College | Portland Community College |

| SECONDARY LOCAL SUPPORT and CERTIFICATE OF ASSURANCE | 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: |
| Administrator's Name | Enter Local Administrator's Name | |

| LOCAL SUPPORT and CERTIFICATE OF ASSURANCE | The program advisory committee has been involved in the design and development of this program. | |
|---|---|---|
| Advisory Committee Signature | | Date: |
| Advisory Committee Member's name | Enter Advisory Committee Member's Name | |

| POST-SECONDARY LOCAL SUPPORT AND CERTIFICATE OF ASSURANCE | 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: |
| CC Administrator's Name | Kendra Cawley | |

**For Regional Coordinator Use Only**

**Recommended Status:**
☐ **RECOMMENDED FOR STATE APPROVAL (Perkins Eligible)**
☐ **DISAPPROVED (and returned for revision)**

_____          **Date:** _____
**Regional Coordinator Signature**
2A--Beth Molenkamp elizabeth.molenkamp@pcc.edu

**For ODE Use Only**

**Approval Status:**

☐ **FINAL STATE APPROVAL (Perkins Eligible)**          **Expiration Date:** _____
_____          **Date:** _____
**Education Specialist Signature**
Tom Thompson

# *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., "OregonTownHSAccounting2018."**
5.  **Create subfolders clearly named for each Element's Addendum that you are including with the application, e.g., "OregonTownHSAccounting2018Addendum1, "OregonTownHSAccounting2018Element1,"" or "OregonTownHSAccounting20181StandardsContent."**
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., "OregonTownHSAddendum1."**
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 page—please, no duplicate Assurance 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 (ODE FTP Site) and follow the online directions for sending your POS folder to** POS.Application@state.or.us**. For technical help with this procedure, call Kenzie Mozejko—503-947-5636.**
    c.  **Alternatively, you may save folders on a Jump Drive or CD-ROM and send to ODE, in care of: Kenzie Mozejko, Oregon Department of Education, PSB 2nd 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 29, 2018*
*Early Bird deadline (assures feedback before teachers leave for summer): April 30, 2018*

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