

**Docket Item:**

Community College Approval: Portland Community College, Associate of Applied Science in Civil and Construction Engineering Technology within 15.0201 Civil Engineering Technologies/Technicians.

**Summary:**

Portland Community College proposes a new Associate of Applied Science in Civil and Construction Engineering Technology. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After analysis, HECC staff recommends approval of the degree as proposed.

**Staff Recommendation:**

The HECC recommends the adoption of the following resolution:

RESOLVED, that the Higher Education Coordinating Commission approve the following degree: AAS in Civil and Construction Engineering Technology.



**Portland Community College seeks the Oregon Higher Education Coordinating Commission's approval to offer an instructional program leading to an Associate of Applied Science in Civil and Construction Engineering Technology.**

### **Program Summary**

The Civil Engineering Technology program will educate students in careers related to Engineered Construction and Municipal services. Graduates will have the ability to support construction-related surveying, soil testing, construction project management and, construction drafting and Building Information Modeling. These careers provide family wage jobs that support our diverse community by creating viable professionals that can pursue opportunity throughout their preferred career focus, community and municipalities. The program strives to be accessible by including foundation math and science courses that are offered multiple modalities district wide.

By focusing education on industry needs and holding strong relationships with regional industry partners the program will stay relevant and pertinent to its industry partners. Demonstrating the relevance by offering an industry-based educational focus to the community will reshape the student experience and ensure both the program and college is viable and relevant for the community and industries it serves.

#### **1. Describe the need for this program by providing clear evidence.**

The Civil Engineering Technology program will prepare students for occupations in disciplines associated with engineered construction and municipal services. Occupations include soil testing technician, construction surveying technician, construction drafter, assistant project manager, and engineering technician. Each of these occupations can be associated with the disciplines of Civil Engineering. For example, the construction drafter may work for an earth works and grading firm, a concrete design firm, a structural steel design or erection firm, a Heating, Ventilation and Air Conditioning firm, an exterior finish firm, a water or wastewater firm or a municipality. Each occupation has several discipline options associated with it.

According to the Oregon Employment Department Occupational Profile for the Civil Engineering Technician (SOC 173022), the following list of job titles are associated with the Civil Engineering Technology position in Oregon:

Computer Aided Drafting (CAD) Technician- Transportation  
Engineering Technician I, Engineering Technician II  
AutoCAD Technician  
Survey Technician

Testing Technician

Junior Structural Design Technician

According to the Oregon Employment Department Occupational Profile for the Civil Engineering Technician (SOC 173022), The Portland Metro region average hourly wage is \$31.46. The State of Oregon average hourly wage is \$30.08.

An annual percent increase in demand of 10% is predicted over the next ten years with 90% being replacement positions.

**2. *Does the community college utilize systemic methods for meaningful and ongoing involvement of the appropriate constituencies?***

To address the economic, community and education needs of students the Civil Engineering Technology program enlisted consultants to perform a Developing A Curriculum (DACUM) with regional industry partners. The first of a five-step process is to hold an industry meeting which was held in early March 2020. Eleven (11) current Civil Engineering Technicians spent two days with the consultant to document the tasks, knowledges, and skills local industry requires of its technicians. The output of the industry meeting was then verified through a survey completed in May 2020 by approximately 50 industry members. Curriculum development steps built from industry input are underway during summer 2020. It is expected that Course Content Outcome Guides for all courses will be prepared by September 2020. Each course is, as a result, built on the input of PCC's industry partners which will address the economic needs of the community and the educational needs of students by training students to meet industry needs.

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From these groups, an Advisory Board will be formed that will meet regularly to advise about industry trends and concerns as well as educational opportunities. They will participate in program review activities with the faculty from the discipline area.

**3. *Is the community college program aligned with appropriate education, workforce development, and economic development programs?***

The first course in the degree (CCET 100-Civil Engineering Construction Overview) is a dual credit course with local high schools and will provide an on ramp for the students into the degree. The Building Information Management (BIM) courses offer students new technology that can be applied in

jobs that will help move companies forward in more advanced surveying work. Information from the DACUM which involved industry professionals informed the development of the curriculum. A Verification Survey was administered to over 200 industry and human resource professionals which validated the information obtained in the DACUM.

**4. *Does the community college program lead to student achievement of academic and technical knowledge, skills, and related proficiencies?***

The degree was carefully designed by a dedicated group of faculty members to be inclusive to students who have not been historically represented in this career area. New technology (BIM) has been added to make students marketable in cutting edge technology. Supports like labs and tutors are in place to help with math studies and subject area studies. The degree was also designed to align with the newly proposed Geomatics AAS degree so students could apply the first two terms of coursework to either degree as they decide which educational and occupational pathway to pursue.

**5. *Does the community college identify and have the resources to develop, implement, and sustain the program?***

Portland Community College has determined that it has the resources needed to create and maintain the program. Measures have been put in place to make sure the program remains relevant to industry over time.

***Assurances***

Portland Community College has met or will meet the four institutional assurances required for program application.

1. *Access.* The college and program will affirmatively provide access, accommodations, flexibility, and additional/supplemental services for special populations and protected classes of students.
2. *Continuous Improvement.* The college has assessment, evaluation, feedback, and continuous improvement processes or systems in place. For the proposed program, there will be opportunities for input from and concerning the instructor(s), students, employers, and other partners/stakeholders. Program need and labor market information will be periodically re-evaluated and changes will be requested as needed.
3. *Adverse impact and detrimental duplication.* The college will follow all current laws, rules, and procedures and has made good faith efforts to avoid or resolve adverse *intersegmental* and *intra-segmental* impact and detrimental duplication problems with other relevant programs or institutions.
4. *Program records maintenance and congruence.* The college acknowledges that the records concerning the program title, curriculum, CIP code, credit hours, etc. maintained by the Office are the official records and it is the college's responsibility to keep their records aligned with those of the Office. The college will not make changes to the program without informing and/or receiving approval from the Office.