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www.oregon.gov/HigherEd

Docket Item:

Community College Approval: Portland Community College, Associate of Applied Science Degree in Creative Coding and Immersive Technologies within 50.0706 – Intermedia/Multimedia.

Summary:

Portland Community College proposes a new Associate of Applied Science Degree in Creative Coding and Immersive Technologies. 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 Creative Coding and Immersive Technologies.

Portland Community College

Portland Community College seeks the Oregon Higher Education Coordinating Commission's approval to offer an instructional program leading to an Associate of Applied Science Degree in Creative Coding and Immersive Technologies.

Program Summary

Creative Coding & Immersive Technologies (CCIT) offers students an opportunity to be a part of a new generation of multi-disciplinary artists, designers and creatives leveraging multi-disciplinary knowledge, new technologies, cultural awareness and equity frameworks to produce the art, media, entertainment, experiences and hardware of the future.

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

We see creative technologies woven throughout Portland's economy, as technology and software tools increasingly supplement/augment and mediate our increasingly complex and information-infused world. This is evident, for example, in Oregon's craft beer industry. As executive director of the Oregon Brewers Guild, Brian Butenschoen recently observed, "Oregon is a consistent leader in the U.S. for craft beer whether it's the number of breweries, the percentage of dollars spent on craft beer or the economic impact per capita by Oregon's breweries." As the number of craft beers proliferated greatly, it posed a challenge for pubs in the production, management and maintenance of menus—especially for pubs with extensive, rotating taps. The solution came with a UI (user interface) designed in Portland by the startup DitigalPour. Now featured in pubs throughout the country, DigitalPour "helps restaurants, breweries, tap houses & growler stations maximize draft sales and profitability with a robust customer-facing Digital Menu driven by a powerful back-end system that integrates with Point of Sale, website, mobile apps and social media." A simple but powerful interactive UI, DigitalPour illustrates the economic opportunities for creative software application development within the context of virtually any economic sector.

By analysts, Portland has been described as "the ideal place to be a player in . . . the new human-computer interfaces." These trends are especially important in the broader global context, wherein interactive and immersive technologies are fast growing markets. In a recent article titled "Oregon can be the Magrathea of AR & VR," the Oregon Games Organization reports that "the virtual and mixed reality markets are projected to be worth $150B by 2020. We're at the brink of the newest tech gold rush, and companies from video games to healthcare to the automotive industry are looking for the best places to develop for platforms like the Oculus Rift and Microsoft's Hololens."

The outlook for creative programming jobs in Portland is positive and exciting. The Creative Coding & Immersive Technologies Career program prepares Portland communities to be employees and leaders in Portland's, trend-setting, globally competitive creative coding and immersive technologies industry.

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

The program has an advisory board that meets regularly and advises program faculty about labor market and technology trends and needs. Details of industry needs were initially determined in May of 2016 through an Advisory Board meeting attended by 22 representatives of a wide variety of local creative technology businesses. Needs have since been continuously evaluated through routine conversations with industry. Most recently, input was gathered through an Advisory Board meeting on digital design organized by Portland Community College Vice President of Instruction, Katy Ho. During that meeting, industry affirmed a number of priority directions for Creative Coding & Immersive Technologies. One industry representative, Gabe Paez, for example, described "procedural design" as analogous in its transformational effect on industry to the industrial revolution. Another representative, Matt Henderson, underscored the importance in the coming decade of immersive, or spatial, computing.

The Advisory Board for CCIT includes, but is not limited to:

Alessandro Cipriani, Composer, educator and author

Maurizio Giri, Composer, educator and author

Dan Green, Founder of 4ms

Darwin Grosse, Director of Education and Support at Cycling '74, educator, author and recording engineer

Jill Herrera, Director of Finance at Cycling '74

Jason Kramer, Owner of Control Voltage

Peter Nyboer, Founding member and Director of Software at Livid Instruments, Designer with Sensel

Sue Slagle, Video Programmer

Nandini Ranganathan, Executive Director of Make + Think + Code

Darcy Neil, Circuit Designer and Animatronix Developer

Hugo Paris, Computer Programmer

Alyssa Derubeis, Executive Director of the Synth Library

Javad Butah, West Coast Representative for Ableton

Megan Branson, UX Designer, Mozilla

Troy Howard, Co-founder of Machine Learning for All

Joshua Young, Founder of Design Reality

Nick Cummings, Programmer

Autumn Rizzo, Animator

Matt Henderson, Found of Portland Immersive Media

Amber Case, Cyborg Anthropologist and Experience Designer

The need for an entry point to computer programming for students without the math and engineering competencies required for traditional Computer Science courses at PCC.

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

   The need for an entry point to computer programming for students without the math and engineering competencies required for traditional Computer Science courses. Rather than attempt to produce uniformity in student preparedness through a large number of prerequisites, Creative Coding & Immersive Technologies implements robust student-support services in classrooms and labs in order to identify and address the full variety of student needs in real time. The program is designed for students with no prior computer programming experience and without math competencies expected in PCC transfer Computer Science curriculum.

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

   The curriculum is developed in continuous conversation with industry globally, yet with an immediate, attention to unique, local and hyper-local, socio-economic trends. Of Portland, for example, engineer and programmer Paul Reynolds notes, "Portland has a healthy startup ecosystem of tech companies, independent developers and forward-thinking creatives. The area has established itself as a serious contributor to the open source software movement and the mobile computing boom . . . . This backbone, combined with . . . other factors . . . make Portland an ideal place to be a player in what I call `3D platforms'—the new human-computer interfaces that go beyond 2D screen displays and input." Cultural awareness and cultural competence are essential qualifications for employment in the program. During the application and interview process for positions in the program, the Screening Committee is as much interested in a candidate's cultural competence as they are in the candidate's content expertise. What a candidate knows is of little value if they are unprepared to share it with people of historically oppressed communities.

   Curriculum prioritizes students developing a positive, emotional relationship with course material over students developing technical familiarity with it. What matters in an introductory computer programming course, for example, is not whether students fully understand variables, conditionals, or logical operators, but whether they feel excited about coding and whether they experience coding as an ally in their search for social, economic, artistic and/or personal agency. If instructors are successful in supporting students in having this type of experience, the technical familiarity will come as the students spend more time coding.

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

   Portland Community College has the capacity to support the program and has dedicated support to do

so.

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 *inter*segmental 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.