

Docket Item:

Community College Approval: Mt. Hood Community College, Certificate of Completion in Computer Game and Mobile Applications Programmer Certificate, within 11.0299 - Computer Programming, Other.

Summary:

Mt. Hood Community College proposes a new Certificate of Completion, Computer Game and Mobile Applications Programmer Certificate. 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: Certificate of Completion in Computer Game and Mobile Applications Programmer Certificate.

Mt. Hood Community College seeks the Oregon Higher Education Coordinating Commission's approval to offer an instructional program leading to a certificate of completion in Computer Game and Mobile Applications Programmer Certificate.

Program Summary

The explosive growth in both the Video Game and Mobile Applications industries - with a projected combined market into the Trillions of dollars by 2022 - have created several opportunities for distinct, yet complementary training beginning at the community college level. Recent advances in technology, especially with mobile devices, demand a different level of training than has heretofore been available. This certification is designed to make available to students strong, competitive, and marketable skills which are in very high demand.

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

Research: Burning Glass Technologies (database)

Search criteria includes:

- Portland-Vancouver MSA
- Programs of Study: Associate Degree
- Computer and Information Sciences and Support Services
- Application Developer

Results - Occupational Demand

- 373 Job postings for software developer/applications (calendar year 2016)
- 14 different industries posting for this position
 - 80 of 373 from scientific and technical
 - 46 of 373 from educational services
 - 21 of 373 from healthcare and social assistance
 - 16 of 373 from accommodation and food service
 - 16 of 373 from retail trade
 - Remaining from manufacturing, administration, finance, insurance. Wholesale trade, transportation, and utilities
- Sample companies in the Portland-Vancouver MSA include:
 - OHSU
 - Ingersoll Rand
 - Daimler
 - Amazon.com
 - The Home Depot
 - City of Portland
- Skills Required (in addition to technology)
 - Project Management
 - RFP (Request for Proposal)
 - Budgeting
 - Customer Service
 - Performance Management
 - MS Office
- Education Levels requested (of 373 job postings)
 - Among four levels of education (HS, Associate, Bachelors, Masters, PhD)
 - 33% requested an associate degree (ranked 1st among all degrees)
 - 26% requested a bachelor's degree (ranked 2nd)
 - 13% requested a High School or vocational training (ranked 3rd)

Results - Occupational Supply

- 9 colleges reporting in the Portland - Vancouver MSA
- These 9 conferred 290 associates degrees in 2015
- ZERO degrees or certifications in iOS mobile applications development

Observations

- There is a significant current gap of 28 % between the demand for the job and the delivery of candidates that meet the employer requirements. This gap is growing.
- Median starting salary ranges: \$60,000 to \$100,000
- Unemployment rate for this skillset: 1.6%
- Employment opportunities for this skillset expected to increase by more than 30% by 2026
- Community Colleges are currently the primary source for companies recruiting to fill this need.
- Sixteen (16 %) percent of job postings for Associate Degree required less than 1 year of experience.
- Skill sets for the employer include non-technical knowledge and skills.
- The demand measured is strong across many (18) industries
- MHCC is positioned to be a primary source of graduates for employers. With good planning and execution potentially be the market leader.
- High schools are organizing more resources for app development introduction at the high school level. This provides MHCC with a rich opportunity to develop stronger pipelines among local high schools delivering students into a more robust education path and continue their studies.
- Computer and Information Technology Occupations (Bureau of Labor Statistics)
Employment of computer and information technology occupations is projected to grow 13 percent from 2016 to 2026, faster than the average for all occupations. These occupations are projected to add about 546,100 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security. The median annual wage for computer and information technology occupations was \$82,860 in May 2016, which was higher than the median annual wage for all occupations of \$37,040.
- US News and World Report: The 25 Best jobs of 2018 (10 Jan 2018)
 - Healthcare dominates the list (20 out of the 25).
 - Software Developer ranks #1
 - Source: Bureau of Labor Statistics

Source Documents

- Burning Glass Technologies: Labor Insights: Data analytics software company focused on the labor market. Provides employers, workers, and educators' current labor market data. (<http://burning-glass.com/about/>).
- Glassdoor: Organization that collects company reviews and real salary data from employers and employees. (<https://www.glassdoor.com>).
- State of Oregon Employment Department: Data and occupational profiles are collected and analyzed to reflect the current state of employment in various occupations and industries. (<https://www.qualityinfo.org/>).
- Bureau of Labor Statistics: (<https://www.bls.gov/ooh/home.htm>)

Data Sources and Limitations for Occupational Wages

Occupational wage data in Quality Info represent first quarter 2017 wages. The data used to create these estimates came from the Occupational Employment Survey. This survey samples more than 6,000 business establishments per year, taking three years to fully collect the sample of more than 18,000 establishments. The data used for the current wage estimates came from surveys that were conducted in 2013, 2014, 2015, and 2016. The wage data were then adjusted to 2017 using the Employment Cost Index. It is important to note that these wage rates may vary between industries, as well as by firm size within an industry. Also, when determining wage rates for individual occupations, it is important to assess current labor market conditions which may also affect wages. Annual wages are based on full-time employment. Not all jobs are full time.

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

This program has been created in collaboration with MHCC's office of instruction, the Dean of the Business Division, the college wide curriculum committee, the Information Systems department faculty (specifically in Computer Game Development and Information Technology), and the Business department faculty. Externally we have relied on input from our advisory committees which include Apple Corporation, and the existing Game Development Advisory Committee. In some cases, Apple Corporation has provided curriculum, textbooks, and software free of charge.

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

The proposed Computer Game and Mobile Applications Programmer certificate aligns with the current Board goals of transforming lives and serving the community. Students completing this program will be prepared to enter the workforce as entry-level programmers with experience in Swift Mobile Apps, Unity, Python, HTML, and JavaScript. Additionally, students will be trained creating appropriate User Interface (UI) and User Experience (UX). The curriculum in this training is designed to forward the student to completion with velocity and efficiency.

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

The design of the Computer Game and Mobile Applications Programmer certificate provides the student a guided pathway from start to finish with increasing levels of challenge. By design, early courses provide the basic groundwork for initial skill development. Second and third term course complete a framework by enhancing the students capacity for developing more complex programmatic solutions.

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

This certification shall be available for open enrollment. The capacity for this program shall be limited only by the available infrastructure of the college.

Assurances

Mt. Hood 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 *intrasegmental* 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.