

Docket Item: 6.2 - CONSENT ITEM: Columbia Gorge Community College - Professional Small Uncrewed Aircraft Systems, CC

Summary:

Columbia Community College proposes a new Certificate of Completion in Professional Small Uncrewed Aircraft Systems. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After analysis, HECC staff recommend approval of the certificate as proposed.

Staff Recommendation:

The HECC recommends the approval of the following: Columbia Gorge Community College, Certificate of Completion in Professional Small Uncrewed Aircraft Systems within 36.0207 – Remote Aircraft Pilot.

Recommended Motion:

Move to approve the following as presented: Columbia Gorge Community College, Certificate of Completion in Professional Small Uncrewed Aircraft Systems within 36.0207 – Remote Aircraft Pilot.



Columbia Gorge Community College seeks the Oregon Higher Education Coordinating Commission’s approval to offer an instructional program leading to Certificate of Completion in Professional Small Uncrewed Aircraft Systems.

Program Summary

The Professional Small Uncrewed Aircraft Systems certificate is primarily designed and intended to prepare students for a fast growing industry with many civilian applications, including: agriculture, wetlands maintenance, brownfields remediation, monitoring environment and wildlife, search and rescue, border security, fire mapping, surveying structures after natural disasters, transportation, construction maintenance, real estate photography, police surveillance, motion pictures, news media video and other industries.

Students will learn: UAS components and their applications; mission planning and execution; photogrammetry; data acquisition and analysis; infrared technology and thermal science. Legal and ethical issues of UAS operation will be addressed, as well as the evolving FAA rules and regulations.

Learner outcomes (knowledge and skill to be acquired.)

Students who successfully complete this certificate will be able to:

1. Demonstrate knowledge of UAS systems and the laws and regulations governing airspace and safety.
2. Demonstrate and execute tasks necessary to complete UAS operations and missions.
3. Exemplify a high standard of ethical and professional behavior.
4. Pass APSA – NIST certification exams
5. Develop and implement a business and operations plan for a UAS enterprise organization/venture.
6. Apply an understanding of photogrammetric data workflow.

•Alignment and articulation of these knowledge and skills with secondary and other post-secondary educational opportunities.

Several local high schools currently offer opportunities for students to obtain basic training and instruction in UAS. Students within these programs would be a good fit to continue their education at CGCC.

•How the program “fits” within a career pathway design.

The UAS program provides students with high wage and wide options for careers after graduation. The development of this program comes at the behest of the Bureau of Land Management’s need for training it’s employees in cartography and mapping applications. The program will also be available to the general

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public, providing access to drone technology training and licensing. Many public safety institutions are developing applications which will require the training this program provides.

•Career opportunities for students as a result of this education.

Career opportunities exist within multiple fields for drone operators. This program offers courses that aid students in obtaining employment in cartography, drone piloting, photography and photogrammetry.

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

Because Unmanned Aircraft Systems operation is a new, emerging field, there is limited employment projections for the state of Oregon. However, the FAA has released national data that reflects the need for this program. In March 2018, the FAA increased its previous projection for commercial drone pilots by 70,000, now predicted to reach more than 300,000 by 2022. With the positive industry indicators, the FAA envisions the total commercial drone population to exceed 600,000 in the early 2020s. The agency's published document details new potential drone designs that would "become operationally more efficient and safe, battery life expands and regulatory constraints are reduced."

In addition, Columbia Gorge Community College's STEM Advisory Committee includes representatives from Insitu (drone manufacturer), wind energy and agriculture – all who indicate the UAS industry will continue to grow and individuals trained in FAA regulations and Association for Unmanned Vehicle Systems International (AUVSI) training standards (of which Insitu helped develop) will be essential in the workforce.

AUVSI's "The Economic Impact of Unmanned Aircraft Systems Integration in the United States" report shows the economic benefit of UAS integration. AUVSI's findings show that in the first three years of integration more than 70,000 jobs will be created in the United States with an economic impact of more than \$13.6 billion. This benefit will grow through 2025 when we foresee more than 100,000 jobs created and economic impact of \$82 billion. This report also shows that an Oregon impact by 2025 will be: 2.986 new jobs; \$2,661,000 economic impact

Reference: chrome-

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Average salary in the United States:

An AUVSI economic report finds UAS operators' annual salaries typically start between \$45,000 and \$65,000 and can be considerably higher if stationed overseas. The report indicates that unmanned aircraft systems will have wide use in fields ranging from agriculture and delivery services to telecommunications and first response, far exceeding their primary use in military applications.

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

The program was developed collaboratively with input from the STEM advisory committee, part-time faculty from industry, full-time faculty from the Electro-Mechanical program, CGCC's CTE Dean and industry partners, including Intel, Insitu, Pix4D and Flir. The courses in this program are aligned with the Federal Aviation Administration (FAA) part 107 and the newly released Association of Unmanned Vehicle Systems International (AUVSI) T.O.P. training standards.

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

Several local high schools currently offer opportunities for students to obtain basic training and instruction in UAS. Students within these programs would be a good fit to continue their education at CGCC.

The UAS program provides students with high wage and wide options for careers after graduation. The development of this program comes at the behest of the Bureau of Land Management's need for training its employees in cartography and mapping applications. The program will also be available to the general public, providing access to drone technology training and licensing. Many public safety institutions are developing applications which will require the training this program provides.

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

CGCC's program will be preparing students to sit for AUVSI's Trusted Operator Program levels 1-3. It includes courses in photogrammetry and infrared technology and their application in public safety.

The program is designed to be short-term to accommodate working professionals or students taking other courses. Each course within the curriculum builds on the next and allows for incremental attainment of industry certifications at the end of each course. Courses are built on a lecture/lab format, including project-based learning and performance indicators as a measurement of program effectiveness. Careful attention will be given to program scheduling to facilitate student access and promote success and completion. Academic rigor is ensured through in-class evaluations of the courses. Qualified instructors from the industry and with the specific knowledge and experience will teach these course

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

The college administration has placed their support behind this program by budgeting resources to ensure the success of the students. Adequate funds have been allocated in the budget. All the courses for the certificate have been approved by the college's Curriculum Committee and the vice president of Instruction. The certificate has been approved by the college president and Board of Education.

The standard course tuition and fee, plus a lab fee, will fund the courses and there is a commitment to ensure classes will run as scheduled so the students will be able to follow the course of study provided.

Finally, the Department of the Interior has committed to enrolling current employees in this program from across the US, providing a steady stream of enrollees, and each will be financially sponsored by the DoI.

Assurances

Columbia Gorge 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.