

Docket Item:

Community College Approval: Columbia Gorge Community College, Certificate of Completion in Professional Small Unmanned Aircraft Systems, within 36.0119, Aircraft Pilot (Private).

Summary:

Columbia Gorge Community College proposes a new Certificate of Completion in Professional Small Unmanned Aircraft Systems. 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: CC in Professional Small Unmanned Aircraft Systems.



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

Program Summary

The sUAS Professional certificate provides education and training in the field of unmanned aviation operations. More commonly known as drones, unmanned aircraft represents a sector of aviation that is experiencing exponential growth. This certificate was developed to provide students and industry professionals fundamental skills in UAS operations to apply in diverse fields of employment, including search and rescue, fire operation, and law enforcement.

Students will learn UAS components and their application; 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.

Program Outcomes:

Students who complete this program 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 AUVSI Trusted Operator Program (TOP) certification exams 1 and 2, and sit for TOP certification exam 3.

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.

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.

Columbia Gorge Community College (CGCC) has had an ongoing academic agreement with Embry-Riddle Aeronautical University for the last 10 years and will be working with them to align this program to their UAS program. CGCC's student services department strongly supports the offering of this program to address student interest and requests. The program has received the approval of the college Board of Education and CGCC leadership.

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

Only two community colleges in Oregon offer an award in unmanned aircraft systems, COCC and Lane CC. COCC's program focuses on launch, flight and recovery and sensor management. Lane's program is commercial aircraft focused, but does include part 107 pilot licensing and Pix4D certification, as will CGCC's program. Students could move to Lane's program with these credentials.

CGCC's program will also 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. As mentioned previously, CGCC's ongoing relationship with Embry-Riddle Aeronautical University provides students the opportunity to transfer and earn their bachelor's degree. With respect to secondary collaboration, again, because this field is new and emerging, area high schools have not developed programs that would allow for dual credit or articulation. Although, secondary students in robotics programs may have interest in the program.

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

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 courses.

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 for development of new courses, additional instructor and equipment have all been allocated in next year's budget. All the courses for the degree have been approved by the college's Curriculum Committee and the vice president of Instruction. The degree 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.

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.