

Docket Item:

Community College Approval: Columbia Gorge Community College, Associate of Applied Science in Aviation Maintenance Technology, within 47.0607 Airframe Mechanics and Aircraft Maintenance Technology/Technician.

Summary:

Columbia Gorge Community College proposes a new Associate of Applied Science in Aviation Maintenance 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 Aviation Maintenance Technology.



COLUMBIA GORGE
COMMUNITY COLLEGE

Columbia Gorge Community College seeks the Oregon Higher Education Coordinating Commission's approval to offer an instructional program leading to an Associate of Applied Science in Aviation Maintenance Technology.

Program Summary

The Aviation Maintenance Technology certificate and AAS degree prepare students to test for the FAA A&P (Airframe and Powerplant) mechanic certificate. Skills in general maintenance are taught, including applying basic electricity, conducting aircraft inspections, and recognizing repair needs. The student will understand airframe structures, including landing gear, hydraulic and pneumatic power systems and navigation systems. In addition, powerplant theory and maintenance will be taught, including reciprocating and turbine engines, instrument systems and fuel metering systems. Student will also have the opportunity for real-world practicum experiences.

Student Learning Outcomes

Students who successfully complete this degree will be able to:

1. Service, maintain, troubleshoot and repair airplanes and rotorcraft.
2. Perform proficient, entry-level aviation maintenance skills.
3. Apply knowledge of FAA regulations and industry standards.
4. Apply math and physics principles in solving problems associated with aviation maintenance.
5. Communicate effectively verbally and in writing.
6. Use critical thinking and problem solving skills to identify and resolve aviation maintenance issues.
7. Work effectively in a team and/or group setting.
8. Sit for the Federal Aviation Administration (FAA) certification exams (written, oral and practical) for the airframe and powerplant (A&P) airman certificate.

Career opportunities

Students completing the Aviation Maintenance Technology AAS and successfully passing the industry exams are prepared to enter the aviation workforce as an airplane or helicopter mechanic, an aerospace technician, or an avionics technician.

Alignment and articulation

North Wasco County School District has been an active partner in the development of CGCC's Aviation Maintenance program. They have participated in program planning meetings and provided technical input on facility options. While there are currently no career ladders or pathways from the high school

to the Aviation Maintenance program, there are plans to develop these once the program is implemented at the college.

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

Due to the FAA requirement of 1900 hours of instruction for all aviation maintenance training programs, there are no short-term certificates for this program. However, students will have the option to complete the two-year certificate and/or take additional general education courses to complete the AAS.

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

The Bureau of Labor Statistics and Oregon Employment Department (qualityinfo.org) estimate current Oregon Aviation Maintenance jobs to be approximately 1,440 with a projected increase of 13% over the next 8 years. Central Oregon jobs in this field are projected to increase by 38%, Portland area jobs by 15%, and Columbia Gorge jobs by 12%. According to Boeing’s Pilot & Technician Outlook report for the period of 2019-2038, 769,000 new maintenance technicians will be needed globally over the next 20 years and 193,000 within the US alone. Currently, the number of mechanics retiring will outpace those entering the profession. The average age of today’s mechanic is 51.

Aviation employers in the Columbia Gorge face the same workforce issues with current mechanics aging out and retiring and no trained individuals following in their footsteps. As the Columbia Gorge Regional Airport and Hood River Airport continue to grow, there will be an ongoing need for trained aviation mechanics.

Boeing updated the Pilot & Technician Outlook document to factor in the impact of COVID. The 2020-2039 document states “Despite a large number of aircraft in storage, technicians continue to play a vital role in ensuring the aircraft remain airworthy. Improper or incomplete maintenance could lead to corrosion, damaged wires and other issues that lead to more extensive and expensive repairs. The need for continued maintenance of the parked fleet has mitigated the impact on technician employment worldwide.”

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

Columbia Gorge Community College has support and encouragement to develop this program from the City of The Dalles, Port of The Dalles, Columbia Gorge Regional Airport, Hood River Airport, Wasco and Klickitat Counties, North Wasco County School District, as well as local businesses and patrons.

The Federal Aviation Administration (FAA) office that serves the Columbia Gorge responded quickly to the local interest to offer an Aviation Maintenance program. Their initial visit two years ago confirmed

the need for the program and encouraged CGCC to consider an accelerated program. CGCC continues to work with the FAA to ensure proper steps are followed to reach an FAA approved program.

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

The Mid-Columbia Economic Development District conducts a Columbia Gorge Economic Development Strategy (CEDS) process every five years. The 2017-2022 CEDS report lists CGCC's Aviation Maintenance Training and the associated facility as one of the top ten regionally significant projects. The CEDS committee consists of county, city, tribal, port, chamber, healthcare, workforce and higher education representatives from the five county service area.

North Wasco County School District has been an active partner in the development of the Aviation Maintenance program. They have participated in program planning meetings and provided technical input on facility options. While there are currently no career ladders or pathways from the high school to the Aviation Maintenance program, there are plans to develop these once the program is implemented at the college.

Students who wish to continue their education can transfer to Bachelor degrees at Embry Riddle Aeronautical University, including Aviation Maintenance Science, Aviation Business Administration or Aerospace Engineer.

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

The design of the Aviation Maintenance Technology (AMT) program was completed using Federal Aviation Administration (FAA) required curriculum content, Lane Community College's AMT curriculum guides and CGCC's course outcomes guides. Fifteen AMT courses have been approved by CGCC's curriculum committee, including course outcomes and technical content. The FAA clearly lists their expectations and technical content for Aviation Maintenance programs. Content is split between three focus areas with a required number of instructional hours for each: General (400 hours), Airframe (750 hours), and Powerplant (750 hours). General includes topics such as the use of aircraft drawings, symbols and schematics; weight and balance checks; and aircraft ground operations. Airframe includes aircraft structures and their materials, assembly and rigging, and aircraft inspections. Powerplant includes engine operations and inspections, engine fire protection systems, and fuel metering systems.

In addition to the courses approved by the curriculum committee, a two-year certificate of completion and an AAS degree option were approved. The certificate of completion includes related instruction courses, stand-alone and embedded; and the AAS degree includes the required number of general education courses. Prerequisites to enter the program are reading and writing 115 and math 65.

Students will be encouraged to be full-time to accommodate the rigor of the program.

A unique feature of CGCC's AMT program is that it is structured for a student to complete the certificate of completion in 15 months and/or the AAS degree in 18 months. This structure was instituted at the recommendation of the FAA. While this structure makes for a concentrated, full-time program for students, CGCC will build in the necessary supports to help students succeed, including tutoring, study groups and recitations prior to exams.

Program quality and design is assessed through CGCC's cyclical 5-year Program Review process. Program Review includes assessment of trends in student achievement (student learning outcomes, certificate completion, employability), review of courses (alignment with professional and national standards, currency and relevance) as well as current labor market information and employment opportunities. Student and advisory committee feedback is integral in the review process.

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

Columbia Gorge Community College has identified the required resources to offer a successful Aviation Maintenance Technology program and has made the commitment to move forward with implementation. To date, CGCC has secured a temporary warehouse facility at the local port to house the program until a hangar at the Columbia Gorge Regional Airport can be built. A grant has been written to secure funds for the construction of the hangar and associated airport infrastructure. CGCC is actively seeking equipment donations and will be hiring a full-time faculty to start January 1, 2021. The college's 2020-21 adopted budget includes adequate resources for equipment and supply purchases.

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 *intrasemental* 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.