

Annual Report for Assessment of Outcomes -- AMT

(For Degree, Certificate or Core Outcomes)

To complete this Assessment Report, please address the questions below, and send to learningassessment@pcc.edu by **June 20, 2011**; subject line: REPORT Assessment [SAC]

1. Describe changes that have been implemented towards improving students' attainment of outcomes that resulted from outcome assessments carried out in the previous academic year.

(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.iii (for Core Outcomes) or 6.B.iii (for CTE Degree and Certificate outcomes).

In 10-11, all SACs should have reported on the Critical Thinking Core Outcome. Were any changes to content, materials, pedagogy, etc made as a result?

The curriculum is governed by 14CFR Part 147 regulations. While our program meets the regulatory minimums, our program is not prevented from going above and beyond such minimums to satisfy the demands of rapid technological advancement that is characteristic in the industry.

Revision to the Degree and Certificate Outcomes were proposed just this year as a follow through to the evaluation of Embedded Related Instruction within the AMT curriculum. Significant outcome changes were primarily in the form of better alignment of the course outcome wording, enhancing the clarity for outside evaluators.

In 2008 the AMT Department changed the way it offers the Practicum courses. It used to offer two Practicum courses, Airframe and Powerplant. It now offers three practicum courses; General, Airframe and Powerplant. By adding a General Practicum course the material taught in the other General courses is tested in the General Practicum course while the students have just completed the General courses. This permits them to have the General course information more current in their memory, instead of about a year after taking the other General courses as it was before the change. The credit hours for the Practicum courses went from four to two credit hours. However, with the addition of General Practicum, the total Credit Hours for all three courses is now six. Additionally, the written test part of the Practicum courses is now done "on-line" and there is significantly more instructor one-on-one contact time for Oral/Practical assessment. Since this change is relatively new, the AMT Department is still evaluating the effectiveness of this change. This change should improve student retention and program outcome awareness.

2. Identify the outcomes assessed this year, and describe the methods used.

What were the results of the assessment (i.e., what did you learn about how well students are meeting the outcomes)?

(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.i& ii (for Core Outcomes) or 6.B.i & ii (for CTE Degree and Certificate outcomes)

Critical Thinking and Problem Solving

Critical thinking and problem solving is a consistent theme throughout the program. The AMT program outcomes are very focused on this subject. These outcomes are embraced in each course, with a progressive degree of emphasis and the capstone courses that are in the program focus on this summative skill development. Program outcomes are listed:

- Make independent and accurate airworthiness judgments in the process of inspecting and maintaining aircraft structures and powerplants in accordance with applicable airworthiness requirements.
- Develop and implement a plan for aircraft maintenance action based on research and understanding of appropriate maintenance and inspection data.
- Troubleshoot aircraft structures, powerplants and their associated systems with a discerning recognition of the specific malfunction within the scope of the overall aircraft and associated systems and accomplish the correct maintenance action that will allow approval for return to service of the affected items.
- Develop and act upon a personal attitude and plan of "Safety Awareness" and compliance that includes one's self, ones' co-workers, the work area, and the aircraft.
- Satisfy the FAA required competencies for completing the required written, oral and practical exams for the Airframe and Powerplant ratings of the FAA Mechanic certificate.
- Integrate airframe and powerplant knowledge to create adaptable solutions to evolving problems satisfying the greater aviation maintenance industry need. 1.2010

a. Describe the method(s) you used.

Include relevant information about:

- The students (how many, where in your program (one class, a group of classes, end of degree?)
- The nature of the assessment (written work, project, exam, performance task, observation etc).
- How was the assessment evaluated?

Individual course outcomes, program wide, are assessed by three general methods, written, oral and practical examination. Evidence that students meet course outcomes is shown through two methods. Within each course, students complete a series of readings, quizzes and tests, designed to indicate comprehension of the course material through a written medium. Students indicate practical knowledge of and skill with course material through completion of a set of prescribed projects. All three assessment components, written, oral and practical, have been developed to meet a set of FAA prescribed knowledge and skill objectives, outlined in 14 CFR Part 147.

Course outcomes are defined for each course and also for the program. The expectation that students will become problem solvers, able to draw upon many sources and engage in a process of synthesis and analysis in their efforts to find solutions is basic in the AMT course of study

and industry employment settings. The department continues to seek additional methods of providing feedback regarding accomplishment of student outcomes.

Some current methods of determining that students are meeting course outcomes include:

1. Lab projects on aircraft and aviation equipment based upon the content and outcomes for each course that are evaluated by instructors, and documented in the student's progress records.
2. Course final testing required by the FAA curriculum, with results also recorded in the students' progress records.

Program review, confirmation of competencies, and identification of weaknesses is accomplished in the Practicum portion of the program that is scheduled at the end of the program courses for each certification rating (Airframe, Powerplant). Deficiencies that have either persisted or developed since specific courses were taken, are identified and addressed through assigned work, including applicable hands-on projects, focused in the deficient areas.

Successful completion of each course, accompanied by the instructor certification of specific student competencies, provides documentation of outcomes being met.

b. Results: What did you learn?

How well did your students do? Do the assessment results match your aspirations for your students? Did your assessment indicate any areas or aspects in which student achievement could be better?

(If your assessment was scored in some way, it would be helpful to report some of that information. Scores that can be taken apart into meaningful components are often helpful in determining areas that might need attention.)

Graduates of the program apply to the FAA for certification tests including written, oral and practical components. Written test results are published and show that graduates of the PCC AMT program are achieving a near 100% first time take pass rate with an average test score of 89%, (These data are well above the national norm) and have been doing so for a significant period. Oral and practical test results are not reported, but anonymous and informal data is available from the FAA Designated Mechanic Examiners (DMEs) that are administering these tests. The two DMEs that have provided oral and practical tests to PCC program graduates over the past few years report that 95% of the applicants are passing these tests on the first attempt. Based on this feedback, program and course outcomes are being met.

3. Identify any changes that should, as a result of this assessment, be implemented towards improving students' attainment of outcomes.

(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.iii (for Core Outcomes) or 6.B.iii (for CTE Degree and Certificate outcomes)

This is an important part of what is expected as a result of assessment. It is not enough to say "we are doing great". We are expected to be self-examining, and curious about what we might do better.

The recent change, described above, is an example of an assessment-driven change to improve

outcomes. Through a change in the distribution of the program assessments made through the AMT Practicum experiences, instructors now have additional, more focused time to spend evaluating the oral knowledge and practical skills of the students. This is occurring when students have a chance to show comprehensive knowledge and skills, in a “whole-aircraft” scenario.