

Annual Report for Assessment of Outcomes 2012-13

Subject Area Committee Name: Aviation Science

Contact person: Katie E. Leonard Floyd

For CTE: Degree or certificate* assessed: Aviation Science – Airplane and Helicopter

*please attach a table showing the alignment of the degree or certificate outcomes with the College Core Outcomes

Please address the questions below and
send to learningassessment@pcc.edu by **June 21, 2013** with Annual Report in the subject line

Alignment of degree outcomes with college core outcomes

Degree Outcome	Core Outcome
<i>Students who complete this degree should be able to:</i>	
<ul style="list-style-type: none"> • Exercise the privileges of the FAA certificates appropriate to the pilot career that they seek: <ul style="list-style-type: none"> ➤ Commercial Pilot certificate with [airplane single- and multi-engine and instrument airplane ratings] OR [rotorcraft helicopter and optional instrument helicopter rating]. ➤ Flight Instructor certificate with [airplane single- and multi-engine and instrument airplane ratings] OR [rotorcraft helicopter rating]. 	Critical Thinking and Problem Solving Professional Competence
<ul style="list-style-type: none"> • Use knowledge and understanding of pilot industry trends, positions and operations gained in the Aviation Science program to: Implement a career plan; make informed career decisions; pursue the position of their choice in the aviation industry; and identify additional opportunities for advancement including advanced degrees and training to remain competitive in the pilot industry. 	Community/Env Responsibility Critical Thinking/Prob solving Cultural Awareness Self-Reflection
<ul style="list-style-type: none"> • Research, interpret and evaluate the following prior to each flight such that the safe, efficient and legal outcome of a flight is never in doubt: <ul style="list-style-type: none"> ➤ Pilot self-assessment of fitness, proficiency and ability. ➤ Aircraft airworthiness and capabilities. ➤ Environmental conditions. ➤ Other operational considerations. 	Communication Critical Thinking/Prob solving Professional Competence Self-Reflection
<ul style="list-style-type: none"> • Communicate clearly and concisely, both verbally and in writing, with fellow pilots, employers and the aviation community. 	Communication Cultural Awareness
<ul style="list-style-type: none"> • Accurately performs calculations as required for flight operations and company records. 	Professional Competence Critical Thinking/Prob Solving
<ul style="list-style-type: none"> • Operates aircraft consistent with an understanding of its impact on the environment, the community and the economic success of the company that employs them. 	Community/Environmental Responsibility Critical Thinking/Prob Solving Professional Competence
<ul style="list-style-type: none"> • Show respect for all individuals regardless of race, religion, cultural background, economic background or other differences. 	Cultural Awareness Community / Environmental Responsibility

1. Describe changes that have been implemented towards improving students' attainment of outcomes that resulted from recent outcome assessments. These may include but are not limited to changes to content, materials, instruction, pedagogy etc. Please be sure to **describe the connection** between the assessment results and the changes made.

Changes to flight & ground training: *Since the Aviation Science program was created in 1999, the portion of the degree involving earning FAA pilot licenses and certificates has always been composed of two pieces: Flight training and ground training. Flight training is done in airplanes and helicopters through our contracted flight training provider, Hillsboro Aviation. Ground training has been accomplished in a number of ways over the years – in-classroom or online through PCC; and in-classroom, one-on-one or one-on-three through Hillsboro Aviation. In 2006 and 2007, the department began offering the PCC ground training solely in an online modality. Since moving online, completion rates for the ground training done through PCC have fallen, despite frequent tweaks and changes to the online ground training, as well as exceptional instructor effort. Simultaneously, students and flight instructors have reported better achievement of outcomes for ground training done directly through Hillsboro Aviation. As a result, during the 2012-'13 academic year the aviation science department pushed through changes to all three degrees that will result in the online ground schools being deactivated and all future ground training done directly through Hillsboro Aviation. These changes were approved by the Curriculum and Degrees & Certificates committee in June, and are scheduled to be implemented in winter term 2014.*

For each outcome assessed this year:

2. Describe the assessment design (tool and processes) used. Include relevant information about:
 - The nature of the assessment (e.g., written work, project, portfolio, exam, survey, performance etc.) and if it is direct (assesses evidence mastery of outcomes) or indirect (student's perception of mastery). Please give rationale for indirect assessments (direct assessments are preferable).
 - The student sample assessed (including sample size relative to the targeted student population for the assessment activity) process and rationale for selection of the student sample. Why was this group of students and/or courses chosen?
 - Any rubrics, checklists, surveys or other tools that were used to evaluate the student work. (Please include with your report – OK to include in appendix). Where appropriate, identify benchmarks.
 - How you analyzed results, including steps taken to ensure that results are reliable (consistent from one evaluator to another).

This year, the Aviation Science department took a more global approach and focused on all six of the degree outcomes, using a survey of all current students and graduates to gather information. The survey (included in the appendix) posed questions on how well students feel they are meeting the degree outcomes, and which classes they feel contribute to their ability to meet each outcome.

- *Indirect assessment (survey of current students and graduates): Since many of the Aviation Science degree outcomes are more likely to be realized in students' post-college career, the department felt a survey of graduates would provide feedback that will be useful in implementing future changes to existing and newly-approved courses. (Survey details in Appendix 1.)*

- *Student sample assessed: Survey was originally sent to all seven students slated to graduate at the end of spring term 2013. Three of these students responded. The survey was also provided to all approximately 120 currently-enrolled flight students, of which an additional 12 responded.*
 - *Tools used to evaluate responses: Data from the 15 survey responses was compiled into a graphic for easier consumption (see last page).*
 - *Analysis of results: Data from survey was discussed by both faculty department chairs and analyzed for trends.*
3. Provide information about the results (i.e., what did you learn about how well students are meeting the outcomes)?
- If scored (e.g., if a rubric or other scaled tool is used), please report the data, and relate to any appropriate benchmarks.
 - Results should be broken down in a way that is meaningful and useful for making improvements to teaching/learning. Please show those specific results.

Several trends emerged from the survey.

- *The majority of students identified flight and ground training as contributing significantly to their achievement of all six outcomes. This is not surprising given that the flight and ground training comprise approximately two-thirds of the credits required for our AAS degrees.*
 - *The majority of students were unaware that degree outcomes exist, and that our classes are supposed to prepare them to meet these outcomes.*
 - *Students who were closer to graduation (i.e., those who had taken most or all of the aviation science classes) gave answers that matched up more appropriately with the department's expectations, whereas students who had completed less of the degree requirements were more likely to try to match up classes inappropriately based on the existing classes they had taken.*
4. Identify any changes that should, as a result of this assessment, be implemented to help improve students' attainment of outcomes. (These may include, but are not limited to, changes in curriculum, content, materials, instruction, pedagogy etc).

The department is in agreement that degree outcomes need to be better communicated to all students early in the program, as well as the department's intended purpose for each aviation science class in terms of helping each student meet the degree outcomes. The following changes or further study are recommended:

- *Individual course instructors should point out at the beginning of the term how their course fits in with the department's expectations of achieving degree outcomes. For example, at the beginning of AVS-227: Aviation Careers, the instructor should point out that this class is intended to help students meet degree outcomes #2 and #4.*
- *Course outcomes should be revisited to ensure alignment with the degree outcomes they support.*

5. Reflect on the effectiveness of this assessment tool and assessment process. Please describe any changes to assessment methodology that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome). Is there a different kind of assessment tool or process that the SAC would like to use for this outcome in the future? If the assessment tool and processes does not need to be revised, please indicate this.

The survey would likely have provided a larger pool of responses if students had more time to respond. During the 2013-'14 academic year, the survey will be provided to students who are on-track to graduate at the beginning of the term in which they are slated to graduate. Hopefully, offering more time to complete the survey and focusing only on students who are nearly done with their coursework will provide more accurate and abundant information.

Although indirect assessment is not a preferred method, the aviation science department believes that good information can still be obtained from this survey in the future, possibly when paired with direct assessments that attempt to link course outcomes with degree outcomes. The department has begun discussions on how to better compose questions in order to gain more nuanced feedback.

Appendix 1: Aviation Science degree outcome survey

Please indicate the following:

- Name (optional)
- How far through your flight training you are
- How many non-flight aviation classes you have completed
- If you have graduated or are on-track to graduate at the end of this term

For each of the six degree outcomes, the following format was used:

Degree outcome X:

- Description of outcome
- How well do you think you can meet this outcome? (5-level Likert scale)
- Which class(es) do you think best prepared you to meet this outcome? (List of aviation science classes)
- Comments

