Aeronautical Technology
Assessment of Student Learning Report
2013

A. Program Information

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Program:	Aeronautical Technology
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B. Outcome Reporting

Student Learning Outcome

1. Demonstrate the ability to work on diverse multi-disciplinary teams. (Diversity)

2. Demonstrate a global perspective on sustainable aviation business practices. (Knowledge)

3. Choose ethical courses of action within the operational environment. (Professional integrity)

4. Demonstrate a lifelong commitment to personal excellence through service and continuing education. (Knowledge)

5. Appraise unsafe operational conditions within the aviation environment. (Professional Integrity)

6. Evaluate the effectiveness of oral and written communication skills. (Communications)

7. *Creatively solve technical problems related to the aviation workplace using math and science. (**This SLO is degree option and/or certificate specific; assessment of this SLO is outlined in the abbreviated assessment plan for each option/certificate available at the department level; the abbreviated plan is only for this SLO*). (Critical thinking)

Assessment Method(s)

Direct Measures
SLO 1 is assessed by a team work project in BUS 315 that is scored with a rubric.

Team Work

Students	Years	Unacceptable	70/100 acceptable	80/100 Proficient	90/100 exemplary
34	2011-2012	9	6	12	7
17	2012-2013	3	3	3	8

SLO 6 is assessed by a written assignment in ENGL 302 that is scored with a rubric.

Written Communication

Students	Years	Unacceptable	70/100 acceptable	80/100 Proficient	90/100 exemplary
35	2011-2012	8	2	8	17
None Received	2012-2013				

SLO 7 Unmanned Aerial Systems

Eight out of ten students completing AVT 497 (senior project - UAS) will successfully perform an autopilot integration on a small unmanned aircraft. Out of the eight auto pilot integrations, six students will successfully install and operate a payload system.

Students	Years	Autopilot integration acceptable	Operate payload system exemplary
1	2011-2012	1	0
3	2012-2-13	0	1

Two students have incompletes on this project.

SLO 7 Professional pilot

Eight out of ten students completing AVT 242 Aviation Meteorology will successfully pass an oral examination on Direct User Access Terminal (DUAT) service for pilots.

Meteorology

Students	Years	<80 Unacceptable	80/100 acceptable	90/100 Proficient	95/100 exemplary
37	2011-2012	3	1	9	24
55	2013-2014	2	2	27	26

SLO 7 Aviation Maintenance

The goals are that 85% of students will pass their FAA test on their first attempt.

Initial Testing	Total Students	Unacceptable	Proficient	Percentage
Knowledge Test	35	0	35	100%
Oral test	35	3	32	91.14%
Practical Test	35	5	30	85.71%

SLO 7 Airport Management

The average first time pass rate for the AAAE test is 40%. Our goal is that 5 out of 10 students will pass the test on their first attempt.

Initial Testing	Total Students	Unacceptable	Proficient	Percentage
2012-2013	5	5	0	0

SLO 7 Avionics. Understand the complexities of avionics in all categories of civil aircraft and demonstrate an understanding of past, present and future avionics technologies.

Our goal is 8 out of 10 students at the proficient level.

STUDENTS	SCHOOL YEAR	<70 Unacceptable	70-85 Acceptable	85-94 Proficient	95-100 Exemplary
7	2012-13	4	2	1	0

SLO 7 Avionics. Demonstrate an understanding of avionics installation, troubleshooting, repair and maintenance techniques compatible within aircraft design, performance and operational parameters.

Our goal is 8 out of 10 students at the proficient level.

STUDENTS	SCHOOL YEAR	<70 Unacceptable	70-85 Acceptable	85-94 Proficient	95-100 Exemplary	Course
3	2012-13	0	0	0	3	AVT 330
6		2	0	2	2	AVT 428
3		0	0	0	3	AVT 429
8		0	0	4	4	AVT 430

SLO 7 Avionics. Demonstrate skills necessary to perform as an avionics professional.

Our goal is 8 out of 10 students at the proficient level.

STUDENTS	SCHOOL YEAR	<70 Unacceptable	70-85 Acceptable	85-94 Proficient	95-100 Exemplary	Course
6	2012-13	2	1	2	1	AVT 428
3		0	0	1	2	AVT 429
8		0	2	6	0	AVT 430

SLO 7 Professional Pilot Students will be able to describe the operation and limitations of advance aircraft systems. 75% of the students will score 75% or better on the systems portion of the final examination in PPIL 325.

Students	School Year	Unacceptable	Acceptable	Proficient	Percentage
25	2012-2013	3	6	16	64

SLO 7 Professional Pilot Students will demonstrate appropriate aeronautical decision making based on meteorological conditions, human factors and safety. 75% of the students will score 85% or better on

scenario #2 in PPIL 387 and scenario #4 in PPIL 416.

	Total Students	Unacceptable	Acceptable	Proficient	Percentage
PPIL 387	12	4	4	4	33
PPIL 416	16	0	4	12	75

SLO 7 Professional Pilot Plan and organize flights to demonstrate proficiency at the flight instructor and multiengine rating level. The goal is that 8 out of 10 students will pass their FAA Practical test on their first attempt.

Initial Testing	Total Students	Unacceptable	Proficient	Percentage
PVT	81	6	75	93
IRA	96	19	77	80
COM	47	7	40	85
CFI	44	11	33	75
CFII	17	0	17	100
ME	31	3	28	90

.....Assessment 2 and expected level of performance

Indirect Measures

SLO 1 is measured by the senior survey. Our goal is that 8 out of 10 students will rate their progress on their ability to work as a member of a team as some or very much.

Team Work

Students	Years	None	Very Little	Some	Very much
16	2011-2012	3	1	6	6
17	2012-2013	0	1	11	5

SLO 3 is measured by the senior survey. Our goal is that 8 out of 10 students will rate their progress of understanding the ethical standards of the aviation discipline as some or very much.

Ethical Standards

Students	Years	None	Very Little	Some	Very much
17	2012-2013	0	2	10	5

SLO 4 is measured by the senior survey. Our goal is that 8 out of 10 students will rate their progress as a lifelong learner as some or very much.

Life Long Learning

Students	Years	None	Very Little	Some	Very much
17	2012-2013	0	1	8	8

SLO 6 is measured by two items on the senior exit survey. Our goal is that 9 out of 10 students will rate their improvement in oral and written communications as some or very much.

Oral Communication

Students	Years	None	Very Little	Some	Very much
16	2011-2012	2	1	4	9
17	2012-2013	0	1	11	5

Written

16	2011-2012	2	0	4	10
17	2012-2013	0	4	9	4

Results

Our first time pass results of our Aviation Management students taking the American Association of Airport Executives (AAAE) have been disappointing. Our aviation management faculty, which includes an advisory board member, met with a current student and the Assistant Department Head to determine what can be done to improve student performance. It was decided that several areas needed attention. A new class is being developed to introduce students to the AAAE modules earlier in their education. A course is being divided into two to allow more time to cover the content of the modules. Pilot ratings are being removed as a requirement to allow those physically not able to pass an FAA physical to enroll in the program, but a flight lab which will not require solo flight is being added so that students will still get a flight experience.

Our ATC certificate and option have suffered low enrollment since they were instituted. We were not selected as a Collegiate Training Initiative (CTI) school on our last submission. Based on the fact that graduates of CTI schools are having to wait two years before being accepted at the FAA Academy it did not appear that our graduates would have viable careers in ATC. We have submitted paperwork to delete these curricula from our offerings.

Many of our flight training devices are about 20 year's old, generic and do not allow for training in the glass cockpit technology that is available in our aircraft. In order to improve our training and reduce the cost to students, the department purchased two flight training devices a C172R and a C172S model. We have eliminated a Frasca 141 and an AST3000 simulator. We have reviewed the cost of our multiengine training aircraft and find that the increasing cost of spare parts is driving up our cost per hour and the age of the aircraft is resulting in increased down time. We are looking at replacing our multiengine aircraft and buying a representative flight training device.

This is the first year for assessing the avionics SLOs. We are going to wait another year to establish the base line before making changes. In one course we did find that avionics students had difficulty on an assignment to write a factual or fictional paper about an avionics invention they created. The avionics advisory council recommended that the instructor give the students additional options such as a research paper or redesign project.

In Maintenance this year, the areas of welding, aircraft drawings, aircraft hydraulics and aircraft standards (documentation of records and logbooks), powerplant overhaul and engine electrical were identified as areas needing more emphasis to improve our student passing rate. Our student FAA initial test rate is high, above assessment projections. Still following an assessment feedback loop we always strive to make our program curriculum better. Based on testing observations from FAA Examiners (Sojka and Smith) areas in welding, aircraft drawings, aircraft hydraulics, aircraft standards (documentation of records and logbooks), powerplant overhaul and engine electrical were identified as areas needing more emphasis to improve student passing rate. This information was verbally provided to the Aviation Maintenance faculty. The teachers providing instruction in these mentioned areas will reevaluate their course offerings and methodology, placing emphasis on areas needing enhanced. The results will surface at our next year assessment snapshot.

In order to support SLO 2 global perspective on sustainable business practices we have been trying to get more students involved in international experiences. In order to establish contacts in foreign

countries our department head and a faculty member toured several universities in Australia. We also had a faculty exchange with Worms University in Germany. We have a student doing an exchange in England this academic year and two students in a global logistics class that will be traveling to Europe for a week.

Our UAS option is making changes to the course names and content based on feedback from students that have gone through the program, informal discussions with industry regarding their desired skills, and a desire for a more streamlined and defined curriculum. They did not solicit formal feedback from industry, instead this is a combination of a lot of lessons learned over time.

.....Results from assessment 2 and what was learned from the results

This year we are able to look at senior survey results by option. Some of the Aviation Accreditation Board International aviation core areas, which are include in the pilot curriculum are not in the maintenance curriculum because of the high number of hours in the A&P certificate. We have significantly lower reported progress by maintenance students in the areas of safety, human factors, airport, airspace and ATC and meteorology. We are making several changes in the maintenance curriculum in order to allow students to complete their A&P certificate by the end of their junior years so that they can utilize their A&P certificate during their senior year and they will have had some practical experience when they graduate.

In SLO 1 teamwork we saw some encouraging improvement. Last year only 12 out of 16 felt they had improved their teamwork skills while this year we saw 16 out of 17 express a positive result.

Our initial results for SLO 3 choosing ethical courses of action are encouraging with 15 out of 17 students indicating that they feel they are progressing toward understanding the ethical standards of the aviation discipline. We will continue to gather data on this SLO.

Our initial results for SLO 4 lifelong learning are encouraging with 16 out of 17 students indicating that they feel they are progressing toward being lifelong learners. We will continue to gather data on this SLO.

In SLO 6 oral and written communication skills, we saw mixed results with some improvement in oral skills and some decrease in their views of their written skills.