Aeronautical Technology
Assessment of Student Learning Report
2014

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)

SLO 1 (teamwork) is evaluated in BUS 315 Supervisory management using a rubric to grade a major assigment submitted in that class. All aviation students take BUS 315 and those taking it in spring and summer are included in our sample. Our expectation is that all students will perform at the acceptable level and that 8 out 10 will be at the proficient level or higher.

SLO 2 (Global perspective on sustainable business practices) are measure by the number of students we enroll in COT 499 which includes a trip to Europe to study International Project Management, Concepts in Global Logistics, or Marketing and Rural Development. Topics rotate by semester. Our goal is to enroll 10 students each academic year.

SLO 5 Professional Pilot Students will demonstrate appropriate aeronautical decision making based on meteorological conditions, human factors and safety in PPIL 387 and 416. Three out of four students will score 85% or better on scenario #2 in PPIL 387 and scenario #4 in PPIL 416. All professional pilot students are required to take PPIL 387 and most students going to the airlines take PPIL 416.

SLO 6 (written) is evaluated in ENGL 302 Technical Writing using a rubric to grade a major paper submitted in that class. All aviation students take ENGL 302 and those taking it in the fall , spring and summer semesters are included in our sample. Our expectation is that all students will perform at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 6 (oral) is evaluated in AVT 445 Aviation Law on oral research presentations. All helicopter and professional pilot students take this class results are from the fall and spring semesters. Our expectation is that all students will be at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 7 (Airport Management) is evaluated on the basis of test results from the American Association of Airport Executives test that is given in conjuction with AVT 464. Airport Certified Manager during the spring semester. 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.

SLO 7 (avionics 1) Avionics installation and troubleshooting is evaluated in a series of lab assignments and tests. A rubric is used to assess students' understanding and utilization of repair and techniques and troubleshooting. All students in AVT 330, 428, 429 and 430 are evaluated. Our expectation is that all students will be at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 7 (avionics 2) Demonstrated skills of an avionic professional is evaluated in labs and on the final evaluation. All students in AVT 330, 428, 429 and 430 are evaluated. Our expectation is that all students will be at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 7 (avionics 3) Understanding the complexities of avionics in all categories of civil aircraft and understanding avionics technologies is measure by exam and final grade in AVT 315. Our expectation is that all students will be at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 7 (Maintenance) The goals are that 85 out of 100 students will pass their knowledge, oral and practical tests on their first attempt.

SLO 7 (Professional Pilot 1) Systems Training requires students to describe the operation and limitations of advance aircraft systems. Seventy five out of 100 students will score 75% or better on the systems portion of the final examination in PPIL 325.

SLO 7 (Professional Pilot 2) All professional pilot students take FAA knowledge tests for ratings in the following ground school classes: PPIL 111, PPIL 112, PPIL 211, PPIL 312 and PPIL 482. Our goal is that all students are at the acceptable level and that 8 out of 10 will be at the proficient level or higher.

SLO 7 (Professional PIlot 3) All professional pilot students take end of course practical tests for PPIL 113, PPIL 114, PPIL 213, PPIL 263, PPIL 314, and PPIL 483. Our goal is that 8 out or 10 students pass the FAA practical test on the first attempt.

SLO 7 (Unmanned Aircraft Sytems) All unmanned aircraft systems student intergrate an autopilot and payload in AVT 497. 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.

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.

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.

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.

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.

Results

SLO 1

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
38	2013-2014	7	8	4	19

SLO 2

Years	Students Enrolled
2012-2013	5
2013-2014	8

SLO 5

	Total Students		Unacceptable <70	Acceptable 70-84	Proficient 85-100
PPIL 387	12	2012-2013	4	4	4
PPIL387	24	2013-2014	4	4	16
PPIL 416	16	2012-2013	0	4	12
PPIL 416	8	2013-2014	2	4	2

SLO 6 (written)

Students	Years	Unacceptable	70/100 acceptable	80/100 Proficient	90/100 exemplary
35	2011-2012	8	2	8	17
None Received	2012-2013				
37	2013-2014	3	3	7	24

SLO 6 (oral)

Students	Years	Unacceptable	70/100 acceptable	80/100 Proficient	90/100 exemplary
34	2012-2013	0	4	15	15
38	2013-2014	1	13	4	23

SLO 7 Airport Management

Initial Testing	Total Students	Unacceptable	Proficient	Percentage
2012-2013	5	5	0	0
2013-2014	3	2	1	33

SLO 7 Avionics 1. Understand the complexities of avionics in all categories of civil aircraft and demonstrate an understanding of past, present and future avionics technologies.

STUDENTS	**SCHOOL YEAR**	**<70 Unacceptable**	**70-85 Acceptable**	**85-94 Proficient**	**95-100 Exemplary**
7	2012-2013	4	2	1	0
13	2013-2014	0	2	6	5

SLO 7 Avionics 2. Demonstrate an understanding of avionics installation, troubleshooting, repair and maintenance techniques compatible within aircraft design, performance and operational parameters.

STUDENTS	**SCHOOL YEAR**	**<70 Unacceptable**	**70-85 Acceptable**	**85-94 Proficient**	**95-100 Exemplary**	**Course**
3	2012-2013	0	0	0	3	AVT 330
6	2012-2013	2	0	2	2	AVT 428
3	2012-2013	0	0	0	3	AVT 429
8	2012-2013	0	0	4	4	AVT 430
7	2013-1014	0	0	0	3	AVT 330
4	2013-1014	0	0	1	3	AVT 428
4	2013-1014	1	1	2	4	AVT 429
0	2013-1014	0	0	0	0	AVT 430

SLO 7 Avionics 3. Demonstrate skills necessary to perform as an avionics professional.

STUDENTS	**SCHOOL YEAR**	**<70 Unacceptable**	**70-85 Acceptable**	**85-94 Proficient**	**95-100 Exemplary**	**Course**
6	2012-2013	2	1	2	1	AVT 428
3	2012-2013	0	0	1	2	AVT 429
8	2012-2013	0	2	6	0	AVT 430
6	2013-2014	2	1	2	1	AVT 428
3	2013-2014	0	0	1	2	AVT 429
8	2013-2014	0	2	6	0	AVT 430

SLO 7 Maintenance Management

2013-2014				
		General		
	Total Students	Unacceptable	Proficient	Percentage
Knowledge Test	9	0	9	100.00%
Oral test	25	0	25	100.00%
Practical Test	25	0	25	100.00%
		Airframe		
Knowledge Test	12		12	100.00%
Oral test	18	0	18	100.00%
Practical Test	18	3	15	83.30%
		Powerplant		
Knowledge Test	10	0	10	100.00%
Oral test	20	1	19	95.00%
Practical Test	20	2	18	90.00%

SLO 7 Professional Pilot 1

Students	School Year	Unacceptable	Acceptable	Proficient	Percentage
25	2012-2013	3	6	16	64
46	2013-2014	3	7	36	78

SLO 7 Professional Pilot 2

Type	**Year**	**<70 Unacceptable**	**70-79 Acceptable**	**80-89 Proficient**	**90-100 Exemplary**	**Total**
PAR	2013-2014	19	14	24	10	67
IRA	2013-2014	14	22	14	2	52
CAX	2013-2014	2	7	32	11	52
FIA	2013-2014	2	7	25	12	46
FII	2013-2014	0	0	6	15	21
FOI	2013-2014	2	5	19	21	47
TOTAL	2013-2014	39	55	120	71	285

SLO 7 Professional Pilot 3

	Initial Testing	Total Students	Unacceptable	Proficient
2012-2013	PVT	81	6	75
2013-2014	PVT	48	8	40
2012-2013	IRA	96	19	77
2013-2014	IRA	49	8	41
2012-2013	COM	47	7	40
2013-2014	COM	50	6	44
2012-2013	CFI	44	11	33
2013-2014	CFI	32	6	26
2012-2013	CFII	17	0	17
2013-2014	CFII	28	0	28
2012-2013	ME	31	3	28
2013-2014	ME	34	0	34

SLO 7 Unmanned Aircraft Systems

Students	Years	Autopilot integration acceptable	Operate payload system exemplary
1	2011-2012	1	0
3	2012-2-13	3	3
3*	2013-2014	2	2

*One incomplete from U2014

Assessment 1 Narrative

SLO 1 Needs work. We still have about 2 out of 10 at the unacceptable level and only 6 out the 8 that we desire out of 10 at the proficient or higher level. We will gather data for one more year and then see if we need to introduce more team presentations and activities prior to students taking BUS 315.

SLO 2 Needs work. We increased the number participating from 5 to 8 this year. We have had several students express an interest in going to Italy for Marketing/Communications in the spring. We hope to make our goal of 10 students in 2014-2015.

SLO 5 Needs work. We are about at the 6 out of 10 level. At this point we are only assessing PP students. We need to develop metrics for assessing our other options.

SLO 6 Written Needs work. We achieved 8 out of 10 at the proficient level or higher, but had 3 students at the unacceptable level. We need to identify students who are struggling and get them assistance sooner.

SLO 6 Oral Needs work. We are at the 7 out of 10 proficient or higher level with only 1 student at the unacceptable level. Common problems are reading slides, speaking to the screen and not the audience, poor pronunciation and lack of confidence. We will emphasize these points in the classes with presentation requirements that lead up to AVT 445.

SLO 7 (Airport Management) Needs work We had our first graduate pass the AAAE test on his first attempt. He was one of three taking the exam so we were close to our desired 5 out of 10 pass rate on the first attempt. We implemented several curriculum changes in the fall of 2014 so that faculty have more time going over the modules on which the AAAE examination is based so it will take about 4 years to see if these changes are effective. In the meantime we are trying to include more emphasis on the modules in our existing classes.

SLO 7 (Avionics 1) Met. We are at the 8 out of 10 proficient or higher with no unacceptable scores.

SLO 7 (Avionics 2) Needs work. We are at the 8 out of 10 at the proficient or higher, but one student had an unacceptable.

SLO 7 (Avionics 3) Needs work. We are about at the 7 out of 10 proficient or higher and have 2 at the unacceptable level. We will collect data for one additional year before we make any changes to this program.

SLO 7 (Maintenance) 8 of 9 parts Met. The students taking the airframe practical test did not meet our goal. We needed one additional student to pass the test. We are in the middle of a major curriculum overhaul of the Maintenance Program. We are including areas of concentration in the program and moving toward Engineering Technology teaching some of the general subjects such as drawing, basic electricity, and welding.

SLO 7 (Professional Pilot 1) Met. We were at 78 out of 100 at the proficient level.

SLO 7 (Professional Pilot 2) Need Work. We are almost at the 7 out of 10 students at the proficient level which is close to our goal of 8 out of 10, but we had 39 out of 285 students at the unsatisfactory level. This year we have implemented a new Cessna pilot center curriculum in our ground school classes. This computer based systems uses a gated system so students have to correct their work to continue. It also has a large number of video presentations that student can review as many times as they desire until they get the teaching points. We will continue to gather data and compare results with previous years using the Jeppesen text.

SLO 7 (Professional Pilot 3). Met. Almost 9 out of 10 students passed the practical test on the first attempt.

SLO 7 (UAS) Met. Students were 2 for 2 with one incomplete from the summer semester.

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

Our indirect results are obtained from the senior survey. In switching to a new system, our aviation specific questions were not included in this years questionaire.

C. Program Self Review

Faculty Review of Annual Assessment Data

The results were electronically distributed to the faculty so that they could review the results prior to a department meeting. The results will be shared with our aviation advisory board on Oct 24, 2014 during our semi-annual meeting to seek their input and guidance.

The professional pilot program has switched to a Cessna Pilot Center curriculum from the Jeppsen text that we used previously in hopes of decreasing the number of private and instrument knowledge test failures. The maintenance program is doing complete curriculum revision to reduce the number of hours in the A&P certificate in order to have more hours to develop areas of concentration in order to develop more well rounded maintenance professionals. Our airport management curriculum is being changed to delete the requirement to be a pilot, while maintaining some flight experience that will be done with a flight instructor but not require a medical or to perform maneuvers to pilot standards. This will open the program to those who previously could not meet the pilot medical standards and hopefully increase enrollment. It also focuses on the AAAE modules to better prepare students for the AAAE examinations which is required to become an accredited airport executive. In the helicopter program, we are developing some of the upper division courses to be delivered online so that students who leave after they get their instructor ratings can complete their degree online and help us improve our six years graduation rate. Our UAS program is deleting their certificate program and adding a minor to better meet industry needs. The course descriptions of several UAS courses are being changed to keep up with industry needs in this fast changing new program.

Future Plans

We have yet to address SLO 3 and 4. The faculty have discussed possible methods of assessment and I believe during the course of this year we will develop a methodology and implement assessment during the 2015-2016 academic year.

Summary of this Report as it is Posted on your Website

Over the last 8 years we have increased the number of degree options from two to six all of which have a common core of general education classes. We have upgraded training devices by selling our old Frasca 141 and AST 3000 simulators and buying Paradigm flight training devices. We have obtained a Frasca Mentor FTD as a donation from Yingling Aviation. We have just about completed an aircraft replacement plan that calls for purchasing 2 aircraft per year starting with our Bonanzas. We have hired a ground operations manager and have a search in progress for a flight operations manager, which are new positions to improve our flight training. We are in the process of purchasing another electro tug to speed up ground operations on the ramp. Our maintenance program is in the middle of a complete curriculum revision. Several of the general classes such as basic electricity, drawing, and welding will be taught by engineering technology. Areas of concentration have been added and the number of hours in the A&P certificate will be reduced to allow classes to be added to make more well-rounded graduates. The professional pilot curriculum has switch from a Jeppesen text to the Cessna Pilot Center Curriculum in an effort to boost pilot knowledge test scores. The UAS program is changing their certificate program to a minor. We continue to wait for FAA regulations concerning UAS to be published which could cause changes to our program. Our avionics program continues to struggle with low enrollment making it difficult to have sufficient numbers for a valid assessment. Our helicopter program also has low enrollment and the high cost of the program will probably continue to keep numbers low. The initial lack of success of our airport management students on the AAAE exam caused us to revamp the curriculum to put more emphasis on the AAAE modules. Our flight team won the Loening Trophy at the National Intercollegiate Flying Association national competition which is report to be given to the outstanding all around collegiate aviation program in the nation.