

**Attachment 1**  
**NEW CERTIFICATE PROGRAM**

**Unmanned Aerial Systems (UAS) Operators Certificate**

1) Purpose:

This certificate program provides students with solid foundational knowledge in the emerging and rapidly growing field of Unmanned Aerial Systems. It builds on a basic knowledge of aviation flight theory and application and prepares students for future positions in which they will operate or coordinate the operation of unmanned aerial systems.

Prerequisites for courses in this certificate necessitate basic airman certification and training by the FAA or its International Civil Aviation Organization (ICAO) member equivalent agency.

This certificate program enhances student opportunities at K-State by allowing them to take advantage of growing career opportunities previously unavailable to them.

2) Requirements:

PPIL 270 Introduction to Unmanned Aerial Systems (3)

PPIL 360 Unmanned Aerial Systems I (3)

PPIL 460 Unmanned Aerial Systems II (3)

3) Desired outcomes:

The UAS Certificate Program prepares students to:

- a. Demonstrate the skills necessary to safely integrate the operation of Unmanned Aerial Systems into the national and international airspace systems.
- b. Understand the complexities of unmanned aerial systems integration into the airspace system and realize the hazards to air navigation if accomplished improperly.

4) Assessment procedures:

- a. Students shall demonstrate satisfactory subject matter mastery by maintaining a GPA of 3.0 for courses within the certificate program.
- b. In the final course (Unmanned Aerial Systems II) of the certificate program each student is required to pass a final comprehensive practical and written examination during which the students demonstrate, in an actual or electronically simulated environment, the procedures necessary to plan, execute (to include launch and recovery), and complete a successful mission involving using an unmanned aerial system to include payload integration.
- c. Full assessment plan is attached.

5) Estimated budget and staff required:

Budgetary and staff impacts shall be minimal, since existing part-time faculty members will be used to deliver the required courses. In addition, existing department faculty possess the skills necessary to deliver the certificate course content if needed. Resources for this program will be supported by resources from the K-State Unmanned Aerial Systems Office.

**Degree Program**  
**Assessment of Student Learning Plan**  
**Department of Aviation**  
**Unmanned Aerial Systems (UAS) Operators Certificate**  
Kansas State University

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**College, Department, and Date**

College: Technology and Aviation  
Department: Aviation  
Date: 10 October 2008

**Contact Person(s) for the Assessment Plans**

Dr. Kurt Barnhart (785) 826-2972

Degree Program

Certificate Program in Unmanned Aerial Systems Operation

Assessment of Student Learning Three-Year Plan

**1. Student Learning Outcome(s)**

**a. List (or attach a list) all of the student learning outcomes for the program.**

Graduates of the Unmanned Aerial Systems Operators Certificate Program will be prepared to:

- Demonstrate the skills necessary to safely integrate the operation of Unmanned Aerial Systems into the national and international airspace systems.
- Understand the complexities of unmanned aerial systems integration into the airspace system and realize the hazards to air navigation if accomplished improperly.
- Understand and be able to convey the role unmanned aerial systems play in industrial, military, and homeland security missions.

**b. Identify outcomes that will be assessed in the first three years of the plan.**

*All SLOs will be assessed during the first three years of the program.*

Relationship to K-State Student Learning Outcomes (insert the program SLOs and check all that apply):

Program SLOs	University-wide SLOs (Undergraduate Programs)					Program SLO is conceptually different from university SLOs
	Knowledge	Critical Thinking	Communication	Diversity	Academic / Professional Integrity	
1.	X	X				No
2.	X	X	X			No
3.	X	X	X			No

**2. How will the learning outcomes be assessed? What groups will be included in the assessment?**

[Briefly describe the assessment tools, measures, or forms of evidence that will be utilized to demonstrate students' accomplishment of the learning outcomes selected in the three-year plan. Also indicate whether each measure is direct or indirect. If you are unsure, then write "Unsure of measurement type". There is an expectation that **half of the assessment methods/measures** will be direct measures of student learning (see **Measures, Rubrics, & Tools for Assessing Student Learning Outcomes** on the APR website for examples of direct and indirect measures).]

SLO	MEASURES		WHO IS ASSESSED?
	DIRECT	INDIRECT	
Airspace Integration Skills	<ol style="list-style-type: none"> <li>Student Self report after completion of PPIL 460</li> <li>Cumulative assessment upon completion of PPIL 460.</li> <li>Employer Feedback</li> </ol>	Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.	<ol style="list-style-type: none"> <li>Students</li> <li>Employers</li> </ol>
Hazards to integration	Cumulative Assessment given upon completion of PPIL 460.	Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.	Students
UAS mission role	Cumulative Assessment given upon completion of PPIL 460.	Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.	Students

**3. When will these outcomes be assessed? When and in what format will the results of the assessment be discussed?**

[Briefly describe the timeframe over which your unit will conduct the assessment of the learning outcomes selected for the three-year plan. For example, provide a layout of the semesters or years (e.g., year 1, year 2, and year 3), list which outcomes will be assessed, and which semester/year the results will be discussed and used to improve student learning (e.g., discussed with faculty, advisory boards, students, etc.)]

SLO	TIMETABLE FOR ASSESSMENT OF SLO			CREATION OF BASELINE
	2009-2010	2010-2011	2011-2012	
Airspace Integration Skills	PPIL 270	Cumulative Assessment in PPIL 460	Cumulative Assessment in PPIL 460	After fall of 2012
Hazards to integration	PPIL 270	Cumulative Assessment in PPIL 460	Cumulative Assessment in PPIL 460	After fall of 2012
UAS mission role	PPIL 270	Cumulative Assessment in PPIL 460	Cumulative Assessment in PPIL 460	After fall of 2012

**4. What is the unit's process for using assessment results to improve student learning?**

*[Briefly describe your process for using assessment data to improve student learning.]*

Faculty involved will coordinate and solicit feedback annually from industrial partners and employers following the establishment of a baseline in the fall of 2012. This solicitation will serve as a basis for any needed curriculum additions or deletions.