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

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):

<table>
<thead>
<tr>
<th>Program SLOs</th>
<th>Knowledge</th>
<th>Critical Thinking</th>
<th>Communication</th>
<th>Diversity</th>
<th>Academic / Professional Integrity</th>
<th>Program SLO is conceptually different from university SLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>2.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>3.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

**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).]

<table>
<thead>
<tr>
<th>SLO</th>
<th>MEASURES</th>
<th>DIRECT</th>
<th>INDIRECT</th>
<th>WHO ISASSESSED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airspace Integration Skills</td>
<td>1. Student Self report after completion of PPIL 460</td>
<td>Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.</td>
<td></td>
<td>1. Students</td>
</tr>
<tr>
<td></td>
<td>2. Cumulative assessment upon completion of PPIL 460.</td>
<td></td>
<td></td>
<td>2. Employers</td>
</tr>
<tr>
<td></td>
<td>3. Employer Feedback</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazards to integration</td>
<td>Cumulative Assessment given upon completion of PPIL 460.</td>
<td>Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.</td>
<td></td>
<td>Students</td>
</tr>
<tr>
<td>UAS mission role</td>
<td>Cumulative Assessment given upon completion of PPIL 460.</td>
<td>Observation and class participation in PPIL 270, PPIL 360, and PPIL 460.</td>
<td></td>
<td>Students</td>
</tr>
</tbody>
</table>

**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.).]
<table>
<thead>
<tr>
<th>SLO</th>
<th>TIMETABLE FOR ASSESSMENT OF SLO</th>
<th>CREATION OF BASELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009-2010</td>
<td>2010-2011</td>
</tr>
<tr>
<td>Airspace Integration Skills</td>
<td>PPIL 270</td>
<td>Cumulative Assessment in PPIL 460</td>
</tr>
<tr>
<td>Hazards to integration</td>
<td>PPIL 270</td>
<td>Cumulative Assessment in PPIL 460</td>
</tr>
<tr>
<td>UAS mission role</td>
<td>PPIL 270</td>
<td>Cumulative Assessment in PPIL 460</td>
</tr>
</tbody>
</table>

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.