

# Program-Level Assessment Plan

Program: Aerospace Engineering	Degree Level (e.g., UG or GR certificate, UG major, master's program, doctoral program): UG
Department: N/A	College/School: Parks College / School of Engineering
Date (Month/Year): 11-5-20	Primary Assessment Contact: Jayaram

Note: Each cell in the table below will expand as needed to accommodate your responses.

#	Student Learning Outcomes	Curriculum Mapping	Assessment Methods	
			Artifacts of Student Learning (What)	Evaluation Process (How)
	<p>What do the program faculty expect all students to know or be able to do as a result of completing this program?</p> <p>Note: These should be measurable and manageable in number (typically 4-6 are sufficient).</p>	<p>In which courses will faculty intentionally work to foster some level of student development toward achievement of the outcome? Please clarify the level at which student development is expected in each course (e.g., introduced, developed, reinforced, achieved, etc.).</p>	<p>1. What artifacts of student learning will be used to determine if students have achieved this outcome?</p> <p>2. In which courses will these artifacts be collected?</p>	<p>1. What process will be used to evaluate the artifacts, and by whom?</p> <p>2. What tools(s) (e.g., a rubric) will be used in the process?</p> <p>Note: Please include any rubrics as part of the submitted plan documents.</p>
1	To practice the principles of engineering in aerospace or allied organizations	<p>This criterion maps well to our existing ABET accreditation criterion 1, which includes three assessment points:</p> <ul style="list-style-type: none"> <li>- Early/introduced: ESCI 2100 Statics</li> <li>- Middle/developed: AENG 3220 Aerodynamics</li> <li>- Late/reinforced: AENG 4110 Flight Vehicle Structures</li> </ul>	<ol style="list-style-type: none"> <li>1. Artifacts will include collections of homework, exam problems and projects that demonstrate competence in the listed outcome.</li> <li>2. The courses are identified in the previous block at left.</li> </ol>	<ol style="list-style-type: none"> <li>1. Faculty in charge of each class collect the materials and fill out a form including their judgement of achieving the outcome, and then faculty convene to discuss assessments for all courses</li> <li>2. The assessment forms will be used (a sample is included with this plan document).</li> </ol>
2	To pursue further learning in aerospace engineering or in allied disciplines	<p>This criterion maps well to our existing ABET accreditation criterion 7, which includes three assessment points:</p> <ul style="list-style-type: none"> <li>- Early/introduced: ESCI 2300 Thermodynamics</li> <li>- Middle/developed: AENG 3150 Astroynamics</li> </ul>	Same as above	Same as above

		- Late/reinforced: AENG 4004 Design I		
3	To function as effective engineers with professional knowledge, skills, and values	This criterion maps well to our existing ABET accreditation criterion 4, which includes three assessment points: <ul style="list-style-type: none"> <li>- Early/introduced: AENG 1001 Intro to Engineering</li> <li>- Middle/developed: AENG 2000 Introduction to Aeronautics and Astronautics</li> <li>- Late/reinforced: AENG 4014 Design II</li> </ul>	Same as above	Same as above
4				
5				

### Use of Assessment Data

1. How and when will analyzed data be used by program faculty to make changes in pedagogy, curriculum design, and/or assessment practices?  
 Criterion-specific data will be analyzed by program faculty in a meeting to occur at the end of every semester along with the assessment for our ABET accreditation. The next planned assessment meeting will occur before the spring 2021 semester.
2. How and when will the program faculty evaluate the impact of assessment-informed changes made in previous years?  
 Program faculty will evaluate the impact of changes by comparing the assessment (from previous semesters) scores achieved on the assessment forms completed for each program outcome listed above. Since they already map well to existing ABET accreditation processes, we will consider them for HLC purposes as well.

### Additional Questions

1. On what schedule/cycle will program faculty assess each of the program's student learning outcomes? (Please note: It is not recommended to try to assess every outcome every year.)  
 As mentioned above, program objective 1 maps to ABET criterion 1, which will be evaluated on a three-year cycle according to the AE assessment plan already established for our ABET accreditation. Similarly, program objective 2 maps to ABET criterion 7 and program objective 3 maps to ABET criterion 4, and both of these will be evaluated every three years according to the ABET assessment plan. A copy of this plan for 2019-2021 is included with this document.
2. Describe how, and the extent to which, program faculty contributed to the development of this plan.  
 All program faculty have discussed the ABET accreditation plan and agreed upon the artifacts, methods, and timing of assessments during the spring 2019 semester.

**IMPORTANT: Please remember to submit any rubrics or other assessment tools along with this plan.**

**ABET Outcomes associated with mapping to HLC outcomes**

	AE Assessment Points			ME Assessment Points			When
	Early	Middle	End	Early	Middle	End	
1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	ESCI 2100 Statics	AENG 3220 Aerodynamics	AENG 4110 Flight Vehicle Structures	ESCI 2100 Statics	MENG 2300 Applied Thermodynamics	MENG 3510 Material Science	Summer 2019
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	AENG 1002 CAD	AENG 3000 Performance	AENG 4004 Design I	MENG 1002 CAD	MENG 3010 Machine Design	MENG 4004 Design I	Winter 2020
3. an ability to communicate effectively with a range of audiences	AENG 1001 Intro to Engineering	ESCI 2150 Dynamics	AENG 4014 Design II	MENG 1001 Intro to Engineering	ESCI 2150 Dynamics	MENG 4014 Design II	Summer 2020
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	AENG 1001 Intro to Engineering	AENG 2000 Intro to AE	AENG 4014 Design II	MENG 1001 Intro to Engineering	MENG 2000 Intro to ME	MENG 4014 Design II	Summer 2019
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	AENG 2000 Intro to AE	ESCI 3101 Mechanics of Solids Lab or AENG 3100 CAE	AENG 4004 Design I	MENG 2000 Intro to ME	ESCI 3101 Mechanics of Solids Lab or AENG 3100 CAE	MENG 4004 Design I	Winter 2021
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	ESCI 3201 Fluids Lab	ESCI 3101 Mech of Solids Lab	AENG 4111 AE Lab	ESCI 3101 Mech of Solids Lab	ESCI 3201 Fluids Lab	MENG 3001 ME Lab	Summer 2020
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	ESCI 2300 Thermodynamics	AENG 3150 Astrodynamics	AENG 4004 Design I	ESCI 2300 Thermodynamics	AENG 3100 Computer-Aided Engineering	MENG 4004 Design I	Winter 2021