2013-2014 Assessment Report
Program: Aerospace Engineering, MS/MAE

Samuel Ginn College of Engineering
Aerospace Engineering
Aerospace Engineering, MS/MAE

Expected Outcome 1: Broad Aerospace Engineering Knowledge
Graduates of the masters degree programs in Aerospace Engineering will have a broad understanding of the fundamental areas of aerospace engineering and other fields related to their specialty.

Assessment Method 1: Graduating Graduate Student Survey

Assessment Method Description
Each student graduating from the masters programs in Aerospace Engineering will be asked to respond to a Graduating Graduate Student Exit survey administered by the AU OIRA. For assessment of broad aerospace engineering knowledge, the following survey questions are considered relevant to this outcome:

To what extent do you agree with the following statements about your graduate program?

1. My graduate program was academically challenging.

5. Course requirements and sequences for my graduate program were effective.

7. Opportunities existed outside of class for interactions between students and faculty members in my graduate program.

12. My graduate program prepared me to carry out research.

14. My graduate program kept pace with recent trends and developments in the field.

For each question, the survey respondent could select “Strongly
disagree,” “Disagree,” “Agree” or “Strongly Agree”

**Findings**
Ten students responded to the survey for this time period. The response to each question was:

1. 5 strongly agreed and 5 agreed.

5. 3 strongly agreed, 6 agreed and 1 disagreed.

7. 6 strongly agreed, 3 agreed and 1 strongly disagreed.

12. 4 strongly agreed and 6 agreed.

14. 6 strongly agreed, 3 agreed and 1 disagreed.

**How did you use findings for improvement?**
The findings indicate that the students find the education in our program to be challenging and up-to-date. There appears to be some improvements possible in regards to recent trends and developments as well as course sequences. The graduate faculty are planning to review the graduate course offerings over the next year and will consider course sequencing in specific subject areas. In addition, we plan on introducing more external seminar speakers to provide students with more opportunities to learn about recent trends and developments.

**Additional Comments**
The Graduate Program Committee is considering changes to the survey questions.

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**Expected Outcome 2: Communication**
Graduates of the Masters programs in Aerospace Engineering will be able to communicate their ideas effectively with their technical peers and with others outside their discipline.

**Assessment Method 1:** Publications

**Assessment Method Description**
For each student graduating from a masters program in Aerospace
Engineering, an average of one refereed journal paper or one conference paper will be accepted for publication, on which the student was an author or co-author. This assessment method is determined by responses to a Graduating Graduate Student Exit survey administered by the AU OIRA. The survey asks:

How many peer reviewed conference papers or posters (single or co-authored) did you present during the period of your graduate studies at Auburn University?

How many peer reviewed journal articles (single or co-authored) did you have accepted during the period of your graduate studies at Auburn University?

**Findings**

There were ten responses for the Masters program. Masters students average 1.1 conference publications per student and 0.2 journal articles per student.

**How did you use findings for improvement?**

The number of publications per Masters student meets our threshold indicating that, on average, our students are presenting their work to external audience. The department is currently reviewing methods to encourage more publishing by students, particularly in archival journals.

**Additional Comments**

The Graduate Program Committee is considering changes to the survey questions to extract a finer level of detail about publications including first author status, consideration of papers that are in review and the addition of oral presentations made at professional conferences and meetings.

**Assessment Method 2: Thesis Defense & Final Oral Examination**

**Assessment Method Description**

Masters students are required to give a 30 minute oral presentation at the conclusion of their studies followed by a question and answer session with their advisory committee. For thesis students, the presentation is a defense of their thesis work. For non-thesis students, the subject of the presentation is a technical topic of their
choice chosen in consultation with the student's major professor. The Department has adopted an evaluation form for non-thesis students on which students must earn a 70 or higher to pass. In both cases, the students advisory committee evaluates the presentation.

**Findings**
Nine students successfully passed their final oral examination and completed their masters degree during this time period.

**How did you use findings for improvement?**
The graduate faculty are pleased with these finding.

**Additional Comments**
The department is currently reviewing the non-thesis evaluation form and considering its adoption for both thesis and non-thesis students to provide more insight into this topic.

**Assessment Method 3: Graduate Seminar Course**

**Assessment Method Description**
All graduate students are required to prepare and give a seminar presentation once per year. The seminar includes a written component (seminar abstract and announcement), a multi-media component (presentation, typically via Powerpoint) and an oral component (presentation itself). The subject of the seminar must be technical in nature and related to Aerospace Engineering. Students are provided feedback during a Q&A session following each presentation.

**Findings**
The seminar series is well received by the students and provides an excellent forum to practice technical presentation skills.

**How did you use the findings for improvement?**
Currently, feedback to students is provided orally, but not documented. The Graduate Program Committee is considering documenting student skills in certain areas such that progress can be tracked over the course of a student’s degree program.
Expected Outcome 3: Mastery

Graduates of the Masters programs in Aerospace Engineering will master the basic principles and standard methods in at least one of the major subdisciplines within Aerospace Engineering. They will understand how these basic principles are applied to solve advanced problems, enabling them to practice aerospace engineering at a high level.

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