

DEFINITION OF TERMS IN THE GRADUATE PROGRAM ASSESSMENT PROCESS

- A. Program Mission:** How the program intends to serve its constituents.
The department, by some means, composes the mission statement of its graduate program. The mission statement articulates the nature and the purpose of the program.
- B. Program Constituents:** Who is to be served by the program.
Primary constituent group is graduate students in the program.
- C. Program Objectives:** The means by which the program ensures delivery of the promised services.
The department, by some means, identifies a set of indicators that can be used to ensure the delivery of its mission.
- D. Educational Student Outcomes:** The information and skills the students need to learn.
The department stipulates what the student will know, believe and be able to do upon completion of the program. Outcomes should be observable and measurable.
- E. Assessment of Program Objectives:** Assessment is the process of gathering, analyzing and interpreting evidence about the effectiveness of the program. The department establishes the tools by which to measure and determine if *program objectives* are being met.
- F. Assessment of Educational Student Outcomes:** Assessment is the process of gathering, analyzing and interpreting evidence about the effectiveness of the program. The department establishes the tools by which to measure and determine if *educational student outcomes* are being met.
- G. Feedback Loop:** The process by which faculty evaluate the evidence collected to make reasoned changes in the program whenever necessary to enhance or improve the program. The department establishes a procedure for faculty to evaluate the evidence collected each year. This evidence is used to make decisions about program changes and ensure continuous improvement.
- H. Annual Report:** An Assessment Report produced annually that indicates:
1. results from data collection during the academic year (based on assessment plan)
 2. record of dates the Graduate Assessment Committee met to consider the assessment results
 3. summary of the decisions made at the meetings by the faculty
 4. summary of how assessment data was used to improve the program
 5. the assessment plan for the next academic year
 6. progress on items in the Memorandum of Understanding *
- I. Assessment Plan:** This document specifies the:
- Program mission
 - Program constituents
 - Program objectives
 - Educational student outcomes
 - Program assessment activities (when and how the various program objectives will be measured)
 - Educational student outcomes assessment activities (when and how the various educational student outcomes will be measured)

Feedback loop used by the faculty

* This document is jointly produced (by deans and the program area) after KBOR Program Review. It specifies goals (and timelines for accomplishment of those goals) to improve the program based on recommendations coming from the KBOR review process.

GRADUATE PROGRAM ASSESSMENT REPORT, 2007-2008
WICHITA STATE UNIVERSITY

Program Name: Master of Science in Aerospace Engineering **Date:** September 1, 2008

School/College: Engineering **Campus Box:** 44

A. Mission Statement

To prepare students for careers in aerospace engineering and related fields, and for graduate study

B. Constituents

The graduate students in the Department of Aerospace Engineering are the program constituents.

C. Program Objectives

- a. To ensure the admission of qualified students into the program each year.
- b. To provide qualified faculty for the program.
- c. To provide appropriate laboratories and access to them for the program.
- d. To provide an appropriate variety of graduate courses for the program.
- e. To enroll a sufficient number of students to support the courses offerings.
- f. To achieve an acceptable placement rate within one year of graduation either in jobs or in graduate programs for further study.
- g. To ensure graduates are satisfied with the program (three years after graduation).
- h. To ensure continued quality of student performance during the program.

D. Educational Student Outcomes

- a. Students must demonstrate competency in one of three areas of specialty: aerodynamics and fluid mechanics, structures and solid mechanics, flight dynamics and controls.
- b. An overwhelming majority of the students will be able to self-educate.

E. Assessment of Program Objectives

a. Program Objective (a) – Admission of qualified students:

- Admit fewer than 20% of the qualified applicants into categories other than “full standing”. Admission to full standing requires a Bachelor of Science degree in aerospace engineering or related field with a minimum GPA of 3.00 out of 4.00 in undergraduate studies.
- Admit only international applicants who meet the minimum TOEFL score of 550 paper-based or 213 computer-based.

Results:

- During the academic year 2007-2008, the department received 105 applications for degree-bound category. From those, 76 students were admitted to the program in full standing, 7 were admitted on probation, and 1 was admitted conditionally. Those admitted conditionally had GPA above 3.00.
- All international students met the TOEFL score requirement.

b. Program Objective (b) – Providing qualified faculty for the program:

- More than 90% of the faculty members must be full members of the graduate faculty and have doctoral chairing status.
- The adjunct faculty teaching graduate level courses must hold at least a Graduate Faculty Associate status as approved by the Graduate School.
- More than 75% of the graduate level courses must be taught by regular faculty members.

Results:

- All 11 faculty members are members of the graduate faculty and 10 have doctoral chairing status.
- All adjunct faculty members teaching graduate level courses held at least Graduate Faculty Affiliate status as approved by the Graduate School.
- During the academic year 2007-2008, regular faculty members taught 18 sections out a total of 24 sections of graduate level courses.

c. Program Objective (c) – Providing appropriate laboratories:

- Appropriate technical personnel must be available for service and maintenance of the department laboratories as deemed by the department chairperson.
- A questionnaire is administered to students for their feedback on the quality and accessibility of the labs.

Results:

- College of Engineering employs two full-time technicians to help in maintaining the college laboratories. Prior to that, each department employed one technician to maintain the laboratories. Department of Aerospace Engineering also had a technician maintaining the computer laboratories.
- College of Engineering moved in the new Engineering Research Laboratory building. Department of Aerospace Engineering had a new Flight Dynamics laboratory in this building.
- The exit survey conducted by the Graduate School was to be used for this measure. During the academic year 2007-2008, 70.1% of the respondents indicated that laboratories were very accessible to them (compared with 56.6% university-wide).

d. Program Objective (d) – Appropriate variety of graduate courses:

- The department must offer 10 or more graduate level courses in each semester, excluding thesis and dissertation hours.

Results:

- The department's offering of the graduate courses during the academic year 2007-2008 was as follows: 10 courses in Fall 2007, 12 courses in Spring 2008, and 1 course in Summer 2008.
- Graduate School Exit Survey results were to be used to measure the students' satisfaction with the variety of courses offered by the department. During the

academic year 2007-2008, 88% of the respondents felt that the variety courses offered by the department helped them complete their degree requirements in a timely manner.

e. Program Objective (e) – Enrolling Sufficient Number of Students:

- The department must enroll more than 50 degree-bound students per semester.
- The department must grant in excess of 10 Master of Science degrees per academic year.

Results:

- In Fall 2007, Spring 2008, and Summer 2008, the department enrolled 73, 68, and 21 degree-bound graduate students, respectively.
- In Fall 2007 and Spring 2008 the department enrolled 7 and 6 non-degree graduate students, respectively. No non-degree students were enrolled in Summer 2008.
- During the academic year 2007-2008 the department granted 10 degrees of Master of Science.

f. Program Objective (f) – Placement rate and graduate school admission:

- More than 85% of the graduates of the program must be placed within one year of graduation either in jobs or in graduate programs for further study.

Results:

- From the 10 graduates, all (100%) are known to be employed or to be in graduate schools. Please see Table 1.

g. Program Objective (g) - Satisfaction with the program:

- At least 70% of the graduates will express satisfaction with their education.

Results:

- Graduate School Exit Survey results were to be used to measure the graduates' satisfaction with their education. During the academic year 2007-2008, 82% indicated that they were satisfied or very satisfied with their program of graduate studies at WSU (compared with 83.1% university-wide).

f. Program Objective (f) - Student performance:

- Students are required to maintain a cumulative GPA of 3.00 out of 4.00 while enrolled in the program to maintain full standing.
- Students are required to complete a minimum of 30 graduate semester credit hours for thesis option or 33 hours for non-thesis or directed-project options.
- Students with the thesis option or the directed-project option are required to pass an oral examination on their thesis or directed project. Students with the non-thesis option are required to pass a written examination in their major field of study.
- Students are encouraged, but not required, to submit their theses for publication.

Results:

- During the academic year 2007-2008, 10 students were placed on probation and 3 student was dismissed.
- During the academic year 2007-2008, 9 out of 10 graduates had credit hours in excess the minimum needed for degree.
- During the calendar year 2007, graduate students were coauthors of 3 journal articles and 12 publications at national conferences.

F. Assessment of Educational Student Outcomes

a. Educational Outcome (a) – Competency in areas of specialty:

- Each student must satisfactorily complete the three core courses in his/her area of specialty.
- Each student must satisfactorily complete at least 12 credit hours in his/her area of specialty including the core courses.
- Students must pass at least one graduate level course in mathematics or statistics.
- Students in the coursework option must pass a comprehensive exit exam over the contents of their core courses.
- Students in the directed-project option must prepare a formal final report on their projects and present the results to the satisfaction of their advisory committee.
- Students in the thesis option must prepare a thesis on their research projects and defend it to the satisfaction of their advisory committee.

Results:

- From 10 graduates, 9 passed the core courses in their areas of specialty with an average of B or better.
- All graduates completed at least 12 credit hours in their areas of specialty with an average of B or better.
- All graduates had satisfied the mathematics/statistics requirement before graduation with a grade of C or better.
- During the academic year 2007-2008, 7 students graduated after satisfactorily completing their directed projects.
- During the academic year 2007-2007, 3 students graduated after satisfactorily completing their theses.

b. Educational Outcome (b) – Self Education:

- Students in thesis and directed-project options demonstrate self-education by completing independent research.

Results:

- During the academic year 2007-2008, 10 out of 10 graduates of the program (100%) chose the thesis or the directed-project option, which require independent research. (Attached table)

G. Feedback into the Program

Process:

The department has a Graduate Assessment Committee composed of the two graduate coordinators and a third member appointed by the department chairperson. This committee meets annually to review the results of the assessment and to provide feedback into the program. The same committee also reviews the program mission, objectives, outcomes, and the assessment process periodically and in consultation with other faculty members.

Results:

The Graduate Committee did not discuss the results of the assessment report.

H. Annual Report:

The Assessment Report documents:

- results from data collection during the academic year
- dates when faculty met to consider the results
- summary of decisions made at the meeting of the faculty
- when issues identified at the meeting will be considered again

Table 1: MS Degree Recipients

Academic Year 2007-2008

Semester / Name	Degree Option	Hours to Graduate	Employer or Graduate School
Fall 2007: Alwarsamynaidu-Sowri, Kannan Kelly, Brad J. Mamaril, Brian A. Pocase, Peter N. Rottler, Jeffrey R. Thotakuri, Manoj V.	Project Project Project Project Project Thesis	34 39 35 34 33 40	Cessna Aircraft Company Spirit Aerosystems, Inc. Cessna Aircraft Company Airbus North America Airbus North America Dassault Falconjet
Spring 2008: Eno, William Kazuo Chadegani, Alireza Ghimire, Mohan	Project Thesis Thesis	44 46 35	The Boeing Company (Seattle) WSU Doctoral Program – Aerospace National Institute for Aviation Research
Summer 2008: Ditchfield, Thomas	Project	34	Spirit Aerosystems, Inc.