Assessment Report for the Doctor of Philosophy in Mechanical Engineering Program (AY 2007-2008)

The ME faculty members review Graduate Program Assessment data during weekly departmental meetings throughout the regular semesters. The observations entered below (*in italics*) comprise a summary as concluded by the ME Graduate Committee on September 16, 2008.

Assessment of Program Objectives (E)

1. *Admit qualified students into the program each year*

In accordance with the guidelines in the Assessment Document only students with a GPA of 3.5 in their Master's degree are being admitted to the PhD program. Exceptions may be made for students with a Master's GPA between 3.25 and 3.50 with a conditional admission.

2. *Have faculty with excellent credentials*

Currently 9 out of 11 Faculty members have Graduate Membership with Dissertation Chairing or Co-chairing status. Graduate status for the remaining faculty is also being pursued.

3. *Provide state-of-the-art laboratories and facilities*

All the labs, including the computer labs, have been recently upgraded. An exit survey is currently being conducted to gather information on user satisfaction.

4. *Provide a full range of graduate courses for the program.*

The following graduate level courses were offered during the AY 2007-08

ME 637: Computer Aided Engineering (Behnam Bahr)
ME 639: Finite Element Methods in Mechanical Design (Bob Minaie)
ME 650D: Introduction to Nanotechnology (Ramazan Asmatulu)
ME 650R: Introduction to Corrosion (Ramazan Asmatulu
ME 650S: Biomaterials
ME 665: Selections of Materials for Design and Manufacturing (George Talia)
ME 669: Acoustics (Kurt Soschinske)
ME 729: Computer Aided Analysis of Mechanics (Hamid Lankarani)
ME 750A: Recycling of Engineering Materials (Ramazan Asmatulu)
ME 750F: Modeling of Engineering Systems (Dr. Sang Lee, Adj. Faculty, Spirit Aerosystems)
ME 750T: Injury Biomechanics (Hamid Lankarani)
ME 758: Non-Linear Control (Brian Driessen)
ME 760: Fracture Mechanics (Ramazan Asmatulu)
ME 762: Composite Materials (Bob Minaie)
ME 829: Advanced Computer Aided Analysis (Hamid Lankarani)

ME 850N: Nano-Material Fabrication and Characterization (Ramazan Asmatulu)
ME 867: Mechanical Properties of Materials II (George Talia)

Observation: A sufficient number of courses have been offered; according to Graduate School data, the 5-year rolling average of PhD time to degree is 5 years. This is acceptable.

> **5.   Enroll a sufficient number of students each year.**

The current enrollment of PhD students is 12. The faculty members are actively pursuing to increase enrollment.

> **6.   Achieve an acceptable placement rate (job or continued school) within one year of graduation.**

We are currently collecting data; initial response indicates placement rate at 100%.

> **7.   Have students express satisfaction with the program.**

As mentioned above, data collection has begun through an exit survey of graduating students.

Assessment of Educational Student Outcomes (F)

a.   Students will gain in-depth knowledge in one of the following Major Fields: (i) Thermal-Fluid Sciences; (ii) Mechanical Systesms/Design; or (iii) Materials Science and Engineering

- Students will complete at least five core courses in their major area of specialty, and receive a grade of B or better in each.

    This goal is met by current ME students.

- Students will pass their comprehensive examination on their first attempt.

    Two students took the qualifying exam (comprehensive) this past year. Both of them passed in their first attempts.

b. Students will gain reasonable expertise in a Minor Field:

    This goal is pursued by design and enforced through the Plan of Study as approved by the Graduate School.

c. Students will be able to self-educate.

    - At least 90% ... will ... write and defend ... a research proposal incl. a survey of the current literature.

This goal is accomplished by design and fulfillment of the requirements for the degree of Doctor of Philosophy wherein each student has to write and defend through an oral presentation his/her research proposal including a survey of current literature.

- At least 90% ... will successfully complete their dissertation...

One student defended his Dissertation this past year and was successful in his first attempt.

According to data provided by the Graduate School for a 5-year rolling average the graduation rate is only 50%. See the section titled Feedback Loop *at the end of this report for further comments.*

- All accepted dissertations will lead to refereed journal articles

Last year two journal papers have been published by our PhD students still working on their dissertation. Data on successfully defended dissertations is not available.

The Feedback Loop

Our last assessment report was submitted in Spring 2008 (for the AY 2006-2007) and no further feedback-evaluation has taken place since.