Date: June 18, 2012

To: Dr. Dianne Harrison
President

From: Dr. Cynthia Rawitch
Vice Provost

Subject: Final Memorandum of Understanding – MS Mechanical Engineering

The final phase of the program review process for the Master of Science in Mechanical Engineering occurred on March 27, 2012. At this time the commendations and recommendations from the external reviewers’ report were discussed. Present at the meeting were: Cynthia Rawitch, Vice Provost, Academic Affairs; S.K. Ramesh, Dean, and Nagwa Bekir, Associate Dean, College of Engineering and Computer Science; Hamid Johari, Chair, Department of Mechanical Engineering; Jackie Stallcup, GSC Representative; Bonnie Paller, Director of Academic Assessment and Program Review; Dave Ballard, Program Review Coordinator; and Eli Bartle, Program Review Coordinator.

Dr. Rawitch congratulated the program on its many strengths as identified by the commendations in the external reviewers’ report. A discussion of the reviewers’ commendations and recommendations followed.

The attached MOU is the final understanding between the department and the college.

Attachment: MOU

Cc: S.K. Ramesh, Dean, College of Engineering and Computer Science
Hamid Johari, Chair, Department of Mechanical Engineering
Jackie Stallcup, GSC Representative
Bonnie Paller, Director of Academic Assessment and Program Review
Office of Undergraduate Studies

Master of Science in Mechanical Engineering (MSME)
Program Review – 2011-2012

Memorandum of Understanding

Commendations to the Department for:

1. Well-organized Dynamic & Control and Thermal/Fluid emphases.
2. The academic advisement of students, especially upon entry into the program. The graduate coordinator has extensive experience in dealing with students of various backgrounds and the academic advising process is well executed.
3. Developing and implementing a new assessment plan and outlining a comprehensive assessment plan to measure course objectives, program objectives and program outcomes.
4. Maintaining its overall course offerings and the quality of its programs in the face of enrollment growth, both in its undergraduate and graduate programs.
5. Hiring new faculty members in this challenging financial environment.
6. Its success in faculty recruitment and faculty development.
7. A high level of student and alumni satisfaction.
8. A plan to administer a voluntary assessment examination to all incoming graduate students in order to determine any deficiencies in preparation.
9. A strong and very well managed Department. As a result, the program is meeting its stated goals and objectives, which are well articulated and are appropriate for the program.
Recommendations: The Department should

1. Increase its course offerings (e.g., an aerospace structures course, a course in either space environment or spacecraft design, and course offerings with a Mechanical Design/Mechanics emphasis).
   
   Understanding: Given the shortage of faculty in specific emphases, increased course offerings will depend on future faculty hires.

2. Offer more assistance to students to help them initiate their theses (e.g., compiling and posting on a regular basis a list of proposed thesis topics of interest to various faculty members).

3. Prioritize areas of emerging technologies of interest and continue hiring new faculty in those areas as funding becomes available.
   
   Understanding: Given that the Department has hired 2 new faculty members in Fall 2011 and is conducting a search for 2 additional faculty to begin Fall 2012, this recommendation has been addressed.

4. Continue to monitor the key elements of the program (i.e., number of applications, enrollment, and graduation data) on an annual basis in order to identify trends in industry and respond to changes.

5. Continue to articulate Department needs and their impact on students and the program (e.g., financial support and space to accommodate growth and maintain the quality of programs, conference travel funds, lab-upgrade funds, and funds to hire ISAs for large enrollment courses).

6. Communicate to the community that the program continues to be a viable and high-quality option for graduate education.

7. Advocate that the College continues to support the program by hiring new faculty members and providing additional space to the Department as funds become available.
8. Assess the success of the Department’s many research stimulation initiatives (e.g., fellowship program, faculty development program, etc.) against individual faculty research goals.

9. Provide more incentives for faculty to develop more research activity and to involve graduate students in their research.

10. Consider raising the admission requirement to a higher GPA and add additional requirements such as a minimum GRE score.

Understanding: The Department has a proposal before the college to require the GRE scores for every student.

11. Support graduate students (e.g., disseminate information on conferences and meetings and provide resources to enable students to participate, hire them as TA’s, etc.).

12. Collect more data on such undergraduate and graduate student accomplishments as journal publications and admissions to PhD programs as a measure of how well the objectives of the MSME program are met.

13. Develop a system of measurement for learning outcomes assessment.

14. Develop a matrix of key performance indicators and benchmarks to evaluate department performance, in order to have a better understanding of where it stands compared to other programs.

Understanding: The current interaction with industry provides a comprehensive and flexible feedback loop on the performance of the Department.