

Department: Mechanical, Materials, & Aerospace Engnr
 Chair: L.C. Chow
 Participating faculty: All

Program Name & CIP Code: Mechanical Engineering 14.1901 Level: M/MSME Graduate

Example of Linkage between Expanded Statement of Institutional Purpose,
 Departmental/Program Intended Outcomes/Objectives, Assessment Criteria and Procedures,
 Results, and Use of Results at our University

Expanded Statement of Institutional Purpose	Departmental/Program Intended Outcomes/Objectives	Assessment Criteria & Procedures	Assessment Results	Use of Results
<p>Attain prominence in key areas of graduate education and research.</p>	<p>1. MAAE Masters graduates will demonstrate a strong foundation in the science and engineering principles underlying their area of specialization.</p>	<p>1a. All students will be required to take a rigorous comprehensive exam or in consultation with their graduate faculty advisor to independently conduct and successfully defend a research thesis. The Graduate Students Performance and Assessment Committee (GSPAC) will collect the relevant data and assess whether at least 90% have demonstrated a strong foundation in principles.</p>	<p>1a. Data were collected by examining relevant samples of M.S. theses and M.S. comprehensive exams and 93% were judged to have adequate foundation in principles.</p>	<p>1a. Data reveal that goals were met with respect to students demonstrating strong foundation in principles. Action: none required.</p>
	<p>2. MAAE Masters graduate students will develop proficient mathematical, computational, and/or experimental skills.</p>	<p>1b. Midway through their program, students will be surveyed to assess whether or not at least 90% are satisfied with their competency in applying the appropriate principles.</p>	<p>1b. Results of a student survey carried out in Spring 1997 show 91% of students are satisfied with their competency in applying fundamental principles, mathematical, experimental and computational skills. Over 89% of surveyed students were satisfied or very satisfied with their educational experience.</p>	<p>1b. Data reveal that goals were met with respect to student perception of their competency in applying fundamental principles, mathematical, experimental and computational skills. Further students express overall satisfaction with their educational experience. Action: none required.</p>
	<p>3. MAAE Masters graduates will be competent in research, including problem definition, assimilation of previous research, formulation and implementation of a research approach, and effective oral and written communication.</p>	<p>2. MAAE graduate students will demonstrate proficient mathematical, computational, and/or experimental skills. The GSPAC will collect the relevant data and assess whether at least 90% have demonstrated proficiency in mathematical, computational, and/or experimental skills.</p>	<p>2. GSPAC collected data by examining M.S. theses and comprehensive exams and the determination was that over 90% demonstrated proficiency in mathematical (17.5%-High, 57.5%-Medium, 5%-Low, 0%-N/A), computational (20.7%-High, 38%-Medium, 0%-Low, 41.3%-N/A), and/or experimental skills (51.7%-High, 10.3%-Medium, 0%-Low, 38%-N/A).</p>	<p>2. Data reveal that goals were met with respect to GSPAC assessment of student competency in applying fundamental principles, mathematical, experimental and computational skills. Action: none required.</p>
		<p>3a. The criterion is that at least 90% of full-time students write and successfully defend a thesis, that all thesis students give a Department Colloquium presentation in addition to a defense, and that at least half of the theses lead, within a year of completion, to a scholarly publication. The GSPAC will assess whether at least 90% of students have demonstrated acceptable research skill.</p>	<p>3a. The data gathered by the GSPAC demonstrate that well over 90% of M.S. students have developed adequate research skills. Examination of graduating MS student survey reveals students have on average made 2 presentations, all students made a department colloquium presentation, and 40% of these generated a scholarly paper.</p>	<p>3a. Data gathered by the GSPAC demonstrate that goals were met with respect to students development of research skills and number of students presentations. However, generation of scholarly papers goal was not met (at 40% slightly below 50% goal). Action: GSPAC issued a position memo to promote and emphasize student authorship of scholarly papers.</p>
		<p>3b. Non-thesis option students will take a 3 hour independent study project and provide a written report. The GSPAC will assess whether at least 90% of Non-thesis M.S. students have demonstrated competency in written communication.</p>	<p>3b. The 3 hours of independent study requirement has not been implemented in the non-thesis option. No data are available.</p>	<p>3b. The 3 hours of independent study have not been implemented in the Non-thesis option. Action: the graduate committee is introducing this requirement in its current revision of the graduate curriculum.</p>