

Administrative and Educational Support Report*

Department of Mechanical Engineering

**Annual Action Plan
Annual Assessment Report**

June 2004 – May 2005

*Student Learning Outcomes for this department are available at
<http://ie.panam.edu/CoSELearningOutcomes.htm>



Annual Action Plan: June 1, 2004–May 31, 2005

Unit: Department of Mechanical Engineering

UTPA Mission: The University of Texas-Pan American (UTPA) serves the higher education needs of a rapidly growing, international, multicultural population in the South Texas Region. The University preserves, transmits and creates knowledge to serve the cultural, civic, and economic advancement of the region and the state. The University provides students advanced instruction in academic programs offered through innovative delivery systems that lead to professional certification, and baccalaureate, master's and doctoral degrees. Through teaching, research, creative activity and public service, UTPA prepares students for lifelong learning and leadership roles in the state, nation and world community.

Division: Academic Affairs **Unit Head:** Dr. Hashim Mahdi

Unit Mission: The Mechanical Engineering Department will provide students a quality education to prepare them for the practice of engineering, with sufficient depth to continue their education beyond the baccalaureate degree. The curriculum will provide skills that enhance the understanding of the applications of engineering sciences. In order to provide an awareness of current and emerging industrial practice, the department will provide the students the opportunity to participate in professional organizations, industrial internships or co-op experiences, and scholarly activities including supervised research. The faculty will be readily accessible and will continuously strive to improve their instructional materials and the methods of dissemination. The faculty will also practice life long learning by keeping abreast of and participating in the latest developments in their chosen areas of expertise and interacting across disciplines. The opportunity for student success in the undergraduate programs will be enhanced by liberal access to the computational facilities and laboratories.

Unit Goal: To provide a quality Mechanical Engineering program grounded in the liberal arts and humanities that cultivate active life-long learning, critical thinking, problem solving, and an awareness of environmental and societal impacts of technology.

Link to UTPA Goal(s):
 1: Ensure undergraduate student access and success
 2: Enhance graduate education and research

Unit Objective (Action Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome for Unit Objective (AA-Measurable Objective)	Strategy(ies) to Achieve Expected Outcomes	Assessment Criteria, Evaluation Methods for Expected Outcome	New Resources Needed in FY05
Program development (1)	1, 2, 4	Maintain an ongoing self-assessment process as required by ABET, University, and SACS standards.	Develop and administer assessment tests; report and feed back results into curriculum. Develop and administer alumni and employer surveys. Hold an outcomes assessment "retreat" each semester.	Administer Fundamentals of Engineering (FE) exam.	Additional operating funds

Annual Action Plan, June 1, 2004–May 31, 2005

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		Increase enrollment in the BSME program, with a goal of increasing by a least 5%.	Seek scholarship and work-study opportunities for ME students. Hold an ME convocation each fall to improve student awareness. Send faculty to college nights and other recruitment events.	Compare student enrollment in 2004-05 to 2003-04 to determine the percentage of change.	External funding

Unit Goal:

To continue to recruit, retain, and develop the skills of highly qualified faculty.

Link to UTPA Goal(s):

- 1: Ensure undergraduate student access and success
- 2: Enhance graduate education and research

Unit Objective (Action Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome for Unit Objective (AA-Measurable Objective)	Strategy(ies) to Achieve Expected Outcomes	Assessment Criteria, Evaluation Methods for Expected Outcome	New Resources Needed in FY05
Faculty development (2)	2, 4, 5	Seek opportunities for summer support of faculty, in teaching and in on-campus or off-campus research, with a specific goal of 1.5 months minimum support for all tenure-track faculty.	Encourage faculty members to write grant proposals that include summer support. Increase summer course offerings.	The ME chair will count the number of months that each faculty have during the summer.	Released time for faculty with active research.

Annual Action Plan, June 1, 2004–May 31, 2005

Unit Goal:

To facilitate and reward excellence in scholarship and research

Link to UTPA Goal(s):

2: Enhance graduate education and research

Unit Objective (Action Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome for Unit Objective (AA-Measurable Objective)	Strategy(ies) to Achieve Expected Outcomes	Assessment Criteria, Evaluation Methods for Expected Outcome	New Resources Needed in FY05
Increased research (3)	2, 5	Increase proposal submissions, with two specific objectives: having each graduate faculty without external funding submit at least one major external proposal per year, and a total number of submissions equal to at least half the number of faculty. (NOTE: this objective is the level to be maintained over 5 years).	Encourage faculty to write grant proposals. Assist junior faculty in developing research plans and proposals.	Count the number of proposals written and submitted by each ME faculty member.	None

Unit Goal:

To promote ongoing professional, university, and community service activities by faculty, staff, and students that enhance the quality of life in our community.

Link to UTPA Goal(s):

1: Ensure undergraduate student access and success

Unit Objective (Action Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome for Unit Objective (AA-Measurable Objective)	Strategy(ies) to Achieve Expected Outcomes	Assessment Criteria, Evaluation Methods for Expected Outcome	New Resources Needed in FY05
Increased student opportunities (4)	2	Develop at least one Mechanical Engineering student project each year that can be entered into a regional or national engineering design competition.	Participate in ASME Region X Conference competition. Have ME students contribute more to MiniBaja and Aero Design competition.	Count the number of the projects that are submitted to regional, national, or international engineering design competition.	External support Travel funds

Annual Action Plan, June 1, 2004–May 31, 2005

Unit Goal:	To provide effective student recruitment, development, retention, and placement programs designed to promote and service a diverse student population.
Link to UTPA Goal(s):	1: Ensure undergraduate student access and success

Unit Objective (Action Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome for Unit Objective (AA-Measurable Objective)	Strategy(ies) to Achieve Expected Outcomes	Assessment Criteria, Evaluation Methods for Expected Outcome	New Resources Needed in FY05
Student success (5)	2	Hold a freshman convocation each Fall to improve student awareness of opportunities to receive tutoring, advising, and financial aid, as well as program requirements and expectations.	Hold first convocation in fall 2004. Advertise convocation.	Check the number of ME students and faculty that attended the convocation	Advertising expenses



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Division: **Academic Affairs**

Unit Head: **Dr. Hashim Mahdi**

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Unit Goal: To provide a quality Mechanical Engineering program grounded in the liberal arts and humanities that cultivate active life-long learning, critical thinking, problem solving, and an awareness of environmental and societal impacts of technology.

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Unit Objective (Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome	Assessment Criteria, Evaluation Methods	Assessment Results (Use actual data to describe annual performance)	Use of Results (What change was made?)
Program development (1)	1, 2, 4	Maintain an ongoing self-assessment process as required by ABET, University, and SACS standards.	Administer Fundamentals of Engineering (FE) exam.	FE results for UTPA and State of Texas: April 04 ME 39% passing rate State 81% passing rate Oct. 04 ME 50% passing rate State 68% passing rate April 05 ME 65% passing rate State 84% passing rate	Current and previous test results were used to adjust the curriculum. Introduced a new course, MECE4101. Students are required to solve more problems.
		Increase enrollment in the BSME program, with a goal	Compare student enrollment in 2004-05	Enrollment 2003-04: 350 UG students	Continued the active recruitment of

Annual Assessment Report, June 1, 2004–May 31, 2005

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		of increasing by a least 5%.	to 2003-04 to determine the percentage of change.	2004-05: 377 UG students Undergraduate enrollment increased over 7%.	prospective students by ME faculty.

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Faculty development (2)	2, 4, 5	Seek opportunities for summer support of faculty, in teaching and in on-campus or off-campus research, with a specific goal of 1.5 months minimum support for all tenure-track faculty.	The ME chair will count the number of months that each faculty have during the summer.	Summer 2004: Total # of ME faculty = 10 Total # of months of summer support = 23 Average # of months per faculty member = 2.3	Increased the number of ME courses for the summer.

Unit Goal:

To facilitate and reward excellence in scholarship and research

Link to UTPA Goal(s):

- 2: Enhance graduate education and research

Unit Objective (Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome	Assessment Criteria, Evaluation Methods	Assessment Results (Use actual data to describe annual performance)	Use of Results (What change was made?)
Increased research (3)	2, 5	Increase proposal submissions, with two specific objectives: having each graduate faculty without external funding submit at least on major	Count the number of proposals written and submitted by each ME faculty member.	Each ME faculty has submitted at least one major proposal.	Encouraged the faculty to write proposals by seeking approval for workload adjustments and funding for research assistantships.

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		external proposal per year, and a total number of submissions equal to at least half the number of faculty. (NOTE: this objective is the level to be maintained over 5 years).			

Unit Goal:	To promote ongoing professional, university, and community service activities by faculty, staff, and students that enhance the quality of life in our community.
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Unit Objective (Priority: #1 is highest)	Link to UTPA Objective	Expected Outcome	Assessment Criteria, Evaluation Methods	Assessment Results (Use actual data to describe annual performance)	Use of Results (What change was made?)
Increased student opportunities (4)	2	Develop at least one Mechanical Engineering student project each year that can be entered into a regional or national engineering design competition.	Count the number of the projects that are submitted to regional, national, or international engineering design competition.	ME students participated in: Region X ASME Competition and the Mini Baja International Competition.	Planning for the next competition, summer 06, based on the 05 competition

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Student success (5)	2	Hold a freshman convocation each Fall to improve student awareness	Check the number of ME students and faculty that attended the convocation	About 65% of ME students attended the convocation and 100% of the ME	Planning for the next convocation

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		of opportunities to receive tutoring, advising, and financial aid, as well as program requirements and expectations.		faculty.	

Additional Resources Needed (if any) that were requested for FY06 during the budget cycle: Requested new faculty. Requested budget increases for operating, wages, and travel.