

# **Administrative and Educational Support Report\***

**Department of Mechanical Engineering**

**Annual Action Plan  
Annual Assessment Report**

**June 2005 – May 2006**

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



**Annual Action Plan: June 1, 2005–May 31, 2006**

**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:** Hashim S. 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 toward a Doctoral degree. The curriculum will provide skills that enhance the understanding of the applications of engineering sciences. The faculty will be readily accessible and will continually 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.

**Unit Goal:** To provide a quality mechanical engineering program grounded in the liberal arts and humanities, that cultivates 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 FY06
Maintain an ongoing self-assessment (student learning improvement program) process as required by ABET, University, and SACS standards. (1)	2,3,6	Complete academic assessment cycle each year, including assessment pre-tests, survey, and a summer faculty to review results and act on them to improve curriculum.	<ul style="list-style-type: none"> <li>• Appoint “point person” to supervise and manage process.</li> <li>• Assign faculty to</li> </ul>	By May 2006: <ul style="list-style-type: none"> <li>• 100% of the pre-test results are evaluated and documented.</li> <li>• 100% of FE 4/05 and</li> </ul>	None

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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 FY06
			administer specific tests. <ul style="list-style-type: none"> <li>• Ensure faculty attendance at assessment activities.</li> <li>• Develop incentives for students to participate in exit survey.</li> </ul>	10/05 licensing exam results will have been received, evaluated and documented. <ul style="list-style-type: none"> <li>• 90% or better of faculty will have attended a faculty review of assessment results.</li> <li>• 80% or better of May 2006 graduates will have completed exit survey.</li> </ul>	
Work to develop a new degree program in Civil Engineering. (2)	3	Final submission of Civil Engineering proposal to Undergraduate Council.	<ul style="list-style-type: none"> <li>• Appoint “point person” to supervise and manage proposal writing.</li> <li>• Hire a technical consultant to review and comment on the draft of the proposal.</li> <li>• Work with dean, Associate Vice President for Undergraduate Admissions (AVPUGA) and Associate Vice President for Graduate</li> </ul>	Revised proposal submitted no later than May 31, 2006.	None

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			Admissions (AVPGA) to ensure timely submission.		

**Unit Goal:**

To facilitate and reward excellence in scholarship and research

**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 FY06
Increase proposal submissions. (3)	5	An average of at least one major external proposal per tenured/tenure-track faculty should be submitted.	<ul style="list-style-type: none"> <li>• Ensure that faculty has prompt notification of grant opportunities.</li> <li>• Ask senior faculty to mentor or collaborate with junior faculty in grant writing.</li> <li>• Adjust teaching assignments for research active faculty.</li> </ul>	During period 6/1/05-5/31/06, over ten major (over \$50K) external proposals should be submitted.	Reduced teaching load for research active faculty.
Maintain student involvement in research. (4)	2,5	At least 25 ME undergraduate and seven graduate students should be formally involved in research projects.	Provide assistantships for students.	Department will identify names of at least ten students in each category who had paid involvement in research during the period 6/1/05-	None

Annual Action Plan, June 1, 2005–May 31, 2006

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 FY06
				5/31/06.	

**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 FY06
Encourage faculty attendance at outreach and recruitment events. (5)	1	All faculty members, including lecturers, will attend an increased number of events, with emphasis on recruitment.	<ul style="list-style-type: none"> <li>• Appoint a “point person” who will assign faculty to specific events.</li> <li>• Work with University Relations to identify opportunities.</li> </ul>	Over period of 6/1/05 - 5/31/06, faculty will average at least three recruitment related events attended.	None
Maintain undergraduate student involvement Educational activities (Mini-Baja, Aero-Design, ASME conference, and others). (6)	1, 3	At least thirty students should participate in departmental educational activities, and be successfully retained in the ME program.	<ul style="list-style-type: none"> <li>• Maintain active funding for student support.</li> <li>• Recruit new freshman and transfer students into program.</li> </ul>	<ul style="list-style-type: none"> <li>• At least 20 students in good standing with participation in the program.</li> <li>• Retention rate for students in program should exceed university average by at least 15%.</li> </ul>	None



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**Unit Goal:** To provide a quality mechanical engineering program grounded in the liberal arts and humanities, that cultivates 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 (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?)
Maintain an ongoing self-assessment (student learning improvement program) process as required by ABET, University, and SACS standards. (1)	2,3,6	Complete academic assessment cycle each year, including assessment pre-tests, survey, and a summer faculty to review results and act on them to improve curriculum.	By May 2006:	ME Faculty retreat was held on May 12, 2006. Three committees are established in three ME areas which are Thermal & Fluid, Mechanics & Materials, and Control.	

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?)
			<ul style="list-style-type: none"> <li>• 100% of the pre-test results are evaluated and documented.</li> <li>• 100% of FE 4/05 and 10/05 licensing exam results will have been received, evaluated and documented.</li> <li>• 90% or better of faculty will have attended a faculty review of assessment results.</li> <li>• 80% or better of May 2006 graduates will have completed exit survey.</li> </ul>	<ul style="list-style-type: none"> <li>• The pre-test results are evaluated and the current pre-requisites are sufficient.</li> <li>• Ten ME students have taken FE exam and eight students have passed( 80% passing rate.</li> <li>• All Me faculty have attended the ME retreat.</li> <li>• Over 80% of ME graduates have completed the exit survey.</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-test: Re-write the pre-test exam to have a better assessment of our students.</li> <li>• FE: Continue the exciting policy</li> <li>• Inform the graduate students about the exit exam in Nov for Dec. graduate and in April for May graduate.</li> </ul>
Work to develop a new degree program in Civil Engineering. (2)	3	Final submission of Civil Engineering proposal to Undergraduate Council.	Revised proposal submitted no later than May 31, 2006.	The proposal is submitted to the Dean of COSE.	

**Unit Goal:**

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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?)
Increase proposal submissions. (3)	5	An average of at least one major external proposal per tenured/tenure-track faculty should be submitted.	During period 6/1/05-5/31/06, over ten major (over \$50K) external proposals should be submitted.	Twelve major proposals have submitted.	
Maintain student involvement in research. (4)	2,5	At least 25 ME undergraduate and seven graduate students should be formally involved in research projects.	Department will identify names of at least ten students in each category who had paid involvement in research during the period 6/1/05-5/31/06.	20 students have been involved in research projects.	

**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 (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?)
Encourage faculty attendance at outreach and recruitment events. (5)	1	All faculty members, including lecturers, will attend an increased number of events, with emphasis on	Over period of 6/1/05 - 5/31/06, faculty will average at least three recruitment related events attended.	ME faculty were very active in the recruitments effort. We attended every single event and for the first time our	N/A

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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?)
		recruitment.		enrollment has exceeded 400 students.	
Maintain undergraduate student involvement Educational activities (Mini-Baja, Aero-Design, ASME conference, and others). (6)	1, 3	At least thirty students should participate in departmental educational activities, and be successfully retained in the ME program.	<ul style="list-style-type: none"> <li>• At least 20 students in good standing with participation in the program.</li> <li>• Retention rate for students in program should exceed university average by at least 15%.</li> </ul>	9 students have participated in Mini-Baja project, seven students have participated in the Aero-Design , and seven students have participated in the ASME conference.	