

Administrative and Educational Support Report

College of Science & Engineering

**Annual Action Plan
Annual Assessment Report**

June 2005 – May 2006



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

Unit: The College of Science and 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: College of Science and Engineering **Unit Head:** Dr. Edwin LeMaster

Unit Mission: The College of Science and Engineering supports the mission statement of the University of Texas-Pan American by committing to excellence in instruction, student performance, research, scholarly accomplishment, and professional service, and by promoting the expansion of national and international emphasis in all major areas of institutional endeavor. The College strives to provide its students and faculty an environment of academic freedom that will insure the exchange of ideas and the dissemination of knowledge. The College will provide a strong scientific and technical foundation for all students of the university. The College will continue to pursue a strong research program involving undergraduate and graduate students and faculty in all areas of science, mathematics, computer science, and engineering, and a strong teacher preparation program in science, mathematics, and technology.

Unit Goal: To provide, in the College of Science and Engineering, a variety of quality academic programs grounded in the liberal arts so as to cultivate active learning, critical thinking, problem solving, and interdisciplinary perspectives.

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
Student learning outcomes assessment. (1)	2,4	One hundred percent (100%) of deegreed programs in the	Ensure the implementation of student learning	One hundred percent (100%) of academic departments in the	None

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		College will implement a 2005-2006 student learning improvement plan, based on the 2004-2005 student learning outcomes assessments.	improvement plans (SLIP) in all degreed programs.	college will address the effectiveness of their student learning improvement plans in the 2005-2006 Annual Assessment Report due in June 2006.	
			Revise and disseminate the guidelines and format for the 2005 – 2006 assessment report to integrate the results achieved from implementing the student learning improvement plans.	AAR guidelines, AAR template, memos and attachments	None
			Ensure that all degreed programs in each department report to the chair, the results achieved from implementing the student learning improvement plan.	Student learning improvement plan, assessment reports (SLIPAR)	None

Unit Goal:	To provide effective student recruitment, development, retention, and placement programs designed to promote and serve a diverse student population.
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
Time-to-graduation (2)	2,4	In fall 2005, each department in the college will conduct an assessment of time-to-graduation for degreed programs offered.	<ul style="list-style-type: none"> Disseminate instructions to chairs for assessing time-to-graduation. Request that OIRE prepare a data set for time to graduation for each Department in the CoSE and a listing of the names and contact information of the students who have dropped out of each major. Monitor the progress of each department in conducting the assessment. Departments should contact the students who have dropped out to find dominant causes. 	<ul style="list-style-type: none"> In January 2006, the chairs will submit to the dean a report detailing the time-to-graduation baseline for each degreed program. Status reports presented at CoSE executive committee meetings. 	None
		Each department in the college will develop an	<ul style="list-style-type: none"> Develop and disseminate 	<ul style="list-style-type: none"> By end of FY06, the dean will approve the 	None

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		integrated plan for improving time-to-graduation in its degreeed programs beginning in AY 2006-2007.	<p>guidelines for the integrated plan.</p> <ul style="list-style-type: none"> • Set deadline for chairs to submit unit plans for improving time-to-graduation to Dean for approval. • Submit an integrated improvement plan to department chairs based on the data collected on the previous item. • Prepare an integrated college plan. • Submit an integrated department plan to the Provost for approval. 	<p>integrated college plan for improving time-to-graduation or will request submission of revised plans by August 7, 2006.</p> <ul style="list-style-type: none"> • Memos to department chairs and program coordinators. • Departmental improvement plans. • Integrated college plan. • Official notification of approval or request for revision. 	<p>None</p> <p>None</p> <p>None</p> <p>None</p>

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Student success (3)	2,4	By the end of October 2005, define student success and compile a list of factors that contribute to success.	<ul style="list-style-type: none"> Appoint a task force composed of faculty, administrators, and staff to draft a definition and identify factors. The data collected in the study of the dropouts from the college majors will form the basis of these factors. Seek approval of the definition and list of factors. 	<p>In November 2005, the Office of the Provost will disseminate the official definition of student success for the division and a list of factors contributing to student success in academic programs.</p> <p>Minutes, memos</p>	<p>None</p> <p>None</p>
		Each department in the college will review the official list of factors that contribute to student success and prepare an integrated plan for measuring student success in its programs beginning in September 2006.	<ul style="list-style-type: none"> Develop and disseminate guidelines for the integrated plan. Departments review list of factors and prepare integrated plan. Seek approval of the plan for measuring student success. 	By July 24, 2006, the dean will approve the integrated department plans for improving time-to-graduation or will request submission of revised plans by July 31, 2006.	None

Unit Goal:	To facilitate and reward excellence in scholarship and research, for the enhancement of knowledge in science, mathematics, computer science, and engineering that can be shared with the public through presentation, publication, and consulting.
Link to UTPA Goal(s):	1: Ensure undergraduate student access and success 2: Enhance graduate education and research

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Research productivity. (4)	2,5	Using data for AY 2004-2005, the dean will establish the baseline for the level of scholarly productivity per program or per department.	<ul style="list-style-type: none"> The dean will request department chairs to submit 2004-2005 data for their programs on faculty productivity by September 15, 2005. 	<ul style="list-style-type: none"> The official baseline for scholarly productivity by academic programs will be established (by the Provost) in December of 2005. 	None
			<ul style="list-style-type: none"> The dean will disseminate baseline information to each department chair in December 2005, as it is received from the Provost. 	<ul style="list-style-type: none"> Memo to chairs showing template for data. 	None
			<ul style="list-style-type: none"> The dean will review data submitted and will prepare a master spreadsheet of all college departments on faculty productivity by November, 2005. 	<ul style="list-style-type: none"> 2004-2005 spreadsheet in November, 2005 	None
			<ul style="list-style-type: none"> Each department 	<ul style="list-style-type: none"> November 2005 	None

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			chair will submit a report to the dean by November of 2005.	Report	
		Increase the level of research expenditures during AY 2005 - 2006 by 10% over AY 2004 - 2005.	<p>The Dean of the College and the Office of the Associate Vice President for Research Administration (AVPRA) will monitor the status of research expenditures throughout AY 2005 – 2006. In February 2006, the dean and the Associate Vice President for Research will report the official figures for the level of research expenditures in AY 2004 – 2005 as the basis for determining the percentage of change for research expenditures in AY 2005 -2006 compared to AY 2004 – 2005.</p> <ul style="list-style-type: none"> The Dean, with support from the Provost will coordinate/conduct two grant-writing workshops per semester. 	<ul style="list-style-type: none"> Official announcement Agenda for workshop; List of participants. 	\$250

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			<ul style="list-style-type: none"> • The Dean, with support from the Provost, will coordinate research forums. • The Provost will host federal grants administrators on campus. • The dean will disseminate the information to the college's faculty so as to facilitate participation in the activities mentioned. 	<ul style="list-style-type: none"> • Official announcement/ Agenda for forum; List of participants • Official announcement and schedule of meetings; List of participants • Memo showing disseminated information 	<p>\$500</p> <p>\$1,000</p> <p>None</p>
		<p>Increase the level of overall funding during AY 2005 – 2006 by 10% over AY 2004 – 2005.</p>	<ul style="list-style-type: none"> • Promote the concept of a research culture. • Improve the capability of the departments and of the dean's office to support efforts to increase research 	<ul style="list-style-type: none"> • Memos, minutes, policies and reports • Faculty and student engagement in research. • Budget allocations, reports of improvements, minutes, etc. 	<p>None</p> <p>Funding for additional staff, workshops, travel, staff training.</p>

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			<p>capacity and productivity.</p> <ul style="list-style-type: none"> • Increase the level of support provided to the faculty by the Office of Research and Sponsored Projects • Support the professional development of the faculty as researchers • Increase the number of faculty members in the college submitting a three-year plan for scholarship. This may not be the process if we go to the new Faculty Workload Policy. • Provide space, equipment and materials for 	<ul style="list-style-type: none"> • Memoranda of employment/ administrative work plans • Professional development activities • Plans submitted. • Space, equipment and materials provided. 	<p>Salary and office space for new full-time staff members [grant-writing and tech transfer positions]</p> <p>Funding for workshops, speakers, travel</p> <p>\$160,000 in additional funds to hire adjunct faculty to replace released faculty</p> <p>Funding for research space, equipment, materials</p>

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			unit directors to report to the dean.		



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Unit Goal: To provide, in the College of Science and Engineering, a variety of quality academic programs grounded in the liberal arts so as to cultivate active learning, critical thinking, problem solving, and interdisciplinary perspectives.

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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?)
Student learning outcomes assessment. (1)	2,4	Student learning outcomes	One hundred percent (100%) of academic departments in the college will address the	Student learning outcomes assessment.	Student learning outcomes assessment.

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		assessment.	effectiveness of their student learning improvement plans in the 2005-2006 Annual Assessment Report due in June 2006.		
			AAR guidelines, AAR template, memos and attachments	Templates were distributed to each department in the Spring 2006 semester.	[see results in the previous entry]

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Time-to-graduation. (2)	2,4	In fall 2005, each department in the college will conduct an assessment of time-to-graduation for degreed programs offered.	<ul style="list-style-type: none"> In January 2006, the chairs will submit to the dean a report detailing the time-to-graduation baseline for each degreed program. Status reports presented at CoSE 	The School of Engineering and Computer Science has completed the time to degree study for the graduates over the past year. The time to graduation for the graduates was 5.64 years. This includes the departments of Electrical Engineering,	--All advisors who advise undergraduate students are given the data with particular attention to the result of the Mechanical Engineering analysis. Students in undeclared majors are advised to choose a major, even if it is the wrong one. If they can work with an advisor

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			executive committee meetings.	Manufacturing Engineering, Mechanical Engineering and Computer Science. --The sciences and mathematics graduates in the college had an average time to graduation of 5.82 years. --- Mechanical engineering did an additional study with the data to learn that the years to degree for students who entered as ME majors was 4.32 years and students who entered with another major and changed to ME was 6.729 years. The overall time to degree was 5.704 years. The data were collected on 282 students.	to choose an appropriate major, their chances of graduating in fewer years are greatly enhanced. We believe that this strategy may help students take a more serious attitude toward choosing their major. --Departments will host a Freshman Convocation during the beginning of the fall semester to publicize their degree programs, inform freshmen of the resources available and related information.
		Each department in the college will develop an integrated plan for improving time-to-graduation in its degreed programs beginning in AY 2006-2007.	<ul style="list-style-type: none"> By end of FY06, the dean will approve the integrated college plan for improving time-to-graduation or will request submission of revised plans by August 7, 2006. Memos to department chairs 	The plans include far more than time to graduation. Their plans include new degree program development, strategies for rewarding more productive faculty and strategies for increasing productivity of all faculty members in their respective departments.	Task forces have been established for completing the THECB proposals for new degree programs in Environmental Science at the BS level. This program is on the THECB approved Table of Programs for UTPA. The Cooperative PhD in Biomedical Science with

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			<p>and program coordinators.</p> <ul style="list-style-type: none"> • Departmental improvement plans. • Integrated college plan. • Official notification of approval or request for revision. 		<p>one of the medical centers in Texas has already been initiated and will be pursued to completion. The common theme on many of the departmental plans was better advisement of students. To meet that issue there will be 2 full time advisors from the UTPA Advisement Center now located in the newly-renovated 3rd floor of the Science Building south wing. The Executive Council met and agreed by vote to allocate 2 offices to the advisors to improve time to graduation of our students majoring in science and engineering.</p>
Student success. (3)	2,4	By the end of October 2005, define student success and compile a list of factors that contribute to success.	In November 2005, the Office of the Provost will disseminate the official definition of student success for the division and a list of factors contributing to student success in academic programs.	Department Chairs met monthly and discussed the student success measures at most meetings. The UT System document on factors affecting student retention was distributed to all Department Chairs on May 31, 2005.	Chairs will make sure that every student will meet with a faculty or staff advisor each semester to be sure all courses being taken will help to reduce the time to degree. --2 large grants were funded to support

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			Minutes, memos		undergraduate and graduate research support funding. Chairs agreed to promote more of these grants.
Student success (3)	2,4	Each department in the college will review the official list of factors that contribute to student success and prepare an integrated plan for measuring student success in its programs beginning in September 2006.	By July 24, 2006, the dean will approve the integrated department plans for improving time-to-graduation or will request submission of revised plans by July 31, 2006.	Plans have been submitted for all 8 departments in the COSE.	All departments have agreed to publish hard copy of their degree plans for all majors. These are placed in conspicuous places to allow students access during working hours and after hours. Best practices were identified in Executive Council meetings and that was communicated to each department. It5 was agreed that degree plans should be formatted by semester to give plans to students to meet prerequisites and take courses that meet all requirements.

Unit Goal:

To facilitate and reward excellence in scholarship and research, for the enhancement of knowledge in science, mathematics, computer science, and engineering that can be shared with the public through presentation, publication, and consulting.

Link to UTPA Goal(s):

1. Ensure undergraduate student access and success
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Research productivity. (4)	2,5	Using data for AY 2004-2005, the dean will establish the baseline for the level of scholarly productivity per program or per department.	<ul style="list-style-type: none"> • The official baseline for scholarly productivity by academic programs will be established (by the Provost) in December of 2005. • Memo to chairs showing template for data. • 2004-2005 spreadsheet in November 2005 • November 2005 Report 	<p>Faculty performance in the COSE has been steadily improving:</p> <ul style="list-style-type: none"> • Proposals Submitted to request external funding: FY 03—58 FY 04—84, FY 05—118 and FY 06---124 [Increase of 5%] • Research funding: FY 05=\$2.4 Million FY06= \$ [Increase of %] • Research Journal publications published= in FY 05 = 96 and FY06 = 120 [Increase of 25%] Presentations at national and international 	<p>--- University established a full time Intellectual Property administrator at the insistence of the COSE and the AVP for Research in FY06. --Indirect Cost funds at the departmental level and the Dean's level were used to fund research student support: \$5000 for UG student research and \$5000 GRA support from the Dean's Office. --All faculty meetings now include presentations from the Grants Office to help faculty with their proposal procedures. --The University changed the faculty workload policy to require 9 hours of teaching per semester instead of the 12 hours formerly required. This</p>

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				conferences in FY05 190 and Fy06 = 164 [no increase]	change took place in January 2006. --New reporting processes are being developed to assess the faculty productivity to establish whether an individual faculty member is making good use of the additional time for research. The process will result in moving non-productive faculty back to 12 hour teaching loads.
		Increase the level of research expenditures during AY 2005 - 2006 by 10% over AY 2004 – 2005.		See data above [Criteria Met] FY 05 =\$2.4 Million and FY 06 = \$ Million, an increase of %. Presentations were made by the UTPA faculty at the Minority Serving Institutions Research Partnership conference hosted at UTPA on February 1, 2, 3, 2006. Workshop was conducted by the U.S. Air Force Research Lab. Twenty- three faculty members attended the Workshop held by the =USAFRL. Most of the research	See changes above Several proposals have been developed with partners developed at the MSIRP conference: Florida International University, Tennessee State University, and the Lockheed Martin Corporation. Faculty have a new awareness of the opportunities for contract funding to support research.

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			<ul style="list-style-type: none"> • Official announcement Agenda for workshop; List of participants. • Official announcement/ Agenda for forum; List of participants • Official announcement and schedule of meetings; List of participants • Memo showing disseminated information 	<p>faculty attended the MSIRP conferences.</p> <p>The Grants and Contracts Office has reported the following information: FY 05 COSE total Grants \$14.8 Million</p>	<p>--In FY06 a new position was created in the COSE for an Academic Financial Officer to help with the paperwork involved in grants and in all aspects of the college operations.</p> <p>--The University established a new position for an Intellectual Property person, Ms. Jackie Michel. She has made presentations to our faculty on several occasions and helped faculty apply for 3 patents on their research.</p> <p>--Faculty have been encouraged to apply for summer research programs. Two faculty members have participated in summer research at national labs and one has gone to Texas A&M for a summer research program.</p>