

Administrative and Educational Support Report*

Department of Mathematics

**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 Mathematics

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:** Lokenath Debnath

- Unit Mission:**
- To support the College of Science and Engineering mission stated by committing to excellence in instruction, student performance, research, scholarly accomplishment and professional service.
 - To provide students of mathematics an environment of academic freedom that will ensure the exchange of ideas, the dissemination of knowledge and the appreciation of Mathematics.
 - To inspire students with an appreciation of the impact of mathematics in a global economy, and with respect for the contributions made by previous generations.
 - To provide students analytical foundations empowering them to pursue chosen courses of study where they can apply mathematics meaningfully for the purpose of contributing to current and future societal needs.

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, 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	The Department of Mathematics will implement a 2005-2006 student learning improvement plan, based on the 2004-	<ul style="list-style-type: none"> • Ensure the implementation of student learning improvement plans (SLIP) in all degreeed programs. 	The Departments of Mathematics will address the effectiveness of their student learning improvement plans in	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
		2005 student learning outcome assessments, for the masters program, the bachelors program in mathematics, and the bachelors program in middle school mathematics teaching.	<ul style="list-style-type: none"> • Ensure that all degreed programs in the Department of Mathematics report to the chair the results achieved from implementing the student learning improvement plan. • Ensure that all degreed programs in each department report to the chair the results achieved from implementing the student learning improvement plan. 	the 2005-2006 Annual Assessment Report due in June 2006.	
Time to graduate (2)	2, 4	<p>In Fall 2005, the Department of Mathematics will conduct an assessment of time to-graduation for degreed programs offered.</p> <p>The department will</p>	<ul style="list-style-type: none"> • Disseminate instructions to deans and chairs for assessing time-to-graduation. Request that the Office of Institutional Research and Effectiveness (OIRE) prepare a data set for time to graduation for the students of math and a listing of the names and contact information of the students who have dropped out of 	<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 in the Department of Mathematics. 	None

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
		<ul style="list-style-type: none"> In spring 2006, each academic support unit in the department will review the official list of factors that contribute to student success, examine its current efforts to enhance student success, and report its findings to the department chair. 	<ul style="list-style-type: none"> Departmental review of student success factors. Submit to Math faculty the departmental plans to measure student success in 2006-07. Submit final departmental plan to measure student success Set deadline for academic support units to review student success factors and examine current efforts to enhance student success. Schedule dates for academic support unit directors to report to dean. 	<ul style="list-style-type: none"> By March 2006, each academic support unit in the department will report its efforts to enhance student success to the department chair. 	None

Unit Goal:	Increase Faculty and Student Research Opportunities
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
Research productivity (4)	2,4	Increase the number of research presentations made by department faculty and by department students by 15% in AY2005-06 compared to AY 2004-05.	<ul style="list-style-type: none"> Increase number of graduate students with undergraduate research experience. Increase number of graduate students pursuing master theses. Work towards a merit system that encourages research presentations. Increase the number of colloquium and seminar talks and conferences in the department. 	Compare the numbers of students and faculty involved in research activities in AY 2005-06 to AY 2004-05 to determine the percentage of change.	None None None None
		Increase the number of publications by faculty and students of the Department of Mathematics by 15% in AY 2005-06 compared to AY 2004-05.	<ul style="list-style-type: none"> Increase number of students with undergraduate research experience Increase number of graduate students pursuing masters' 	The Department chair, with the help of the Department's Planning Committee Chair will inform the faculty to maintain an updated record of their publication progress in	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
			<p>research projects.</p> <ul style="list-style-type: none"> • Work towards a merit system that encourages publication. 	<p>the Department's files. These publication records will follow the College guidelines, and they will be used to fill out the forms submitted to the College for AY 2004-05 and for AY 2005-06. Progress reports will be presented in the Spring of 2005 and 2006.</p>	
		<p>Increase the number of external grants received by Department faculty by 10%, and the number of proposals submitted by 20%</p>	<ul style="list-style-type: none"> • Continue to develop and submit research participation proposals • Allow discretionary release time 	<p>The Department Chair with the help of the chair of the Department's Planning Committee will encourage and facilitate faculty to increase the number of proposals funded for AY 2005-2006 and compare the number to those of AY 2004-2005. Only research proposals submitted and funded during the assessment period will be considered in this count. Faculty will be asked to keep the department's research files updated including submitted and funded proposals, to facilitate the assessment of this objective.</p>	<p>None</p> <p>Release time approval by Provost</p>

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



Annual Assessment Report: June 1, 2005–May 31, 2006

Unit: Department of Mathematics

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:** Lokenath Debnath

- Unit Mission:**
- To support the College of Science and Engineering mission stated by committing to excellence in instruction, student performance, research, scholarly accomplishment and professional service.
 - To provide students of mathematics an environment of academic freedom that will ensure the exchange of ideas, the dissemination of knowledge and the appreciation of Mathematics.
 - To inspire students with an appreciation of the impact of mathematics in a global economy, and with respect for the contributions made by previous generations.
 - To provide students analytical foundations empowering them to pursue chosen courses of study where they can apply mathematics meaningfully for the purpose of contributing to current and future societal needs.

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, and interdisciplinary perspectives.

- 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?)
Student learning outcomes assessment. (1)	2,4	The Department of Mathematics will implement a 2005-2006 student learning improvement plan,	The Departments of Mathematics will address the effectiveness of their student learning	The criteria for success were met in all the programs. In the BS in Mathematics the student learning outcomes were	For three out of six student learning outcomes, the exit survey is being augmented by an exit

Annual Assessment Report, June 1, 2005–May 31, 2006

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?)
		based on the 2004-2005 student learning outcome assessments, for the masters program, the bachelors program in mathematics, and the bachelors program in middle school mathematics teaching.	improvement plans in the 2005-2006 Annual Assessment Report due in June 2006.	over the criteria for success by the following percentage points: 9, 5, 24, 4, 9, 1, 5, 5, and 15. In the BS in Mathematics with Teacher Certification Grades 8-12 the student learning outcomes were over the criteria for success by for following percentage points: 5, 5, 30, 10, 5, 5, 5 and under the criteria for success only in one out of two items for one for the learning outcomes. In the BIS-Middle School Mathematics with Teacher Certification for grades 4-8 the student learning outcomes were over the criteria for success by the following percentage points: 25, 25, 50, 25, 25, 25, 25, 25, 25, and 25.	test as a means of assessment.
Time to graduate. (2)	2, 4	<ul style="list-style-type: none"> In Fall 2005, the Department of Mathematics 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 in the Department of 	Ten undergraduates received a Math degree in Fall 2005 and also 10 in Spring 2006. Two students graduated with MS in Mathematics in Fall 2005 and eight in Spring 2006.	Faculty and student awareness of the time to - graduation problems. Questionnaire raised about how well is the Department doing in the College and the University.

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"> The department will develop an integrated plan for improving time-to-graduation in its degreed programs beginning in AY 2006-2007. 	<p>Mathematics.</p> <ul style="list-style-type: none"> By the end of FY06, the department chair will approve the department plan for improving time-to-graduation or will request submission of revised plans by August 7, 2006. 		
Student success. (3)	2, 4	<ul style="list-style-type: none"> During summer 2005, request faculty input for a definition of student success including a list of factors that contribute to student success. The department of Mathematics will review the COSE 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"> By the end of September 2005, turn in to the COSE the Department of Mathematics input to the definition of student success, including a list of factors that contribute to the student success. By June 15, 2006, the chair of the department will turn in to the dean the department's plans for measuring student success. 	<p>Definition of student success. A successful Math student has a GPA 3.00 or higher, is involved either in supervised teaching or tutoring actively participates in scientific clubs or in other extra curricular activities relate to science. Factors contributing to students' success: a) Attitude toward Mathematics reflecting interest in learning and applying Math knowledge. b) Devote time and resources towards student success.</p> <p>Beginning in the Fall of 2006, every Math major and MS student will be</p>	<p>** Awareness that most faculty who participated in the survey turned in similar input.</p> <p>Math Faculty have participated in defining student success and implementing pilot questionnaires. Plans for comparing with the College are currently outlined, and they will be implemented in Fall 06.</p> <p>A pilot application of the questionnaire revealed that the time to graduation for undergraduate students is approximately 17% graduate in 4 years, 31% graduate in 5 years and</p>

Annual Assessment Report, June 1, 2005–May 31, 2006

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"> In spring 2006, each academic support unit in the department will review the official list of factors that contribute to student success, examine its current efforts to enhance student success, and report its findings to the department chair. 	<ul style="list-style-type: none"> By March 2006, each academic support unit in the department will report its efforts to enhance student success to the department chair. 	requested to fill out a questionnaire with questions measuring student success and factors contributing to student success. A pilot questionnaire was implemented in Summer 06.	52% graduate in 6 or more years.

Unit Goal:

Increase Faculty and Student Research Opportunities

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?)
Research productivity. (4)	2,4	Increase the number of research presentations made by department faculty and by department students by 15% in AY2005-06 compared to AY2004-05	Compare the numbers of students and faculty involved in research activities in AY2005-06 to AY2004-05 to determine the percentage of change.	The number of research presentations increased from 13 to 20 (53.8% increase). The number of presentations in conferences and workshops was 62 and 7 respectively.	The research community of the department continues its expansion and connections with other departments in the COS&E. The visibility of UTPA in the national and international community also continues to expand.

Annual Assessment Report, June 1, 2005–May 31, 2006

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?)
	2,4	Increase the number of publications by faculty and students of the department of Mathematics by 15% in AY 2005-06 compared to AY 2004-05.	The Department chair, with the help of the Department's Planning Committee Chair will inform the faculty to maintain an updated record of their publication progress in the department's files. These publication records will follow the College guidelines, and they will be used to fill out the forms submitted to the College for AY 2004-05 and for AY 2005-06. Progress reports will be presented in the Spring of 2005 and 2006.	The number of papers submitted increased from 15 to 41. The number of accepted papers increased from 7 to 15 and the number of published papers increased from 13 to 32. The percentage changes by items are 173%, 114% and 146%.	The faculty in the department of mathematics continues to develop connections with the regional, national and international community both in mathematics, science, engineering, and mathematics education.
		Increase the number of external grants received by Department faculty by 10%, and the number of proposals submitted by 20%	The Department Chair with the help of the chair of the department's Planning Committee will encourage and facilitate faculty to increase the number of proposals funded for AY 2005-2006 and compare the number to those of AY 2004-2005. Only research proposals submitted and funded during the assessment period will be considered	The number of external grants increased from 9 to 11 (22% increase), and the number of submitted grants was again 11.	The existing grants are giving rise to presentations of students and faculty, also contributing to increase the number of presentations both, locally and regionally.

Annual Assessment Report, June 1, 2005–May 31, 2006

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?)
			in this count. Faculty will be asked to keep the department's research files updated including submitted and funded proposals, to facilitate the assessment of this objective.		