

**The University of Texas-Pan American
 Student Learning Outcomes Assessment Report
 AY 2005-2006, Spring and Summer
 College: College of Science and Engineering
 Degree Program/Major: BS in MATHEMATICS**

Expanded Statement of Institutional Purpose

Mission Statement: 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.

Student Learning Outcomes	Means of Assessment	Criteria for Success	*Assessment Results* (Use actual data to describe annual performance.)	**Use of Results** (What change was made?)
Demonstrate in-depth knowledge of Mathematics, its scope, application, history, problems, methods, and usefulness to mankind both as a science and as an intellectual discipline.	a) Advanced courses: Probability and Statistics, Modern Algebra, Real Analysis, Differential Equations, Numerical Methods, History of Mathematics, Discrete Structures, and Theory of Numbers. b) Exit survey.	a) 75% of students pass at least two of these courses with grade B or higher. b) 75% of students answer positively to the specific questions of the survey.	Criteria for success were met: a) 84% of students passed at least two of these courses with grade B or higher. b) 80% of students answered positively to the specific questions of the survey.	Recommendation that the exit survey be augmented by exit test.
Demonstrate a sound conceptual understanding of Mathematics through the construction of mathematically rigorous and logically correct proofs.	a) Two courses that concentrate on teaching proofs: Modern Algebra and Real Analysis. b) Exit test.	a) 50% of students pass at least one of these courses with grade B or higher. b) 50% of students solve the problem of the exit test correctly.	Criteria for success were met: a) 74% of students passed at least one of these courses with grade B or higher. b) 54% of students solved the problem correctly.	There is an ongoing discussion in the Mathematics Department about how to introduce the concepts and techniques of proofs without additional courses.

Identify, formulate, and analyze real world problems with statistical or mathematical techniques.	a) Course that concentrate on real world problems: Calculus 1-2-3, Differential Equations, Probability and Statistics. b) Exit test.	a) 75% of students pass at least two of these courses with grade B or higher. b) 65% of students solve the problem on the exit test correctly.	Criteria for success were met: a) 84% of students passed at least two of these courses with grade B or higher. b) 66% of students answered positively to the specific questions of the survey.	a) The criteria for success has been modified to require 75% of students to pass at least two of these courses with grade B or higher b)The exit survey has been replaced by exit test.
Utilize technology as an effective tool in investigating, understanding, and applying mathematics.	Exit survey.	75% of students use technology to a significant degree in at least three courses.	Criterion for success was met: 80% of students used technology to a significant degree in at least three courses.	Recommendation that the exit survey be augmented by exit test.
Communicate mathematics effectively to mathematical and non-mathematical audiences in oral, written, and multi-media form.	A copy of materials used to make mathematical presentation in and out of class. Exit survey.	75% of students make at least one mathematical presentation in or out of class.	Criteria for Success were partially met: 80% of students made at least one mathematical presentation in or out of class.	
Demonstrate an appreciation of and enthusiasm for lifelong scientific inquiry, learning, and creativity.	Exit survey.	75% of students answer positively to the specific questions of the survey.	Criteria for success met 90% of students answered positively to the specific questions of the survey.	

*Comments: The data was collected in the 2006 Spring and Summer semesters. Information about nineteen students were examined, fifteen of them filled out the exit survey.

**Comments: