Mathematics SPA Report
Section I – Context

State and Institutional Policies

Three state agencies largely oversee the preparation and certification of new teachers. The Texas Education Agency (TEA) is responsible for providing leadership, guidance, and resources to help schools meet the educational needs of all students, and is the primary administrative unit for public education in the state. The State Board for Educator Certification (SBEC) is charged with ensuring the highest level of educator preparation and practice to achieve student excellence. Finally, the Texas Higher Education Coordinating Board (THECB) was created by the legislature to provide leadership and coordination for the Texas higher education system.

TEA, through its Division of Curriculum, oversees the development and implementation of the *Texas Essential Knowledge and Skills* (TEKS) in the public school curriculum. The TEA also oversees the administration of the *Texas Assessment of Knowledge and Skills* (TAKS). In addition to measuring student knowledge of the statewide curriculum at various points in students' careers, successful completion of the TAKS is a graduation requirement. The TEKS also inform and underlay the standards for educators developed and administered by SBEC, not least though the *Texas Examinations of Educator Standards* (TExES), the state certification examinations. THECB, in coordination with SBEC, has developed coursework guidelines for educator preparation programs. These guidelines include a limit of 120 total semester credit hours, a limit of 18-24 semester credit hours for education courses, and a requirement that candidates pursuing secondary certification must graduate with an academic major.

Field and Clinical Experiences

Professional field experiences are a vital component of all the secondary certification programs at Angelo State. These field experiences enable teacher candidates to, successively, observe, assist, and finally teach individuals and groups of students. As candidates progress from observer to practitioner, the field experiences serve as an invaluable bridge between content and practice. Candidates seeking a mathematics degree with teacher certification are required to complete a minimum of four professional field experiences, in addition and prior to student teaching.

In the required course Educational Psychology 3303 *Child and Adolescent Development*, candidates observe a student three times during the semester, and then write a summative case study describing the cognitive, social, and emotional development of the student as part of their course grade. In each of Education 4321 *Secondary School Organization and Curriculum* and Education 4322 *Teaching Techniques in the Secondary School*, students must complete ten hours of guided observation. They are required to maintain a journal on their experiences, and in addition are evaluated on their observations at midterm and at the end of the semester. In Reading 4320 *Reading in the Secondary School Content Areas*, candidates also complete ten hours of classroom observation, in which they are assigned specific strategies and activities to watch for. The candidates keep a response journal, and must also summarize their field experience as part of their course grade.

Student teaching is the culmination of the candidates' learning experience in the Educator Preparation Program. Once a candidate applies for clinical practice, the Department of Teacher Education coordinates with area school districts to place the candidate with a suitable supervising teacher. The experience is carefully planned, involves careful guidance and supervision, and is assessed both formatively and summatively. The university supervisor and the supervising teacher collaborate to produce a series of interim evaluations along with a final evaluation.

Criteria for Admission, Retention, and Exit from the Program

Candidates must apply for admission to the Educator Preparation Program (EPP) when they have completed between 60 and 75 semester credit hours. At that point, they must have a cumulative grade point average of at least 2.50, and have completed a reading requirement (History 1301 and 1302, or Government 2301 and 2302), a writing requirement (English 1301 and 1302), a mathematics requirement (Mathematics 1302), and a communication requirement (Communication 2301 or 2331). The courses taken to satisfy the reading, writing, mathematics, and communication requirements must all be completed with a grade of C or better. In addition, candidates must possess sound physical and mental health, and be of acceptable moral character.

After admission to the EPP, a retention checkpoint occurs with the application for student teaching. At the time of such application, all candidates must have completed a minimum of 95 semester credit hours with a cumulative grade point average of 2.50, be of sound physical and mental health, and maintain acceptable moral character. A candidate's eligibility to student teach depends on additional accomplishments both in the mathematics major and also in advanced pedagogy and professional responsibilities courses. In their major, candidates must have: a cumulative grade point average of at least 2.50; a grade point average of at least 2.50 in their major classes taken in residence; no grade lower than a C in major courses completed; and at least 24 semester credit hours, including at least 9 advanced hours, completed in their major. In the

pedagogy and professional responsibilities, candidates must have completed Education 4321 and 4322, Educational Psychology 3303, and Reading 4320, with no grade lower than a C, and a grade point average of at least 2.50 both in courses taken in residence and also cumulatively.

Besides the degree requirements applied to all students, candidates seeking a degree leading to teacher certification must satisfy additional grade point average requirements. Candidates must have a 2.50 cumulative grade point average; a 2.50 grade point average with no grade lower than a C in their mathematics major; and a 2.50 grade point average with no grade lower than a C in their professional education courses. Candidates seeking degrees leading to teacher certification must also complete their student teaching in residence.

Additional steps, including a passing score on the Texas Examination of Educator Standards (TExES), are required for students to be recommended for certification by the university.

Relationship to Conceptual Framework

The conceptual framework of the Educator Preparation Program at Angelo State University is based on a commitment to preparing professional education leaders who become reflective practitioners through developing content knowledge, pedagogical skills, and professional dispositions which lead to effective teaching; implementing defendable instructional decisions and technology applications; embracing active, engaged student-centered learning; teaching that is culturally relevant and responsive to the ever-changing developmental and educational needs of diverse students, families, and society in partnership with schools and communities.

The Program believes that candidates must be grounded in content knowledge. The secondary certification program in mathematics embraces this belief. By requiring candidates to successfully complete 36 semester credit hours in a variety of mathematics courses, candidates must exhibit extensive content knowledge in mathematics, as well as a significant mastery of technology. The program also believes that candidates must be thoroughly grounded in pedagogical skills, exhibit a pattern of reflection upon their professional experiences, and develop as student-centered educators. Twenty-four semester credit hours of professional education courses, eighteen of which are in courses with a field experience component, ensure that candidates must display the skills and dispositions to design effective curriculum, utilize appropriate instructional strategies, and create, monitor, and assess supportive learning environments. In addition, a rigorous series of field experiences in the program offers ample opportunity for candidates to observe, model, and demonstrate these dispositions. Finally, the climate of assessment, both formative and summative, that permeates the program not only models effective assessment techniques for candidates, it also has candidates demonstrate the cycle of action, assessment, reflection, and reaction that is so important to the candidates' professional success.

Program Assessments

A variety of program assessments are used to provide feedback both to the candidates and to the faculty administering the program. Teaching mathematics requires a wide range of knowledge, skills, and dispositions; a broad spectrum of assessment instruments is consequently required. The faculty continually review these assessments and the data they generate to strengthen the program and the preparation of our candidates.

The state certification examination, the TExES, is an assessment required by the NCTM, and is administered during the spring of a candidate's senior year.

Mathematics 4322 *A Survey of Mathematics with Applications* is a capstone course required of all certification candidates; it is typically taken in the fall of a candidate's senior year. The cumulative grade in this course is a second assessment of candidate content knowledge.

The measurement of a candidate's ability to plan instruction is assessed in the coursework and experiences of ED 4322, *Teaching Techniques in the Secondary School*.

Candidates complete a series of assignments designed to illustrate, develop, and implement plans for the delivery of instruction appropriate to secondary education content. Technology is utilized in the planning process with formats from *Lesson Builder* and *TaskStream*. Candidates also complete demonstration teaching with their peers.

Candidates are evaluated during student teaching (Education 4973 *Supervised Teaching in the High School* and Education 4323 *Teaching Techniques in the Secondary School*) using the *INTASC* (Interstate New Teacher Assessment and Support Consortium) standards for preparing and licensing new teachers. The standards describe what every beginning education professional should know and be able to do, and include knowledge, disposition, and performance statements representing a deep level of understanding and performance. Candidate impact on student learning is also evaluated during the student teaching block. This evaluation draws on the candidate's ability to analyze his or her effectiveness in learner-centered instructional decisions, and consists of three parts, integral to one other: a *Classroom Background Study*, focusing on demographics and the diversity of student needs; candidate reflection and adjustments in instruction based upon the candidate's own analysis of instructional effectiveness; and a disaggregation of the evaluative information from INTASC Principles.

Two surveys, one administered by the cooperating teacher during student teaching, and the other a graduating student survey taken by the candidate at the completion of the program, round out the assessments used.

These assessments mesh well with the university's assessment system; indeed, the assessments of candidates' ability to plan instruction, candidates' student teaching, and candidates' effect on student learning are used across all disciplines. Together with the TExES certification examination, required of all candidates seeking certification, these assessments provide an excellent basis for evaluation of candidates, regardless of their discipline.

Candidates and Completers

Program: Mathematics – secondary certification baccalaureate program		
Academic Year	**# of Candidates Enrolled in the Program**	**# of Program Completers[1]**
2007 - 2008	26	8
2006 – 2007	24	6
2005 – 2006	29	10

Program of Study

Bachelor of Arts

(Mathematics major with teacher certification)

ACADEMIC MAJOR	Semester hours
Mathematics 1361, 1362, 2331, 2332	12
Mathematics 3301, 3307, 3310, 3333, 4301, 4321, 4322	21
Mathematics 4331 or 4351	3

OTHER REQUIREMENTS	
Communication 2301 or 2331	3
English 1301, 1302, and sophomore literature	9
Government 2301 and 2302	6
History 1301 and 1302	6
Humanities (English – an additional sophomore literature; History 2331, 2332; Philosophy 2301, 2311, 2321; French 2372, German 2372)	3
Modern Language 2311 (Spanish 2310 or 2311), 2312	6

Natural Science (two lab sciences: biology, chemistry, geology, physical science, physics)*	8
Physical Activity	1
Social Science (economics, geography, psychology, sociology) lower division	3
Visual and Performing Arts (art, drama, music) lower division	3

PROFESSIONAL EDUCATION

Education 4973 Student Teaching	9

PROFESSIONAL EDUCATION MINOR

	Semester hours
Education 2323, 4321, 4322, and 4323	12
Educational Psychology 3303	3
Reading 4320	3
ELECTIVES	9

The above plan meets all core curriculum and general Bachelor of Arts degree requirements.

This degree requires 120 semester hours, of which 48 are advanced.

* Students may take the laboratory science courses in one or more disciplines.

Bachelor of Science

(Mathematics major with teacher certification)

ACADEMIC MAJOR	Semester hours
Mathematics 1361, 1362, 2331, 2332	12
Mathematics 3301, 3307, 3310, 3333, 4301, 4321, 4322	21
Mathematics 4331 or 4351	3

OTHER REQUIREMENTS	
Biology or Geology	8
Chemistry 1411 and 1412 or Physics 1441 and 2442	8
Communication 2301 or 2331	3
English 1301, 1302, and sophomore literature	9
Government 2301 and 2302	6
History 1301 and 1302	6
Physical Activity	1
Social Science (economics, geography, psychology, sociology)	

lower division	3
Visual and Performing Arts (art, drama, music)	
lower division	3

PROFESSIONAL EDUCATION

Education 4973 Student Teaching	9

PROFESSIONAL EDUCATION MINOR

Education 2323, 4321, 4322, and 4323	12
Educational Psychology 3303	3
Reading 4320	3
ELECTIVES	10

The above plan meets all core curriculum and general Bachelor of Science degree requirements.

This degree requires 120 semester hours, of which 48 are advanced.

Course Descriptions

130A **Fundamentals of Mathematics I (3-2).** Fundamental operations involving whole numbers and fractions; decimals and percents; ratio and proportion; interpretation of graphs; metric and nonmetric geometry; counting; combinations and permutations; introduction to algebra. (Laboratory activities will supplement classroom instruction.)

130B **Fundamentals of Mathematics II (3-2).** Axioms and properties of the real number system; fundamental operations involving algebraic expressions; first degree equations and inequalities in one unknown; products and factoring; algebraic fractions; exponents and radicals; quadratic equations; functions and graphs; systems of equations; applications. (Laboratory activities will supplement classroom instruction.)

1302 **College Algebra (3-0).** Exponents and radicals, logarithms, factoring, algebraic quotients, systems of equations, inequalities, absolute value, complex numbers, quadratic equations, binomial theorem, progressions, theory of equations, and determinants.
Prerequisite: Mathematics 130B or equivalent, or an acceptable score on the mathematics section of the ACT or the quantitative section of the SAT I.

1303 **Plane Trigonometry (3-0).** Trigonometric functions, radian measure, logarithms, solutions of triangles, functions of composite angles, identities, trigonometric equations, and complex numbers.
Prerequisite: Mathematics 130B or equivalent, or an acceptable score on the mathematics section of the ACT or the quantitative section of the SAT I.

1311 **Mathematics for Business I (3-0).** Review of algebra, business mathematics, mathematics of finance, matrix theory, and linear programming.
Prerequisite: Mathematics 130B or equivalent, or an acceptable score on the mathematics section of the ACT or the quantitative section of the SAT I.

1312 **Mathematics for Business II (3-0).** Set theory, counting techniques and probability, random variables and distribution functions, and differential and integral calculus.
Prerequisite: Mathematics 1302 or 1311.

1321 **Analytic Geometry (3-0).** Coordinate systems, translations, rotations, lines, circles, conics, parametric equations, and elementary three-dimensional geometry.
Prerequisites: Mathematics 1302, 1303; or equivalent.

1332 **Introduction to Contemporary Mathematics (3-0).** A course designed for liberal arts and other non-mathematics and non-science majors who wish to satisfy the three-hour core curriculum mathematics requirement. Topics include graphs and networks, theory of elections and apportionment, statistics, mathematical models.
Prerequisite: Mathematics 130B or equivalent, or an acceptable score on the mathematics section of the ACT or the quantitative section of the SAT I.

1341 **Mathematics for Elementary/Middle School Teachers I (2-2).** Sets and relations, the system of whole numbers, numeration systems, the system of integers, elementary number theory, fractions and rational numbers, decimals and real numbers. Lab activities will include making and using math manipulatives, comparing different problem solving techniques, making interdisciplinary connections, and experiencing math concepts through auditory, visual, and kinesthetic approaches to inquiry-based activities.
Prerequisite: Mathematics 1302.

1342 **Mathematics for Elementary/Middle School Teachers II (2-2).** Decimals and real numbers, nonmetric geometry, metric geometry, measurement, graphs, probability

and statistics. Lab activities will include making and using math manipulatives, comparing different problem solving techniques, making interdisciplinary connections, and experiencing math concepts through auditory, visual, and kinesthetic approaches to inquiry-based activities.
Prerequisite: Mathematics 1341.

1361 **Precalculus I (3-0).** An intensive overview of the algebraic concepts needed for calculus, including algebraic expressions, equations and inequalities, complex numbers, polynomials, rational functions, exponential and logarithmic functions, inverse functions, systems of equations and inequalities, matrices, sequences and series, binomial theorem.
Prerequisite: Mathematics 1302 with a grade of C or better, or a score of 26 or higher on the mathematics section of the ACT, or a score of 580 or higher on the mathematics section of the SAT I, or equivalent.

1362 **Precalculus II (3-0).** A survey of topics from trigonometry and analytic geometry, including trigonometric functions, graphs, identities, and equations; trigonometric form of complex numbers; powers and roots of complex numbers; parabolas, ellipses, hyperbolas; parametric equations; polar coordinates; applications.
Prerequisite: Mathematics 1361 or equivalent.

2331 **Calculus I (3-0).** Differential calculus for functions of one variable including a study of limits, continuity, derivatives of different classes of functions, maxima and minima, concavity, related rates, and optimization problems.
Prerequisites: Mathematics 1361 and 1362, or equivalent.

2332 **Calculus II (3-0).** Introduction to the (Riemann) integral and the relationship between the derivative and integral; techniques for evaluating integrals using the fundamental theorem of calculus; applications of the integral to physical and geometrical problems.
Prerequisite: Mathematics 2331.

3300 **Introduction to Abstract Mathematics (3-0).** Logic, set operations, equivalence relations, properties of the real number system, cardinality of sets, and related topics, with an emphasis throughout on developing the necessary skills to read and construct formal mathematical arguments. To ensure timely progress toward the degree, this course should be taken as soon as possible after completion of Mathematics 2331.
Prerequisite: Mathematics 2331 or equivalent.

3301 **Linear Algebra (3-0).** The algebra and geometry of finite dimensional vector spaces; determinants; linear transformations and matrices; characteristic values and vectors of linear transformations.
Prerequisite: Mathematics 2331.

3307 **Probability and Statistics I (3-0).** Mathematical models of random events; probability spaces; random variables; dependence and independence; mean values and moments of random variables; distribution functions, and characteristic functions.
Prerequisite: Mathematics 3333.

3310 **Introduction to Problem Solving (3-0).** Designed to help the student develop analytical skills through exposure to a variety of problem solving techniques utilizing algebra, geometry, trigonometry, and other areas of precalculus mathematics. Includes graphing calculator and instructional software applications. For students pursuing secondary or middle school teacher certification in mathematics. To ensure timely progress toward the degree, this course should be taken as soon as the prerequisites

have been completed.
Prerequisites: Mathematics 1361 and 1362; or Mathematics 1302, 1303, and 1321; or equivalent. (Formerly MATH 2302)

3311 **Elementary Number Theory (3-0).** Tests for divisibility, unique factorization, integer representations, greatest common divisors, least common multiples, congruences, and the distribution of primes.
Prerequisites: Mathematics 1302, 1341, and 1342.

3313 The Evolution of Mathematics (3-0). Historical development of selected mathematical concepts, terminology and algorithms; impact of mathematics on the development of our culture.
Prerequisites: Mathematics 1302, 1341, and 1342.

3321 **Statistics (3-0).** A survey of basic statistical methods, including distributions, central tendency, variability, hypothesis testing and correlation; brief introduction to sampling techniques and nonparametric methods. For nursing students.
Prerequisite: Mathematics 130B or equivalent, or an acceptable score on the mathematics section of the ACT or the quantitative section of the SAT I.

3323 **Exploring Middle School Mathematics (3-0).** Mathematical reasoning and problem solving; numerical systems, structure, operations, and algorithms; patterns, relations and functions, algebraic concepts and applications; geometry, measurement, and spatial reasoning; probability and statistics. Graphing calculators and other supporting technologies will be incorporated where appropriate. For students pursuing middle school certification in mathematics.
Prerequisites: Mathematics 1312, 1321, 3310, 3311, and 3321; 2.50 GPA, with no grade lower than C in all required mathematics courses attempted, cumulative and in residence. Concurrent registration in Mathematics 3311 or 3321 may be permitted in special circumstances with consent of instructor.

3333 **Calculus III (3-0).** Multivariate calculus and applications; indeterminate forms, multiple integrals, infinite series, and approximation techniques.
Prerequisite: Mathematics 2332.

3335 **Differential Equations (3-0).** Solution of differential equations, with geometric and physical applications.
Prerequisite: Mathematics 3333, or Mathematics 2332 with consent of instructor.

4301 **Abstract Algebra (3-0).** Elementary number theory including integer congruences and modular arithmetic, equivalence relations, basic topics in ring and group theory including the fundamental homorphism theorems, structure and basic properties of fields.
Prerequisite: Mathematics 3300 or 3310; Mathematics 3301.

4311 **Numerical Analysis (3-0).** Number representations, error analysis; roots of equations; numerical integration, approximation, and differentiation; systems of equations; approximation by spline functions; ordinary differential equations; Monte Carlo methods and simulation.
Prerequisites: Mathematics 3333 and Computer Science 2301.

4321 **College Geometry (3-0).** A study of Euclidean, non-Euclidean, and transformational geometry. For students seeking middle school or secondary school teacher certification in mathematics.
Prerequisites: Mathematics 1361 and 1362; or Mathematics 1302, 1303, and 1321; or equivalent.

4322 **A Survey of Mathematics with Applications (3-0).** Logic and set theory, algebraic and transcendental functions, inverse functions, limits, the derivative and integral, sequences and series, linear systems, vectors, geometry, probability and statistics. Emphasis on applications utilizing the graphics calculator.
Prerequisites: Mathematics 3301, 3333, and 3307; 2.50 GPA, with no grade lower than C in all required mathematics courses attempted, cumulative and in residence. Mathematics 3307 and 4322 may be taken concurrently.

4331 **Analysis (3-0).** The real and complex number systems, Euclidean spaces, countable and uncountable sets, metric spaces, compactness, convergent sequences, Cauchy sequences, limits and continuity, uniform continuity, the derivative, the Riemann-Stieltjes integral, sequences and series of functions, uniform convergence.
Prerequisites: Mathematics 3300 or 3310; Mathematics 3301, 3333.

4351 **Topology (3-0).** Sets and functions, metric spaces, topological spaces, compactness, separation, connectedness, approximation.
Prerequisites: Mathematics 3300 or 3310; Mathematics 3301, 3333.

4361 **Complex Variables (3-0).** Complex numbers, analytic functions, complex integration, power series, residues, conformal mapping, and applications.
Prerequisite: Mathematics 3333.

4391 Research. Individual research problems. (May be repeated to a total of six semester hours credit.)
Prerequisite: Junior standing.

Faculty Chart

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Allen, Donny	B.S., Mathematics, Angelo State	Developmental faculty	Lecturer	No	1997 – 1998, secondary mathematics teacher in

	University, 1989				Aspermont, TX, ISD

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2006-2008	Developmental Mathematics Lab	Tutor
	Donny teaches only developmental mathematics courses	

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Bailey, Dionne	Ph.D., Mathematics, Emory University, 2001	Faculty	Assistant Professor	Yes; tenured	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Presentation, Annual Texas Section of the Mathematical Association of America (MAA)	"Mean Stuff"

2007	Presentation, Conference for the Advancement of Mathematics (CAMT)	"MELL Initiative Project – Mathematics for English Language Learners"
2007	Co-publication in *Mathematics Magazine*, **80**, no. 5, December 2007, pp. 363-368.	"An Alternative Approach to the A=mP Problem for Triangles"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Barnard, Jana	M.A.T., Mathematics, Angelo State University, 1977	Faculty	Senior Instructor	No	Taught mathematics and science, San Angelo ISD: 1986 – 1987; 1983 – 1984; 1978 – 1982. Taught mathematics and science, Wall ISD: 1974 – 1978,

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional**	**Name of Presentation**

	Association, Entity, **Committee, or Activity**	**or Product or Role**
2008	West Texas Middle School Math Partnership (WTMSMP), National Science Foundation Math-Science Partnership grant. This is a five-year, $6 million award.	Senior Personnel
2008	Presentation, Conference for the Advancement of Mathematics (CAMT)	"Exploring Fractions"
2008	Region XV Service Center Professional Development Workshops	"Polyhedra (grades 8-12)" "More Hodgepodge (grades K-2)" "Problem Solving (grades 3-5)"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Barrientos, Mario	M.S., Applied-Industrial Mathematics, UTSA, 2007	Faculty	Lecturer	No	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2007	Earned M.S. from UTSA	M.S. in Applied-Industrial Mathematics awarded

2008	Developmental Mathematics Lab	Tutor
	Mario joined the ASU faculty in Fall 2008. He has so far taught only developmental mathematics courses.	

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Bishop, Cynthia	M.S., Kinesiology, Angelo State University, 2002	Faculty	Lecturer	No	High school mathematics teacher, San Angelo ISD, 2000 - 2004

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2007-2008	Work towards M.S. degree	Completed 27 hours toward M.S. in Mathematics at Texas A&M University

2006-2008	Developmental Mathematics Lab	Tutor
	Cindy teaches only developmental mathematics classes.	

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Campbell, Elsie	Sp.A., Mathematics, Western Michigan University, 1971	Faculty	Senior Instructor	No	High School mathematics teacher, Wall ISD, 1990 – 1997. Mathematics Teacher, Spring Lake High School, 1972 - 1973

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**

2008	Presentation, Texas Academy of Science Annual Meeting	"Mean Stuff"
2007	Co-publication in *Mathematics Magazine*, **80**, no. 5, December 2007, pp. 363-368.	"An Alternative Approach to the A=mP Problem for Triangles"
2007	Presentation, Mathematics for English Language Learners (MELL) Conference	"Analytic Approach to Polygonal Area"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Diminnie, Charles	Ph.D., Mathematics, Michigan State University, 1970	Faculty	Associate Professor	Yes	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Problem Solutions published in *Crux Mathematicorum, The Pi Mu Epsilon Journal, School Science and Mathematics,* and *Mathematical*	Seventeen problem solutions published.

	Mayhem	
2006-2008	Angelo State University Mathematics Student Problem Solving Group	Coordinator; Seven student solutions published
2007	Co-publication in *Mathematics Magazine*, **80**, no. 5, December 2007, pp. 363-368.	"An Alternative Approach to the A=mP Problem for Triangles"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Havlak, Karl	Ph.D. in Mathematics, Texas Tech University 1996	Faculty	Associate Professor	Yes; tenured	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Alpha Chi National Honor Society	President, Region 1
2008	Presentation, International Conference on Technology in Collegiate	"So you want to offer an online mathematics course?"

	Mathematics (ICTCM)	
2006	Presentation, National Joint Meeting of the Mathematical Association of America (MAA) and the American Mathematical Society (AMS)	"Suggestions for Some Tough Online Issues"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Hoover, Autumn	M.S. in Mathematics, Angelo State University, 1997	Faculty	Senior Instructor	No	High School mathematics teacher, Water Valley High School, 1997 – 1999.

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2006-2008	Angelo State University Developmental Mathematics	Director
2006-2008	Developmental Mathematics Lab	Tutor

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Huckaby, David	Ph.D. in Mathematics, UCLA, 2001	Faculty	Assistant Professor	Yes	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2007-2008	Book Reviews Published at Mathematical Association of America website	*Matrix Methods in Data Mining and Pattern Recognition,* by Elden *Theorems in School: From History, Epistemology and Cognition to Classroom Practice*, edited by Boero

		A Primer on Wavelets and Their Scientific Applications, Second Edition, by Walker
2008	Presentation, Texas Section of the Mathematical Association of America (MAA)	"A Look at Latent Semantic Analysis"
2006	Project NExT	Dolciani-Halloran Foundation NExT Fellow

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Johnson, Harvey	M.A. in Mathematics, Texas Tech University, 1973	Faculty	Associate Professor	Yes; tenured	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2006-2008	Developmental Mathematics Lab	Tutor

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Kloboucnik, Nancy	M.B.A., Information Systems, Golden Gate University, 1989	Faculty	Lecturer	No	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2006-2008	Developmental Mathematics Lab	Tutor
	Nancy teaches only developmental	

	mathematics courses.	

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Koca, Paula	B.A. in Mathematics, Angelo State University, 2005	Developmental faculty	Lecturer	No	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2007-2008	Developmental Mathematics Lab	Tutor
2008	Nicholls State University	Graduate mathematics classes taken in pursuit of a masters

		degree
	Paula was hired in 2007, and teaches only developmental mathematics courses.	

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Montemayor, Juan	M.S., Applied Mathematics, Texas A&M University, 1985	Faculty	Senior Instructor	No	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2006-2008	University Interscholastic League (UIL)	Middle school mentor at Wall ISD
2006-2008	*Helping One Student To Succeed* (HOSTS) and *Students and Tutors*	Volunteer Tutor in San Angelo

	Achieving Remarkable Success (STARS)	ISD
2006-2008	Developmental Mathematics Lab	Tutor

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Moreland, Ellen	M.S., Mathematics Clarkson College of Technology, 1977	Faculty	Senior Instructor	No	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Developed report for Ethicon	*Statistical Quality Control – The Ins and Outs of Sampling Plans*
2006-2008	Angelo State University Secondary	Coordinator

	Mathematics Program	
2006-2008	Developmental Mathematics Lab	Tutor

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Siefker, Andrew	Ph.D., Mathematics, Arizona State University, 1997	Faculty	Assistant Professor	Yes	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Presentation, Annual Texas Section of the Mathematical Association of America (MAA)	"Extending the Fejer-Riesz Theorem"

2008	Co-authored article accepted for publication in *Paleobiology*	"Modeling the Morphology and Evolution of the Linea Sinuosa (Crown-Root Junction) in Arvicolid Rodents; A Test with Pliocene Ogmodontomys from Kansas"
2006	Coauthored article published in *Courier Forschungsinstitut Senckenberg*, 256: 193-200 (2006)	"Morphometric variability in the first lower molars of North American Ogmodontomys (Arvicolidae, Rodentia, Mammalia) determined by Fourier analysis"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Smith, John C.	Ph.D., Mathematics, University of North Texas, 1999	Faculty	Assistant Professor	Yes; tenured	Junior High School mathematics teacher, Edison Junior High (SAISD), 1984 - 1991

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2007-2008	Supervised Carr Research Fellow	"A Probabilistic Algorithm for Measuring Coastline Length"

2006	Supervised Carr Research Fellow	"Applications of Fuzzy Logic"
2006	Angelo State University Teaching Excellence Award	Winner

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Swets, Paul K.	Ph.D. in Mathematics, UT, 1995	Head, Department of Mathematics	Associate Professor	Yes; tenured	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	West Texas Middle School Math Partnership (WTMSMP), National Science Foundation Math-Science Partnership grant. This is a five-year, $6 million award.	Co-PI
2007-2008	Hill Country Teacher Training	Campus Leadership Team

	Initiative	
2007	Co-publication in *Mathematics Magazine*, **80**, no. 5, December 2007, pp. 363-368.	"An Alternative Approach to the A=mP Problem for Triangles"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Talley, Catherine	M.A. in Mathematics, UNT, 1977	Faculty	Senior Instructor	No	Dallas ISD High School Mathematics Teacher, 1974 – 1975; Mesquite ISD High School Mathematics Teacher, 1972 - 1974

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**

2008	West Texas Middle School Math Partnership (WTMSMP), National Science Foundation Math-Science Partnership grant. This is a five-year, $6 million award.	Senior Personnel
2008	Presentation, Conference for the Advancement of Mathematics (CAMT)	"Exploring Fractions"
2008	Region XV Service Center Professional Development Workshops	"Polyhedra (grades 8-12)" "More Hodgepodge (grades K-2)" "Problem Solving (grades 3-5)"

Faculty Member Name	Highest Degree, Field, and University	Assignment	Rank	Tenure Track?	Teaching or other professional experience in P-12 schools
Zarnowski, Roger	Ph.D., Mathematics, Indian University, 1988	Faculty	Professor	Yes; tenured	none

Scholarship, Leadership, Service Accomplishments		
Year(s)	**Name of Professional Association, Entity, Committee, or Activity**	**Name of Presentation or Product or Role**
2008	Publication accepted to appear in *The Fibonacci Quarterly*	"The Congruence Structure of the *3x+1* Map"
2008	"Discrete Wavelet Module-Writing	Invited participant

	Workshop," sponsored by the Mathematical Association of America (MAA)	
2007	Article published in *The College Mathematics Journal* **38** no. 4 (September 2007, 304-308.	"From Cyclic Sums to Projective Planes"

SECTION II— LIST OF ASSESSMENTS

In this section, list the 6-8 assessments that are being submitted as evidence for meeting the NCTM standards. All programs must provide a minimum of six assessments. If your state does not require a state licensure test in the content area, you must substitute an assessment that documents candidate attainment of content knowledge in #1 below. For each assessment, indicate the type or form of the assessment and when it is administered in the program.

	Name of Assessment[2]	Type or Form of Assessment[3]	When the Assessment Is Administered[4]
1	**[Licensure assessment, or other content-based assessment]**	TExES state certification exam	Spring of Senior Year
2	**[Assessment of content knowledge in mathematics]**	Grades in Math 4322 Capstone Class	Fall of Senior Year; required course

[2] Identify assessment by title used in the program; refer to Section IV for further information on appropriate assessment to include.
[3] Identify the type of assessment (e.g., essay, case study, project, comprehensive exam, reflection, state licensure test, portfolio).
[4] Indicate the point in the program when the assessment is administered (e.g., admission to the program, admission to student teaching/internship, required courses [specify course title and numbers], or completion of the program).

	Name of Assessment[2]	Type or Form of Assessment[3]	When the Assessment Is Administered[4]
3	**[Assessment of candidate ability to plan instruction]**	Coursework and experiences in Education 4322	Fall of Senior Year; required course
4	**[Assessment of student teaching]**	INTASC Standards during Education 4973 and Education 4923	Spring of Senior Year; required courses
5	**[Assessment of candidate effect on student learning]**	Student Teaching / Teacher Work Samples	Spring of Senior Year; required courses
6	**Additional assessment that addresses NCTM standards *(required)*]**	Student Teaching evaluations / questionnaire	End of student teaching assignment; required course
7	**Additional assessment that addresses NCTM standards *(optional)*]**	Graduating student survey	Completion of the program

SECTION III—RELATIONSHIP OF ASSESSMENT TO STANDARDS

For each NCTM standard on the chart below, identify the assessment(s) in Section II that address the standard. One assessment may apply to multiple NCTM standards.

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
Mathematics Preparation for All Mathematics Teacher Candidates	
1. Knowledge of Problem Solving. Candidates know, understand and apply the process of mathematical problem solving. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 ?#3 ?#4 ?#5 ?#6 ?#7 ?#8
2. Knowledge of Reasoning and Proof. Candidates reason, construct, and evaluate mathematical arguments and develop an appreciation for mathematical rigor and inquiry. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 ?#4 ?#5 ?#6 ?#7 ?#8
3. Knowledge of Mathematical Communication. Candidates communicate their mathematical thinking orally and in writing to peers, faculty and others. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	?#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
4. Knowledge of Mathematical Connections. Candidates recognize, use, and make connections between and among mathematical ideas and in contexts outside	X#1 X#2 X#3 X#4

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
mathematics to build mathematical understanding. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#5 X#6 ?#7 ?#8
5. Knowledge of Mathematical Representation. Candidates use varied representations of mathematical ideas to support and deepen students' mathematical understanding. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
6. Knowledge of Technology. Candidates embrace technology as an essential tool for teaching and learning mathematics. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
7. Dispositions. Candidates support a positive disposition toward mathematical processes and mathematical learning. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	?#1 ?#2 ?#3 X#4 X#5 X#6 X#7 ?#8
8. Knowledge of Mathematics Pedagogy. Candidates possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
Mathematics Preparation for Secondary Level Mathematics Teacher Candidates	

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
9. Knowledge of Number and Operations. Candidates demonstrate computational proficiency, including a conceptual understanding of numbers, ways of representing number, relationships among number and number systems, and the meaning of operations. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 ?#3 X#4 ?#5 X#6 ?#7 ?#8
10. Knowledge of Different Perspectives on Algebra. Candidates emphasize relationships among quantities including functions, ways of representing mathematical relationships, and the analysis of change. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
11. Knowledge of Geometries. Candidates use spatial visualization and geometric modeling to explore and analyze geometric shapes, structures, and their properties. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
12. Knowledge of Calculus. Candidates demonstrate a conceptual understanding of limit, continuity, differentiation, and integration and a thorough background in techniques and application of the calculus. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
13. Knowledge of Discrete Mathematics. Candidates apply the fundamental ideas of discrete mathematics in the formulation and solution of problems.	X#1 X#2 X#3 X#4

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
[Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#5 X#6 ?#7 ?#8
14. Knowledge of Data Analysis, Statistics, and Probability. Candidates demonstrate an understanding of concepts and practices related to data analysis, statistics, and probability. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
15. Knowledge of Measurement. Candidates apply and use measurement concepts and tools. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 X#3 X#4 X#5 X#6 ?#7 ?#8
16.1 Field-Based Experiences Engage in a sequence of planned opportunities prior to student teaching that includes observing and participating secondary mathematics classrooms under the supervision of experienced and highly qualified teachers.	Information should be provided in Section I (Context) to address this indicator.
16.2 Field-Based Experiences Experience full-time student teaching secondary-level mathematics that is supervised by an experienced and highly qualified teacher and a university or college supervisor with elementary mathematics teaching experience.	Information should be provided in Section I (Context) to address this indicator.
16.3 Field-Based Experiences Demonstrate the ability to increase students' knowledge of mathematics.	?#1 ?#2 ?#3 X#4

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
	?#5 X#6 ?#7 ?#8