APPENDICES

A. UTPA Generic Syllabi
    A.1: MATH 1300
    A.2: MATH 1334
    A.3: MATH 1340/1440

B. STC Generic Syllabi
    B.1: MATH 0085
    B.2: MATH 0090
    B.3: MATH 1414

Appendix A. UTPA Generic Syllabi

Appendix A.1: MATH 1300

The University of Texas-Pan American
Department of Mathematics
Math 1300 Elementary Algebra Syllabus Fall, 2011

Instructor: [*insert*]
Office Location: [*insert*]
Office Phone: [*insert*] **, Department Phone:** 665-2361 or 665-3451
Office Hours: [*insert*]
E-mail: [*insert*]
Website: [*insert*]

Required Textbook:
Elementary and Intermediate Algebra By Jerome E. Kaufmann and Karen L. Schwitters 6th edition ; year 2011 ; ISBN 113352950X. Bring your textbook to each class meeting.

Course Prerequisites:
Math 1300 is the first course in the math sequence.
* Student with ACT score of 16 or less, and
* THEA score of 229 or less, or
* SAT score of 399 or less
* Elementary Algebra part of ACCUPLACER (EA-A) score 81 or less are to enroll in this course.

This course may not be used to satisfy any general university graduation requirements. This course does not count toward a student's hours for graduation or in the determination of hours attempted or earned.

Objective:

The major objective of this course is to prepare students for the Intermediate Algebra course with ability to apply the basic mathematical tools leading to the solution of real-world problems. The mathematical topics introduced and discussed in this course are: basic operations on real numbers, elementary geometry, introduction to algebra, linear equations and graphs, linear equations and their applications, exponent properties, systems of linear equations with two unknowns, basic algebraic operations on polynomials,and various factoring methods.

Student Learning Outcomes: After completing this course students will be able to

1. Demonstrate their ability to transform algebraic expressions using algebraic properties and the order of operations to evaluate, simplify, expand, factor, and otherwise produce equivalent expressions.
2. Demonstrate knowledge and understanding of rational numbers, algebraic properties combining like terms, and combining several algebraic properties to solve linear equations. Apply the knowledge of ratios, proportion, and percent in problem solving.
3. Recognize and use algebra to model and solve application problems (e.g., geometric, mixtures, and motions), identify unknown variables, set up an algebraic model, solve, and interpret solution(s). This includes the use and solution of 2x2 systems of linear equations by substitution or by the elimination-by-addition method.
4. Demonstrate their ability to graph linear equations, determine slopes of non vertical lines, graphically solve 2 x 2 systems of linear equations, and to solve linear relationship application problems using Cartesian coordinate systems.
5. Demonstrate knowledge and understanding of exponents (positive, negative and zero). Comprehend and apply the concept of polynomials and its operations such as addition, subtraction, multiplication and division.
6. Identify and factor polynomial expressions using various methods, and apply factoring techniques with Zero Product Property to solve equations.

Class Policies

Attendance: Any student who accumulates the equivalent of **three (3) hours** of absences, **excused or unexcused**, may be withdrawn from the class with the grade "**DR**"

Make-Up Exam: No make-up exam of any kind will be administered unless the absence meets the policy set in HOP Section 5.2.4 on "Class Attendance". It is your responsibility to inform the instructor of any excused absences <u>before the exam or as soon as possible</u> and to schedule a make-up exam. A make-up exam will be administered no later than 48 hours of the missed exam. A grade of zero will be given for a missed exam. This policy will be adhered to strictly.

Classroom Behavior: Students are expected to conduct themselves in a polite and respectable fashion at all times and are expected to treat their fellow students and the instructor with courtesy and respect. Also, the use of any electronic device in classroom without permission of instructor will not be allowed. This includes cell phones, laptops, IPods, and IPads.

The ways to get help outside your classroom:

1. Visit your instructor during his/her office hours or make appointment for such visits.
2. Get free Math tutoring from Learning Assistance Center (LAC) building in Room 114 phone # 665-2532
3. Get free Math tutoring from Math Lab I & II in Math building (MAGC) in room 3.510 & MAGC in room 3.530
4. Go to library and view the videos and a complete solutions manual. The videos and complete solutions manual cannot be checked out for home use.
5. The use of new software is called Enhanced WebAssign which contains an online version of the text book. Student may access this software through http://webassign.net for online homework assignments.

Course Grade:

       Homework: [insert % optional]
       Quizzes: [Insert % optional]
       Tests: [insert]
       Departmental comprehensive Final Exam (25)%

Grading Scheme:

Course Grade (%)	Course Letter Grade
90-100	RA
80-89	RB
70-79	RC
60-69	RD
Below 60	RF

TSI Information:

In response to a new state law, The University Texas- Pan American has made significant changes to our educational development plan. What was once call TASP is now the Texas Success Initiative (TSI). If you are TSI-affected, you must plan to enroll in, attend, and complete the course or face severe consequences, such as withdrawal from the university. If you have any question regarding this policy, contact the Advisement Center, located in the University Center (UC) room 215 or call 956-381-2529.

Disabilities:

Students with disabilities are encouraged to contact the Disability Services office for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Texas-Pan American to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Disability Services office (DS), University Center #322, 665-7005, disabilityservices@utpa.edu. The Director of the Disabilities is: Christine Stuart-Carruthers, DS-Director, Ph: 665-5375, carruthers@utpa.edu."

BroncMail:

"The new university policy requires all electronic communication between the University and the students be conducted through the official University supplied systems; namely BroncMail for email or Blackboard for course specific correspondence. Therefore, please use your UTPA assigned BroncMail or Blackboard account for all future correspondence with the UTPA faculty and staff."

	6.2	Multiplying Monomials 272	277-279	
	6.3	Multiplying Polynomials 279	285-287	
	6.4	Dividing by Monomials 287	290-291	
	6.5	Dividing by Binomials 291	295-296	
	6.6	Zero and Negative Integers as Exponents 297	302-304	
		Chapter 6 Summary 305		
		Chapter 6 Review Problem Set 305		
		Cumulative review Problem Set (Chapter 1-6) 309		
		CHAPTER 7: Factoring, Solving Equations, and Problem Solving 311		
	7.1	Factoring by Using the Distributive Property 312	317-319	
	7.2	Factoring the Difference of Two Squares 320	323-325	
	7.3	Factoring Trinomials of the Form $x^2 + bx + c$ 325	332-333	
	7.4	Factoring Trinomial of the Form $ax^2 + bx + c$ 334	337-338	
	7.5	Factoring, Solving Equations, (and Problem Solving 339 **OPTIONAL**)	346-348	
Week 15		**Review for Final Exam**		
Departmental Final Exam	**Monday**	**for all Math 1300 classes / room to be announced**		

Appendix A.2: MATH 1334

The University of Texas-Pan American
Department of Mathematics
Math 1334 Intermediate Algebra Syllabus Fall, 2011

Instructor:	[	*insert*	]	
Office Location:	[	*insert*	]	
Office Phone:	[	*insert*	] , **Department Phone:**	665-2361 or 665-3451
Office Hours:	[	*insert*	]	
E-mail:	[	*insert*	]	
Website:	[	*insert*	]	

Required Textbook:

Elementary and Intermediate Algebra By Jerome E. Kaufmann and Karen L. Schwitters 6th edition ; year 2011 ; ISBN 113352950X. Bring your textbook to each class meeting.

Prerequisites: Enrollment in MATH 1334 Intermediate Algebra requires at least one of the following scores:
- Earned a "C" or better in Math 1300 (Elementary Algebra)   or
- ACT Math score of 17, 18, or 19,   or
- Math TASP (THEA) score of 230 – 259 ,   or
- Elementary Algebra part of ACCUPLACER (EA-A) score of 82 or higher, or
- SAT Math score of 400 – 479

This course may not be used to satisfy any general university graduation requirements. This course does not count toward a student's hours for graduation or in the determination of hours attempted or earned.

Objective:

The major objective of this course is to prepare students for the College Algebra course with ability to apply the basic mathematical tools leading to the solution of real-world problems. The mathematical topics introduced and discussed in this course are: factors of polynomials, simplification of rational expressions, radical expressions, introduction to the complex numbers, quadratic equations, rational equations, radical equations and elementary inequalities.

Student Learning Outcomes: After completing this course students will be able to

1. Apply basic algebraic operations to rational algebraic expressions consisting of polynomials or complex fractions, and transform these algebraic expressions into equivalent algebraic expressions.
2. Factor polynomial expressions using a variety of methods.
3. Solve linear, polynomial, and rational equations using appropriate solution techniques, including the Zero Product Property, completing the square, and the use of the quadratic formula.
4. Solve application problems involving polynomial equations and equations containing rational expressions.
5. Solve simple and compound inequalities, and application problems involving inequalities.
6. Apply the laws of radicals to perform addition, subtraction, multiplication, and division of expressions involving radicals and to solve equations containing one or two radicals.
7. Perform basic algebraic operations involving complex numbers.

Class Policies

Attendance: Any student who accumulates the equivalent of **three (3) hours** of absences, **excused or unexcused**, may be withdrawn from the class with the grade "**DR**"

Make-Up Exam: No make-up exam of any kind will be administered unless the absence meets the policy set in HOP Section 5.2.4 on "Class Attendance". It is your responsibility to inform the instructor of any excused absences before the exam or as soon as possible and to schedule a make-up exam. A make-up exam will be administered no later than 48 hours of the missed exam. A grade of zero will be given for a missed exam. This policy will be adhered to strictly.

Classroom Behavior Students are expected to conduct themselves in a polite and respectable fashion at all times and are expected to treat their fellow students and the instructor with courtesy and respect. Also, the use of any electronic device in classroom without permission of instructor will not be allowed. This includes cell phones, laptops, IPods, and IPads.

The ways to get help outside your classroom:

1. Visit your instructor during his/her office hours or make appointment for such visits.
2. Get free Math tutoring from Learning Assistance Center (LAC) building in Room 114 phone # 665-2532
3. Get free Math tutoring from Math Lab I & II in Math building (MAGC) in room 3.510 & MAGC in room 3.530
4. Go to library and view the videos and a complete solutions manual. The videos and complete solutions manual cannot be checked out for home use.
5. The use of new software is called Enhanced WebAssign which contains an online version of the text book. Student may access this software through http://webassign.net for online homework assignments.

Course Grade:

Homework: [insert % optional]
Quizzes: [Insert % optional]
Tests: [insert]
Departmental comprehensive Final Exam (25)%

Grading Scheme:

Course Grade (%)	Course Letter Grade
90-100	RA
80-89	RB
70-79	RC
60-69	RD
Below 60	RF

TSI Information:

In response to a new state law, The University Texas- Pan American has made significant changes to our educational development plan. What was once call TASP is now the Texas Success Initiative (TSI). If you are TSI-affected, you must plan to enroll in, attend, and complete the course or face severe consequences, such as withdrawal from the university. If you have any question regarding this policy, contact the Advisement Center, located in the University Center (UC) room 215 or call 956-381-2529.

Disabilities:

Students with disabilities are encouraged to contact the Disability Services office for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Texas-Pan American to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Disability Services office (DS), University Center #322, 665-7005, disabilityservices@utpa.edu. The Director of the Disabilities is: Christine Stuart-Carruthers, DS-Director, Ph: 665-5375, carruthers@utpa.edu."

BroncMail:

"The new university policy requires all electronic communication between the University and the students be conducted through the official University supplied systems; namely BroncMail for email or Blackboard for course specific correspondence. Therefore, please use your UTPA assigned BroncMail or Blackboard account for all future correspondence with the UTPA faculty and staff."

Tentative Time Table	Section	Topic	HW Page	Suggested Problems
		CHAPTER 7: Factoring, Solving Equations, and Problem Solving 297		
Week 1	**7.1**	Factoring by Using the Distributive Property page #298	302-304	
	7.2	Factoring the Difference of Two Squares 304	308-309	
	7.3	Factoring Trinomials of the Form $x^2 + bx + c$ 310	315-317	
	7.4	Factoring Trinomial of the Form $ax^2 + bx + c$ 317	321-323	

COURSE: **MATH 1340 (or Math1440)**, **College Algebra**

TEXTBOOK: **_College Algebra_**, 5th Edition, Dugopolski, M.
                              [ISBN 13: 978-0-321-64559-3]

OR

Alternate to Textbook: **_MyMathLab,_** **http://www.coursecompass.com**

PREREQUISITE: *A grade of C or better in MATH 1334 or a math ACT score of 20 or better or a math THEA score of 260 or better, or a score of 70 or better on the Accuplacer College Level Math Test.*

INSTRUCTOR: **E-Mail:**

OFFICE: **TELEPHONE:**

OFFICE HOURS

COURSE SCOPE:

Chapters	Sections	Test
1	3-6	
3	4	1
1	7	
2	1-3	2
2	4, 5	
3	1	3
3	2,3,5,6	4
4	1-4	5
5	2, 3	
6	1	
	Homework	**6**

- **Final Exam   (Comprehensive)   7**

DISABILITIES:
Students with disabilities are encouraged to contact the Disability Services Office for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Texas-Pan American to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Disability Services office (DS), University Center # **UC 108** (on the first floor), **665-7005**, disabilityservices@utpa.edu. The Director of Disabilities is **Christine Stuart-Carruthers, 665-5375**, carruthers@utpa.edu.

ATTENDANCE:
  A roll sheet will be passed around each class day and each student present will initial it. A student is not allowed to initial for another student. Absences will be imposed on both parties. Absences can also be imposed on students who are habitually tardy to class. All absences, excused or unexcused, will be documented. **The instructor has the prerogative to drop any student who has more than 4 unexcused absences.**

HOMEWORK:
Online computer homework (**http://www.coursecompass.com**) will be assigned for each section covered in the textbook. Homework assignments are to be completed as assigned. Each student should be prepared to ask and/or answer questions concerning the homework exercises. The homework grade will count as $\frac{1}{7}$ *(Instructor Choice)* of the course grade.

TESTING:
Quizzes will be given prior to each of the seven scheduled tests. Quizzes will comprise 15% of each test grade and the scheduled test will comprise 90% of the test grade. Also, there will be recycle test problems (problems that 50% or more of the class did poorly) given after each major exam. The final exam will be a comprehensive final exam.

TOOLS REQUIRED:
An inexpensive **scientific** calculator is required. (It is permissible to use a graphing calculator, but not required.) Each student will use their own personal calculator while taking tests. **You will not be allowed to share calculators with your neighbor NOR use cell phone calculators.**

DROPPING THE COURSE:
A student can drop this course with a **DROP PASS** anytime **prior** to **_____**, **provided** the student has an acceptable class attendance record and has also, taken every quiz & test up to date. Otherwise, the student will receive either a drop pass or a drop fail depending on the grade the student has at the time of dropping the course.

COURSE GRADE:

  Each of the seven test grades will count as $\frac{1}{7}$ *(Instructor Choice)* of the course grade. Students have the option to replace a low score from tests 1 through 5 with their final exam score, provided the student has an acceptable class attendance record and has taken all exams. If a student misses a scheduled test, he/she must contact the instructor **before** the next scheduled class meeting. There is no guarantee that a make-up test will be given. If the student has an **excused** **absence** the missed test grade will be replaced with the final exam grade. If the absence is unexcused the test grade recorded will be a zero.
 Grade Distribution
  A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 0-59

Core Curriculum Student Learning Outcomes (Texas Coordinating Board Exemplary Learning Objectives)

1. To apply arithmetic, algebraic, geometric, higher-order thinking, and statistical methods to modeling and solving real-world situations.

2. To represent and evaluate basic mathematical information verbally, numerically, graphically, and symbolically.
3. To expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments.
4. To use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
5. To interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them.
6. To recognize the limitations of mathematical and statistical models.
7. To develop the view that mathematics is an evolving discipline, interrelated with human culture, and understand its connections to other disciplines.

College Algebra Student Learning Objectives

1. Be able to demonstrate knowledge and understanding of the mathematical characterization of relationships (functions, equations, and inequalities included) and how mathematics provides structures for critical thinking, disciplined inquiry and the formulation of discoveries and applications to real-world situations.
2. Be able to demonstrate knowledge and understanding of the mathematical concept of function, the essentials regarding their domains, correspondences, and ranges; and how to perform addition, subtraction multiplication, division, composition, and inversion of functions which are basic operations in the algebra of functions.
3. Be able to demonstrate facility with multiple representations of algebraic relationships by coordinating the use of formulas, graphs, tables, verbal descriptions, and appropriate technology, noting interconnections and providing translations between these different modes of representation.
4. Be able to demonstrate knowledge and understanding of relationships expressed through systems of equations and inequalities, and an assortment of functions - linear and nonlinear, absolute value, greatest integer, exponential, logarithmic, polynomial, and rational - which are essential for mathematical modeling and problem solving in real-world situations,
5. Be able to demonstrate an understanding of complex numbers and how they extend the real number system to provide roots for certain types of equations, and that they constitute the highest order characterization for the concept of number with the system of complex numbers including within it all of the other subsystems of numbers - real, rational, integers, whole numbers and natural numbers.
6. Be able to demonstrate an understanding of the strengths and limitations of mathematically expressed models (e.g., simple and compound interest, law of gravity).
7. Be able to demonstrate an appreciation of the contributions of mathematics to exceptional accomplishments in the sciences and humanities.

College Algebra Project
Course Outline

1.3   Equations and graphs in two variables
1.4   Linear Equations in two variables
1.5   Scatter Diagrams and Curve Fitting (optional)
1.6   Quadratic Equations
3.4   Miscellaneous Equations
Quiz 1
Test 1

1.7   Linear and Absolute Value Inequalities
2.1   Functions
2.2   Graphs of Relations and Functions
2.3   Families of Functions, Transformations, and Symmetry
Quiz 2
Test 2

2.4   Operations with Functions
2.5   Inverse Functions
3.1   Quadratic Functions and Inequalities
Quiz 3
Test 3

3.2   Zeros of Polynomial Functions
3.3   The Theory of Equations
3.5   Graphs of Polynomial Functions
3.6   Graphs of Rational Functions
Quiz 4
Test 4

4.1   Exponential Functions and Their Applications
4.2   Logarithmic Functions and Their Applications
4.3   Rules of Logarithms
4.4   More Equations and Applications
Quiz 5
Test 5

5.2   Systems of Linear Equations in Three Variables
5.3   System of Nonlinear Equations
6.1   Solving Linear Systems Using Matrices (optional)

Test 7 (Comprehensive Final Exam)

Appendix B. STC Generic Syllabi

Appendix B.1: MATH 0085

South Texas College
Division of Developmental Studies
Department of Mathematics
Math 0085: Introductory Algebra Syllabus
http://develop.southtexascollege.edu/devmath/

Instructor Information

Instructor: _____

Office Location: Building: ____ Room #: _____ Campus: _____

Telephone #: _____

FAX #: _____ FAX Location: _____

E-mail Address: _____

Office Hours: (Days & Times) _____

Course Information

Course Name: Introductory Algebra

Course #/Section: Math 0085 Section #: _____ Term:_____

Classroom Location: Building: _____ Room #: _____ Campus:_____

Class Days/Times: _____

1. **Catalog Course Description:** This course is a study of introductory algebra. Topics include simplifying algebraic expressions, solutions of linear equations and inequalities in one variable, applying rules of exponents, calculations involving scientific notation, operations on polynomials, factorization of polynomials, solving polynomial equations by factoring, systems of equations, graphs of linear equations in two variables, and application problems involving linear models. The focus of lab instruction is content reinforcement.

2. **Course Goals:**
- Introduce students to the language of algebra.
- Prepare students for Intermediate Algebra.

3. **Course Learning Outcomes: Upon successful completion, the student will be able to:**
- Demonstrate the ability to transform algebraic expressions using algebraic properties and the order of operations to evaluate, simplify, expand, factor, and otherwise produce equivalent expressions;
- Demonstrate knowledge and understanding of rational numbers, algebraic properties, combining like terms, and combining several algebraic properties to solve linear equations;
- Recognize and use algebra to model and solve application problems (e.g., geometric, mixture, and motions) identify unknown variables, set up an algebraic model, solve, and interpret solution(s). This includes the use and solution of 2 x 2 systems of linear equations by the substitution method or by the elimination-by-addition method;
- Demonstrate their ability to graph linear equations, determine slopes of non vertical lines, graphically solve 2 x 2 systems of linear equations, and solve linear relationship application problems using the Cartesian coordinate system;
- Demonstrate knowledge and understanding of exponents (positive, negative and zero). Comprehend and apply the concept of polynomials and its operations such as addition, subtraction, multiplication and division; and
- Identify and factor polynomial expressions using various methods, and apply factoring techniques with Zero Product Property to solve equation.

4. Departmental Policies:

- Prerequisite: Math 0080 with a "C" or better or placement based on assessment scores.

Course	THEA	EA ACCUPLACER	ASSET	COMPASS
MATH 0085 Introductory Algebra	190 - 209	18 – 49 and 65+ on AR ACCUPLACER	35 - 37	36 – 38

- Attendance is required. According to STC policy, a student who does not meet the College Readiness Standard for Texas Success Initiatives (TSI) must attend a developmental class in order to earn credit in any academic course(s) in which s/he may be enrolled. **Any student who accumulates the equivalent of four (4) hours of absences, excused or unexcused, in a developmental class will be referred to a Student Success Specialist. Any student who accumulates the equivalent of eight (8) hours of absences, excused or unexcused, may be withdrawn from the course by the instructor. A student may also be withdrawn from the course for non-participation in the class. Note:** Any student who is taking Math 85 as his/her only developmental course, and is withdrawn from the course, will be withdrawn from all college courses.
- Three (3) tardy will be counted as 1 absence. A tardy is defined as entering class after the starting time OR leaving class early. **Time lost from a quiz or a test due to tardiness will not be made up.**

- The last day to withdraw with a "W" is _____. A student who has not withdrawn by the above date and has stopped attending class will receive an "F" for the course.
- If you are repeating this course, please make an appointment with your instructor.
- Instructors and students will communicate via e-mail at least once during the semester.
- Math 85 students will take the Accuplacer toward the end of the semester free of charge.

5. "P" Grade Policy

Students who pass the math section of the THEA (230 or higher) or ACCUPLACER (EA 63 or higher) **during** the term qualify for a grade of "P" in this course. A grade of "P" will count as a successful completion of the course, but it will not be included in calculating the Current Semester GPA. Students are encouraged to complete the course to be better prepared for college-level math courses. **Note: It is important that you provide your instructor with a "P" Grade form signed by a Student Success Specialist before you can be assigned a grade of "P".**

6. Technology:

Hawkes Learning Systems is a **required** technology-based interactive software that allows students to access practice problems, supplemental instructional material such as videos and/or tutorials, and online assignments with immediate feedback. Students may access Hawkes Learning Systems at any STC computer lab for text-specific instructional, study, and practice materials.

7. Grading Criteria:

- Homework/Quizzes/Projects/Tests (as determined by instructor)   75%

- Departmental Comprehensive Final Exam (**Mandatory**)   25%

- Course grade is determined as follows:
  - A   90% - 100%
  - B   80% - 89%
  - C   70% - 79%
  - D   60% - 69%
  - F   below 60%

8. Evaluation Methods:

See individual instructor's **Syllabus Addendum** for additional information regarding grading policy and feedback expectations for assignments, quizzes, and/or exams.

9. Textbook & Resources:

Required for all Developmental Math Courses:
1. Text: D. Franklin Wright. Prealgebra and Introductory Algebra
2. Software: Hawkes Learning Systems
3. USB Flash drive
4. Scantron Form No. 882-E

Recommended:
1. Any standard 4-function calculator.
2. A binder/notebook/folder.

Note: The required items may be purchased on campus or at most area bookstores. This is a **one-time purchase** for the entire developmental math sequence. The Hawkes Learning Systems software account does not expire.

Secretaries Commission on Achieving Necessary Skills (SCANS) Information:

Departmental Foundation Skills:

A. Basic Skills

Reading: Read, understand and interpret written mathematical information.

Writing: Write a report on a topic related to mathematics.

Arithmetic and Mathematical Operations: Use arithmetic in computations and solving problems involving real-life situations.

Speaking: Participate in class discussions, solve problems and explain the solution   process to the teacher and the peers.

7. Grading Criteria:

- Homework/Quizzes/Projects/Tests (as determined by instructor)   75%

- Departmental Comprehensive Final Exam (**Mandatory**)   25%

- Course grade is determined as follows:
  - A   90% - 100%
  - B   80% - 89%
  - C   70% - 79%
  - D   60% - 69%
  - F   below 60%

8. Evaluation Methods:

See individual instructor's **Syllabus Addendum** for additional information regarding grading policy and feedback expectations for assignments, quizzes, and/or exams.

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Departmental Foundation Skills:

A. Basic Skills

Reading: Read, understand and interpret written mathematical information.

Writing: Write a report on a topic related to mathematics.

Arithmetic and Mathematical Operations: Use arithmetic in computations and solving problems involving real-life situations.

Speaking: Participate in class discussions, solve problems and explain the solution process to the teacher and the peers.

B. **Thinking Skills:**
    Creative Thinking: Demonstrate creative thinking by solving problems.
    Decision Making: Decide which method to use to solve a particular equation given a set of different methods from which to choose.
    Problem Solving: Generate a plan to solve application problems; set pieces of information into an equation. Apply previously learned skills with newly learned skills to solve new problems.
    Visualize: Organize and process symbols, pictures and graphs to solve mathematical problems.
    Reasoning: Recognize if the solution to a problem is reasonable or not.

C. **Personal Qualities:**
    Responsibility: Students will exert a high level of effort.
    Self-Esteem: Students will maintain a positive view of themselves.
    Sociability: Students will work in groups.
    Self-Management: Students will assess themselves.
    Integrity and Honesty: Students will be honest and trustworthy.

Developmental Studies Policy Statement:

- Failure to remain in at least one Developmental Studies course for students who have not met the passing standard on an approved assessment instrument in reading, writing, and/or mathematics may result in the student's withdrawal from ALL college courses.
- All developmental courses including the College Success course will be included in the Semester Grade Point Average (GPA) for all students at STC.
- Students in Developmental Studies will be limited to a maximum of 13 credit hours of course work per semester and 7 credit hours per summer session.
- Students taking 12 or more credit hours per semester who have not met the passing standard on an approved assessment instrument will be required to take two or more developmental courses every semester if they are deficient in more than one academic skill (reading, writing, and mathematics).

Student Code of Conduct

All students are expected to behave in a manner consistent with the College's function as an educational institution. As stated in the student catalog, any student that engages in disruptive activities which interfere with classroom instruction will be warned on the first occurrence, and may be withdrawn if the disruptive activities continue.

ADA Students with Disabilities Statement:

Reasonable accommodations may be made that allow disabled students to be successful at STC. Accommodations may be provided for those students who submit the appropriate documentation by an outside/independent professional evaluator or agency. Students may volunteer to inform the Instructor about their disability and associated classroom limitations, if applicable.

Each campus has a Counseling/Disability Support Office contact person and a student can contact them at the following phone numbers.

    Pecan Campus (McAllen) .... *(956) 872-2513*
    Mid-Valley Campus (Weslaco) .... *(956) 872-6618*
    Starr County Campus (Rio Grande City) .... *(956) 488-5804*
    Nursing Allied Health Center (McAllen) .... *(956) 683-3137*
    Technology Center (McAllen) .... *(956) 992-6125*

South Texas College
Division of Developmental Studies
Department of Mathematics
Math 0090: Intermediate Algebra Syllabus
http://develop.southtexascollege.edu/devmath/

Instructor Information

Instructor: _____
Office Location: Building: ____ Room #: _____ Campus: _____
Telephone #:   _____
FAX #:   _____ FAX Location: _____
E-mail Address: _____
Office Hours: (Days & Times) _____

Course Information

Course Name: Intermediate Algebra
Course #/Section: Math 0090 Section #: _____   Term:_____
Classroom Location: Building: _____ Room #: _____ Campus:_____
Class Days/Times: _____

1. **Catalog Course Description:** This course is a study of intermediate algebra and geometry. Topics include factorization of polynomials, operations on rational expressions, solving rational equations, radical expressions, rational exponents, quadratic equations and inequalities and their graphs, application problems involving quadratic models, functional notation, and application problems on geometry. The focus of lab instruction is content reinforcement.

2. **Course Goals**:
- Help students become TSI complete and/or College Ready.
- Prepare students for College Mathematics/College Algebra.

3. **Course Learning Outcomes: Upon successful completion, the student will be able to:**
- Apply basic algebraic operations to rational algebraic expressions consisting of polynomials or complex fractions, and transform these algebraic expression into equivalent algebraic expressions;
- Factor a polynomial expression using a variety of methods;
- Solve linear, polynomial, and rational equations using appropriate solution techniques, including the Zero Product Property, completing the square, and the use of the quadratic formula;
- Solve application problems involving polynomial equations and equations involving rational expressions;
- Solve simple and compound inequalities, and application problems involving inequalities; and
- Apply the laws of radicals to perform addition, subtraction, multiplication, and division of expressions involving radicals and to solve simple equations containing one or two radical.

4. Departmental Policies:

- Prerequisite: Math 0085 with a "C" or better or placement based on assessment scores.

Course	THEA	EA ACCUPLACER	ASSET	COMPASS
MATH 0090 Intermediate Algebra	210 - 229	50 – 62 & 65+ on AR ACCUPLACER	38 - 40	39 – 41

- Attendance is required. According to STC policy, a student who does not meet the College Readiness Standard for Texas Success Initiatives (TSI) must attend a developmental class in order to earn credit in any academic course(s) in which s/he may be enrolled. **Any student who accumulates the equivalent of four (4) hours of absences, excused or unexcused, in a developmental class will be referred to a Student Success Specialist. Any student who accumulates the equivalent of eight (8) hours of absences, excused or unexcused, may be withdrawn from the course by the instructor. A student may also be withdrawn from the course for non-participation in the class. Note:** Any student who is taking Math 90 as his/her only developmental course, and is withdrawn from the course, will be withdrawn from all college courses.

- Three (3) tardy will be counted as 1 absence. A tardy is defined as entering class after the starting time OR leaving class early. **Time lost from a quiz or a test due to tardiness will not be made up.**

- The last day to withdraw with a "W" is _____. A student who has not withdrawn by the above date and has stopped attending class will receive an "F" for the course.
- If you are repeating this course, please make an appointment with your instructor.
- Instructors and students will communicate via e-mail at least once during the semester.
- Math 90 students will take the Accuplacer toward the end of the semester free of charge.

5. "P" Grade Policy

Students who pass the math section of the THEA (230 or higher) or ACCUPLACER (EA 63 or higher) **during** the term qualify for a grade of "P" in this course. A grade of "P" will count as a successful completion of the course, but it will not be included in calculating the Current Semester GPA. Students are encouraged to complete the course to be better prepared for college-level math courses. **Note: It is important that you provide your instructor with a "P" Grade form signed by a Student Success Specialist before you can be assigned a grade of "P".**

6. Technology:

Hawkes Learning Systems is a **required** technology-based interactive software that allows students to access practice problems, supplemental instructional material such as videos and/or tutorials, and online assignments with immediate feedback. Students may access Hawkes Learning Systems at any STC computer lab for text-specific instructional, study, and practice materials.

7. Grading Criteria:

- Homework/Quizzes/Projects/Tests (as determined by instructor)   75%

- Departmental Comprehensive Final Exam (**Mandatory**)   25%

- Course grade is determined as follows:
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	below 60%

8. Evaluation Methods:

See individual instructor's **Syllabus Addendum** for additional information regarding grading policy and feedback expectations for assignments, quizzes, and/or exams.

9. Textbook & Resources:

Required for all Developmental Math Courses:
1. Text: D. Franklin Wright. Prealgebra and Introductory Algebra
2. Software: Hawkes Learning Systems
3. USB Flash drive
4. Scantron Form No. 882-E

Recommended:
1. Any standard 4-function calculator.
2. A binder/notebook/folder.

Note: The required items may be purchased on campus or at most area bookstores. This is a **one-time purchase** for the entire developmental math sequence. The Hawkes Learning Systems software account does not expire.

Secretaries Commission on Achieving Necessary Skills (SCANS) Information:

Departmental Foundation Skills:

A. Basic Skills

Reading: Read, understand and interpret written mathematical information.
Writing: Write a report on a topic related to mathematics.
Arithmetic and Mathematical Operations: Use arithmetic in computations and solving problems involving real-life situations.
Speaking: Participate in class discussions, solve problems and explain the solution   process to the teacher and the peers.

B. Thinking Skills:

Creative Thinking: Demonstrate creative thinking by solving problems.

Decision Making: Decide which method to use to solve a particular equation given a set of different methods from which to choose.

Problem Solving: Generate a plan to solve application problems; set pieces of information into an equation. Apply previously learned skills and newly learned skills to solve new problems.

Visualize: Organize and process symbols, pictures and graphs to solve mathematical problems.

Reasoning: Recognize if the solution to a problem is reasonable or not.

C. Personal Qualities:

Responsibility: Students will exert a high level of effort.

Self-Esteem: Students will maintain a positive view of themselves.

Sociability: Students will work in groups.

Self-Management: Students will assess themselves.

Integrity and Honesty: Students will be honest and trustworthy.

Developmental Studies Policy Statement:

- Failure to remain in at least one Developmental Studies course for students who have not met the passing standard on an approved assessment instrument in reading, writing, and/or mathematics may result in the student's withdrawal from ALL college courses.
- All developmental courses including the College Success course will be included in the Semester Grade Point Average (GPA) for all students at STC.
- Students in Developmental Studies will be limited to a maximum of 13 credit hours of course work per semester and 7 credit hours per summer session.
- Students taking 12 or more credit hours per semester who have not met the passing standard on an approved assessment instrument will be required to take two or more developmental courses every semester if they are deficient in more than one academic skill (reading, writing, and mathematics).

Student Code of Conduct

All students are expected to behave in a manner consistent with the College's function as an educational institution. As stated in the student catalog, any student that engages in disruptive activities which interfere with classroom instruction will be warned on the first occurrence, and may be withdrawn if the disruptive activities continue.

ADA Students with Disabilities Statement:

Reasonable accommodations may be made that allow disabled students to be successful at STC. Accommodations may be provided for those students who submit the appropriate documentation by an outside/independent professional evaluator or agency. Students may volunteer to inform the Instructor about their disability and associated classroom limitations, if applicable.

Each campus has a Counseling/Disability Support Office contact person and a student can contact them at the following phone numbers.

Pecan Campus (McAllen) .... *(956) 872-2513*
Mid-Valley Campus (Weslaco) .... *(956) 872-6618*
Starr County Campus (Rio Grande City) .... *(956) 488-5804*
Nursing Allied Health Center (McAllen) .... *(956) 683-3137*
Technology Center (McAllen) .... *(956) 992-6125*

South Texas College
Department of Mathematics
College Algebra Syllabus   MATH 1414

Instructor's Information:

Instructor Name:

Office Location:

Telephone #:

Office Hours:

Course Information:

Course Name: College Algebra

Course #:   MATH 1414

Course Description:
This course is the study of quadratic, polynomial, rational, logarithmic and exponential functions. It includes systems of equations, sequence and series, matrices, determinants, and applications.

Prerequisite: *A passing score of 63+ on the Elementary Algebra ACCUPLACER exam or 230+ on the math portion of the THEA test; "C" or better on MATH 0090; or an ASSET score of 41+ or a COMPASS score of 42+; or exemption via SAT (500+) or ACT (19+) scores.*

Learning Outcomes:

1. Demonstrate knowledge and understanding of the mathematical characterization of relationships (functions, equations, and inequalities included) and how mathematics provides structures for critical thinking, disciplined inquiry and the formulation of discoveries and applications to real-world situations.

2. Demonstrate knowledge and understanding of the mathematical concept of function, the essentials regarding their domains, correspondences, and ranges; and how to perform the basic operations in the algebra of functions: addition, subtraction multiplication, division, composition, and inversion of functions.

3. Demonstrate facility with multiple representations of algebraic relationships by coordinating the use of formulas, graphs, tables, verbal descriptions, and appropriate

technology, noting interconnections and providing translations between these different modes of representation.

4. Demonstrate knowledge and understanding of relationships expressed through systems of linear equations, inequalities, matrices, and an assortment of functions – linear and nonlinear, absolute value, greatest integer, exponential, logarithmic, polynomial, and rational – and demonstrate their use in mathematical modeling and problem solving in real-world situations.

5. Demonstrate an understanding of complex numbers and how they extend the established characterization of the concept of *numbers* including the other subsets: real, rational, integers, whole numbers and natural numbers.

6. Demonstrate an understanding of the strengths and limitations of mathematically expressed models (e.g., simple and compound interest, law of gravity).

The objective of the Mathematics Component of the Core Curriculum is to develop a quantitatively literate college graduate. Every college graduate should be able to apply basic mathematical tools in the solution of real-life problems.

Intellectual Competencies:

A. Critical and Analytical Thinking:

> Demonstrate creative thinking, decision making, problems solving, visualization, and reasoning skills.
> Understand the problem and choose the right method(s) to solve for the unknown(s).
> Applying mathematics to real-life problems, and checking the logic of the solution.
> Recognize problems and devise and implement plan of action.
> Organize and relate symbols, pictures, graphs, objects, and other information.

B. READING:
> Analyze and interpret handouts, the textbook, and/or visual aids used during the semester.

C. WRITING:
> Develop, organize, draft, revise, and edit a research paper on math-related topic. List of the possible topics is attached.

D. SPEAKING: Demonstrate effective oral communication techniques by engaging in discussions and presenting solutions answering questions from he students.

E. LISTENING: Analyze and interpret various forms of spoken communication.

F. **Technology:** Demonstrate knowledge of using the math computer software that accompanies the math textbook. Students will utilize scientific calculators and mathematics software to solve variety of problems.

Evaluation:

Evaluation method for exemplary educational objectives:
Data will be collected from common set of problems.
Grading Criteria

5 tests @ ....100 points each (**Lowest score will be dropped**) Term Project.... 50 points Final Exam ......150 points (**Mandatory**) **Total Points....600 points**	A = > 90% .... (540-600) B = 80%-89%..... (480-539) C = 70%-79%..... (420-479) D = 60%-69%..... (360-419) F = < 60% .... (<360)
• All exams are in-class closed-book exams -- No Make-ups! • Exam results will be given within one week from the exam day • Use of cell phones, cell phone calculators, iPod, or electronics is not allowed during exams or class time. • Check with the instructor for the kind of Calculator allowed	

Required Textbook & Resources:

College Algebra – 10th Edition by Lial/Hornsby/Schneider

Tutors at the Math Learning Centers will be available to help students with their homework. Math computer software with guided examples and real-life application accompany the textbook. Students are asked to come to the board to present problems, discuss different techniques, and answer questions from instructor and other students. . The term project will address all the Exemplary Educational Objectives for the math core component. A list of the projects' topics is attached.

Possible topics for term paper and Guidelines:

Break-even Analysis (Business Application)	Combinations of n elements taken r at a time
Depreciation (Various Methods)	Conic Sections
Maximum Profit (Modeling)	Continuous Compounding of Interest
Half-life of Radioactive Isotopes	Cramer's Rule
Magnitude of Earthquakes	Population Growth (Human, Animal, etc.)
Radioactive Decay	
Annuities	Rene Descartes
Mortgage Payments	Determinants
Path of a Projectile	The number e
Binomial Theorem	Carl Friedrich Gauss
	Gauss-Jordan Elimination method

Geometric Sequences and Series	Vertical, Horizontal and Slant
Horizontal Asymptotes	Asymptotes
Hyperbolas	Fibonacci Sequence
Wilhelm Jordan	John Napier
Johannes Kepler	Blaise Pascal
Linear Programming	Niels Henrik Abel
Pascal's Triangle	Other Topical or Biographical Papers as
Sigma Notation	approved by the Instructor.
Systems of Inequalities	

Biographical Paper should contain at least three bibliographical references. Biographical Presentations should focus upon the mathematical contributions of the individual along with other human-interest information about the individual.

Topical Papers should contain a general mathematical description of the topic. Demonstrations about the topic are advisable. The presenter should understand the topic thoroughly enough to respond to questions posed by students or the instructor.

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Alternative Format Statement: This document is available in an alternative format upon request by calling 956-872-8327.

ADA Statement: *Individuals with disabilities requiring assistance or access to receive services should contact disABILITY Support Services at (956) 872-2173.*

Required Sections and Recommended Exercises:

Math 1414 - College Algebra		
Prerequisite: *A passing score of 230+ on the math portion of the THEA exam, 63+ on the EA ACCUPLACER, passing the College Algebra Placement Exam, or passing MATH 0090 with "C" or better.*		
Chapter 1	**DESCRIPTION**	**Recommended Problems**
1.3	Complex Numbers	1-34, Odd 35-95
1.4	Quadratic Equations	Odd 1-65, 73-78
1.5	Applications and modeling with Quad. Eqns	1-6, Odd 15 - 33
1.6	Other Types of Equations and Applications	Odd 1-49, Odd 69-85
1.7	Inequalities	Odd 1-43
1.8	Absolute Value Equations and Inequalities	1-34, Odd 35-91
TEST - 1		
Chapter 2	**DESCRIPTION**	**Recommended Problems**
2.1	Rectangular Coordinates and Graphs	Odd 1-39
2.2	Circles	Odd 1-45
2.3	Functions	Odd 1-59
2.4	Linear Functions	1-10, Odd 11-57, 59-64
2.5	Equations of Lines	1-30, odd 33-49, 57,59,61
2.6	Graphs of Basic Functions	1-16, odd 17-53
2.7	Graphing Techniques	1-30, odd 31-59, 61-66
2.8	Function operations and composition	1-25, Odd 27-89
TEST - 2		
Chapter 3	**DESCRIPTION**	**Recommended Problems**
3.1	Quadratic Functions and Models	1-20, Odd 21-55
3.2	Synthetic Division	1-10, Odd 11-45
3.3	Zero of Polynomial Functions	1-25, Odd 27-87
3.4	Polynomials Graphs, App.& Models	1-12, Odd 17-59, Odd 97 – 107
3.5	Rational Functions	1-16, Odd 17-33, Odd 37-67, 111, 113
TEST -3		
Chapter 4	**DESCRIPTION**	**Recommended Problems**
4.1	Inverse Functions	Odd 1-25, 26-45, Odd 55-85
4.2	Exponential Functions	1-18, Odd 25-83
4.3	Logarithmic Functions	1-30, Odd 31-50, 51-56
4.4	Evaluating Logarithms	1-26, Odd 29-57
4.5	Exponential and Logarithmic Equations	Odd 1-55, Odd 59-65, Odd 71-83
4.6	Applications, Growth, and Decay	1-15, Odd 17-45
TEST - 4		
Chapter 5	**DESCRIPTION**	**Recommended Problems**
5.1	Systems of Linear Equations	7-35, Odd 47-57, 69-71, 77-80
5.2	Matrix Solution of Linear Equations	1-20, Odd 27-45, Odd 53-63
5.3	Determinant Solutions of Linear Equations	1-28, Odd 35-55, odd 75-85
5.7	Properties of Matrices	1-35, Odd 37-59, 75-78, Odd 81-85
5.8	Matrix inverses	1-53 odd
7.1(*)	Sequences and Series	1-12, Odd 23-69, 87, 89
7.2(*)	Arithmetic Sequences and Series	Odd 1-61, Odd 69-75
7.3(*)	Geometric Sequences and Series	Odd 1-33, 58-60, Odd 61-69
TEST -5		
Departmental Comprehensive Final Exam		
	Sections with (*) are optional and covered if time permits	