



Alief ISD in partnership with HCC

TRANSITION TO COLLEGE MATH COURSE A (1 semester)

based on

HCC Math 0308: College Preparatory A for Mathematics II

Target Students: Students who have not demonstrated college readiness as defined by HB5.

A high priority are those who either did not take Algebra II or those who made an overall grade of less than 75 in Algebra II.

Pre-requisites: Student has credit for Algebra I and Geometry and has met the passing standard on the Algebra I EOC.

Course Description as defined by Houston Community College (HCC):

Fundamentals of Mathematics II: Topics include real numbers, basic geometry, polynomials, factoring, linear equations, inequalities, quadratic equations and rational expressions. Calculator use is not allowed in this course, including the departmental final examination. An overall grade for the semester of 75 or higher indicates that the student has met the HCC criteria for Math 0308, and the student is prepared for HCC Math 0312 Intermediate Algebra without further assessment or remediation.

Course Student Learning Outcomes & Learning Objectives as defined by HCC:

STUDENT LEARNING OUTCOMES	LEARNING OBJECTIVES	High School Equivalent
WITHOUT THE USE OF A CALCULATOR, THE STUDENT WILL:		
1. Identify and apply properties of real numbers, and perform accurate arithmetic operations with numbers in various formats and number systems.	1.1 Add, subtract, multiply and divide real numbers and manipulate certain expressions.	Algebra I & Geometry
	1.2 Solve problems using scientific notation.	
	1.3 Find square roots of perfect square numbers.	
2. Demonstrate the ability to manipulate/simplify algebraic expressions, & classify/solve algebraic equations with appropriate techniques.	2.1 Solve problems using equations and inequalities.	Algebra I & Algebra II
	2.2 Factor polynomials using the techniques of the greatest common factor, grouping, difference of two squares and special trinomials.	
	2.3 Multiply, divide and simplify rational expressions	
3. Demonstrate the use of elementary graphing techniques.	3.1 Plot ordered pairs and graph linear equations.	Algebra I & Algebra II
4. Apply basic geometric theorems and formulas to rectangles, squares, parallelograms, triangles, trapezoids, circles, and angles.	4.1 Find the perimeter and area of rectangles, squares, parallelograms, triangles, trapezoids and circles; volume and surface area, relations between angle measures, congruent and similar triangles, and properties of parallelograms.	Geometry

Course Goal as defined by HCC:

- This course is intended for students who require state mandated remediation.
- In particular, this course is intended to prepare students for the study of Intermediate Algebra (Math 0312), a course that builds the foundation for the study of College Algebra (Math 1314).
- Math 0308 is also the foundation course for all Work Force Certificate programs.

Additional Public Ed Goals:

- Students are prepared to enter post-secondary work-force certificate programs with no additional remediation in mathematics.
- Students experience a combination of class and student-directed lab time to simulate the HCC course structure.
- Students manage their own learning through effective self-scheduling, self-monitoring, and effective peer study groups.

Course Resources approved by HCC:

Textbook: Lial, Hornsby, McGinnis, 2012. *Beginning & Intermediate Algebra*, Pearson Education. ISBN 13:978-0-321-71542-5

Course Online Resource: *Math XL* (Pearson Education) is a powerful online homework, tutorial, and assessment system that accompanies Pearson Education's textbooks in mathematics. Since 2001, MathXL, along with MyMathLab and MyStatLab, have helped over 5 million students succeed at more than 1,850 colleges and universities.

Final Exam & Grading Policy approved by HCC:

Students will take the HCC Departmental Final Exam.

- If a student scores at least 60 on the HCC Final Exam, then the student's overall grade for the semester will not be less than 75 on the high school transcript.
- If a student scores less than the required 60 on the HCC Final Exam, then the student's overall grade for the semester will not exceed 74 on the high school transcript.
- An overall grade for the semester of 75 or higher indicates that the student has met the HCC criteria for Math 0308, and the student is prepared for HCC Math 0312 Intermediate Algebra without further assessment or remediation.

Course A



Alief ISD in partnership with HCC

TRANSITION TO COLLEGE MATH COURSE B (1 semester)

based on

HCC Math 0312: College Preparatory B for Algebra

Target Students: Students who have not demonstrated college readiness as defined by HB5. A high priority are those who either did not take Algebra II or those who made an overall grade of less than 75 in Algebra II.

Pre-requisites: Satisfactory performance in Algebra I, Geometry, the Algebra I EOC, and Transition to College Math Course A (HCC Math 0308). Students may show mastery of Transition to College Math Course A (HCC Math 0308) through Credit by Exam.

Course Description as defined by Houston Community College (HCC):

Intermediate Algebra: Topics include factoring techniques, radicals, algebraic fractions, complex numbers, graphing linear equations and inequalities, quadratic equations, systems of equations, graphing quadratic equations and an introduction to functions. Emphasis is placed on algebraic techniques, in order to successfully complete Math 1314 College Algebra. Calculator use is *not* allowed in this course, including the departmental final examination. An overall grade for the semester of 75 or higher indicates that the student has met the HCC criteria for Math 0312, and the student is prepared for HCC Math 1314 College Algebra without further assessment or remediation.

Course Student Learning Outcomes & Learning Objectives as defined by HCC:

STUDENT LEARNING OUTCOMES	LEARNING OBJECTIVES	High School Equivalent
WITHOUT THE USE OF A CALCULATOR, THE STUDENT WILL:		
1. Solve algebraic equations and inequalities involving rational expressions, radicals, quadratics, or linear expressions.	1.1 Add, subtract, multiply and divide polynomials.	Algebra I, Geometry, Algebra II, & Pre-Calculus
	1.2 Factor polynomials.	
	1.3 Add, subtract, multiply and divide rational expressions.	
	1.4 Simplify complex fractions.	
	1.5 Solving equations involving rational expressions.	
	1.6 Simplify equations involving rational exponents and simplify radicals.	
	1.7 Add, subtract, multiply, divide expressions involving radicals and solve radical equations	
	1.8 Add, subtract, multiply and divide complex numbers	
	1.9 Solve quadratic equations by factoring, completing the square, quadratic formula and square root property.	
	1.10 Solve systems of linear equations in two variables.	
2. Examine and interpret the linear and quadratic graphs of equations and inequalities.	2.1 Graph linear equations & linear inequalities in two variables.	Algebra I & Algebra II
	2.2 Find the slope of a line & write its equation.	
	2.3 Graph quadratic functions and inequalities.	
3. Solve application problems.	3.1 Solve word problems.	all courses
4. Use and interpret function notation in both algebraic and graphical contexts.	4.1 Recognize functional notation and evaluate functions.	Algebra I & Algebra II

Course Goal as defined by HCC:

- This is the final course in the developmental mathematics sequence and its purpose is to prepare students for College Algebra.

Additional Public Ed Goals:

- Students are prepared to enter post-secondary college programs with no additional remediation in mathematics.
- Students experience a combination of class and student-directed lab time to simulate the HCC course structure.
- Students manage their own learning through effective self-scheduling, self-monitoring, and effective peer study groups.

Course Resources approved by HCC:

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- If a student scores less than the required 60 on the Final Exam, then the student's overall grade for the semester will not exceed 74 on the high school transcript.
- An overall grade for the semester of 75 or higher indicates that the student has met the HCC criteria for Math 0312, and the student is prepared for HCC Math 1314 College Algebra without further assessment or remediation.

Course B