Addendum II: Frameworks- College Preparatory Integrated Mathematics Course I

ESC Region 19 in partnership with EPCC and UTEP
Transition to College Math Course I – 1 Semester

Target Students: This course is recommended for 12th grade students whose performance on measures outlined in TEC §28.014 and the memorandum of understanding (MOU) with the partnering institution(s), indicates that the student is not ready to perform entry-level college coursework in mathematics. This course is designed to advance college and career readiness.

Recommended Pre-requisites: Satisfactory completion of Algebra I, Geometry, and Algebra II. Completion of the Algebra I EOC exam.

Course Description as defined by El Paso Community College and The University of Texas at El Paso:
This course addresses a variety of mathematical topics needed to prepare students for success in college-level mathematics. In addition, the course supports students in developing skills and strategies needed to succeed in college. Mathematics topics include: real numbers, basic geometry, polynomials, factoring, linear equations, inequalities, rational expressions, and mathematical models with applications. Successful completion of this course (Course I and Course II), as defined by the memorandum of understanding (MOU) with the partnering institution(s), grants the student an exemption to TSI requirements for mathematics at the partnering institution(s). **An overall grade for the semester of 75 or higher indicates that the student has met the college readiness standards established by the School Districts of Region 19, El Paso Community College (EPCC), and The University of Texas at El Paso (UTEP) indicating that the student is prepared for Integrated Mathematics Course II.**

Course Student Learning Outcomes & Learning Objectives:

STUDENT LEARNING OUTCOMES	LEARNING OBJECTIVES	High School Equivalent
THE STUDENT WILL:		Algebra I & Geometry
1. Identify and apply properties of real numbers and perform accurate arithmetic operations with numbers in various formats and number systems. Apply basic geometric theorems and formulas.	1.1 Add, subtract, multiply and divide, using order of operations, real numbers and manipulate certain expressions including exponential operations.	
	1.2 Find square roots of perfect square numbers.	
	1.3 Solve problems involving calculations with percentages and interpret the results.	
	1.4 Use estimation skills, and know why, and when to estimate results.	
	1.5 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.	

2. Demonstrate the ability to graph and solve liner equations and inequalities.	2.1 Solve problems using equations and inequalities, absolute value equalities and inequalities.	Algebra I & Algebra II
	2.2 Solving linear equations.	
	2.3 Plot ordered pairs on a rectangular coordinate system and graph linear equations.	
	2.4 Graph linear equations & linear inequalities in two variables.	
	2.5 Finding intercepts graphically and algebraically.	
	2.6 Find the slope of a line & write its equation.	Algebra I & Algebra II
3. Solve systems of equations using a variety of techniques.	3.1 Solve systems of linear equations in two variables by graphing.	
	3.2 Solve systems of linear equations in two variables by substitution.	
	3.3 Solve systems of linear equations in two variables by addition.	
4. Understand operations of polynomial functions and solve problems using scientific notation.	4.1 Exponents	Algebra I & Algebra II
	4.2 Operations of polynomial functions to include addition, subtraction, multiplication, and division.	
	4.3 Solving problems using scientific notation.	
5. Understand, interpret, and make decisions based on financial information commonly presented to consumers.	5.1 Demonstrate understanding of common types of consumer debt and explain how different factors affect the amount that the consumer pays.	Mathematical Models with Applications; Algebra I & Algebra II
	5.2 Demonstrate understanding of compound interest and how it relates to saving money.	
	5.3 Use quantitative information to explore the impact of policies or behaviors on a population.	
	5.4 Factor polynomials using the techniques of the greatest common factor and grouping.	

NOTE: An individual student learning outcome assessment is suggested at the end of each unit. A comprehensive Final Exam is required.

Course Goal as defined by El Paso Community College and The University of Texas at El Paso:

- The first course of two is intended for students who require state mandated remediation.
- In particular, this course is intended to prepare students for Integrated Mathematics Course II.

Additional Public Ed Goals:

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

Course Resources approved by El Paso Community College and The University of Texas at El Paso:

Current Textbook: Martin-Gay, Elayn, 2017. Beginning & Intermediate Algebra, Pearson Education 6th Edition. ISBN: 978-0134-19309-0

Previous Textbook: Martin-Gay, Elayn, 2012. Beginning & Intermediate Algebra, Pearson Education 5th Edition. ISBN: 978-0321-78512-1

Online Technology Resources: Any software and/or online resource that enhances student learning. i.e. Edgenuity, MyMathLab, etc.

Instructor Course Resources:

Education Service Center Region 19 College and Career Readiness, 2014. *HB5 Mathematics College Prep Course*,

Education Service Center- Region 19, https://www.esc19.net/Page/197. Web. 15 Jan 2016. Course materials such as suggested calendar and workbook may be found at the Region 19 website.

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

TASA on iTunes U engages experienced teachers, content specialists, and higher education faculty to create a collection of digital resources that are aligned with the Texas College and Career Readiness Standards. Districts can rely on this vetted compilation of interactive, online content to develop–in consultation with their higher education partner–their own college preparatory courses in responding to this HB 5 requirement. TASA's HB 5 college preparatory course resource collections can be accessed by searching for Texas Association of School Administrators in the iTunes U catalog or by visiting www.itunes.com/tasa.

Kahn Academy, 2017. *Math by Subject,* Kahn Academy. https://www.khanacademy.org/. Web. 02 February 2017.

Texas College and Career Readiness Support Center, 2013. *College Readiness Assignment field Testing (CRAfT)*, Educational Service Center 13. http://txccrsc.org. Web. 16 December 2013.

University of North Texas Academic Vertical Alignment Training and Renewal, 2011. *UNT AVATAR*, University of North Texas. http://www.untavatar.org. Web. 06 June 2015.

UT Austin Dana Center, 2017. *The Charles A. Dana Center,* University of Texas at Austin. http://www.utdanacenter.org/. Web. 02 February 2017.

Final Exam & Grading Policy approved by El Paso Community College and The University of Texas at El Paso:

The students' **overall** grade will be calculated using the following:

- 50% individual assessments to include a comprehensive Final Exam.
- 50% other such as daily grades, homework, etc.
- An overall grade for the semester of 75 or higher indicates that the student has met the criteria, and the student is prepared for Integrated Mathematics Course II without further assessment or remediation.

Addendum III: Frameworks- College Preparatory Integrated Mathematics Course II

ESC Region 19 in partnership with EPCC and UTEP
Transition to College Math Course II – 2 Semester

Target Students: This course is recommended for 12th grade students whose performance on measures outlined in TEC §28.014 and the memorandum of understanding (MOU) with the partnering institution(s), indicates that the student is not ready to perform entry-level college coursework in mathematics. This course is designed to advance college and career readiness.

Recommended Pre-requisites: Satisfactory completion of Algebra I, Geometry, and Algebra II. Completion of the Algebra I EOC exam.

Course Description as defined by El Paso Community College and The University of Texas at El Paso:
This course addresses a variety of mathematical topics needed to prepare students for success in college-level mathematics. In addition, the course supports students in developing skills and strategies needed to succeed in college. Mathematics topics include: factoring techniques, radicals, algebraic fractions, complex numbers, graphing linear equations and inequalities, quadratic equations, systems of equations, graphing quadratic equations, an introduction to functions, and probability. Successful completion of this course (Course I and Course II), as defined by the memorandum of understanding (MOU) with the partnering institution(s), grants the student an exemption to TSI requirements for mathematics at the partnering institution(s). **An overall grade for the semester of 75 or higher indicates that the student has met the college readiness standards established by the School Districts of Region 19, El Paso Community College (EPCC), and The University of Texas at El Paso (UTEP) indicating that the student is prepared for college-level mathematics.**

Course Student Learning Outcomes & Learning Objectives:

STUDENT LEARNING OUTCOMES	LEARNING OBJECTIVES	High School Equivalent
THE STUDENT WILL:		
1. Use and interpret function notation in both algebraic and graphical contexts.	1.1 Recognize functional notation and evaluate functions.	Algebra I & Algebra II
2. Solve algebraic equations and inequalities involving rational expressions, radicals, quadratics, or linear expressions.	2.1 Factoring polynomials using the greatest common factor, grouping, trinomials of the form $x^2 + bx + c$ and $ax^2 + bx + c$, difference of two squares, and special trinomials.	Algebra I, Geometry, Algebra II, & Pre-Calculus
	2.2 Solve quadratic equations by factoring.	
	2.3 Add, subtract, multiply and divide rational expressions.	
	2.4 Simplify complex fractions.	
	2.5 Solving equations involving rational expressions.	
	2.6 Simplify equations involving rational exponents and simplify radicals.	

	2.7 Add, subtract, multiply, divide expressions involving radicals and solve radical equations. 2.8 Add, subtract, multiply and divide complex numbers. 2.9 Solve quadratic equations by completing the square, quadratic formula, and square root property. 2.10 Graph quadratic functions and inequalities.	
3. Examine, solve, and interpret the quadratic graphs of equations and inequalities.	3.1 Add, subtract, multiply, and divide complex numbers. 3.2 Solve quadratic equations by completing the square, quadratic formula, and square root property. 3.3 Graph quadratic functions and inequalities.	Algebra I & Algebra II
4. Solve application problems.	4.1 Applications of functions.	all courses
5. Use counting principles and probability to quantify uncertainty in a variety of real-world contexts.	5.1 Build a finite sample space and interpret statements about probability (including terms like unlikely, rare, and impossible). 5.2 Compute and interpret the probability of an event and its complement. 5.3 Computer and interpret the probability of compound and conditional events. 5.4 Interpret two-way tables.	Advanced Quantitative Reasoning & Statistics

NOTE: An individual student learning outcome assessment is suggested at the end of each unit. A comprehensive Final Exam is required and needs to be part of the student's overall grade.

Course Goal as defined by El Paso Community College and The University of Texas at El Paso:

- This is second course of two intended the final course in the developmental mathematics sequence and its purpose is to prepare students for college-level mathematics.
- Its purpose is to prepare students for college-level mathematics.

Additional Public Ed Goals:

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

Course Resources approved by El Paso Community College and The University of Texas at El Paso:

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Online Technology Resources: Any software and/or online resource that enhances student learning. i.e. Edgenuity, MyMathLab, etc.

Instructor Course Resources:
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UT Austin Dana Center, 2017. *The Charles A. Dana Center,* University of Texas at Austin. http://www.utdanacenter.org/. Web. 02 February 2017.

Final Exam & Grading Policy approved by El Paso Community College and The University of Texas at El Paso:

The students' overall grade will be calculated using the following:

- 50% individual assessments to include a comprehensive Final Exam.
- 50% other such as daily grades, homework, etc.
- An overall grade for the semester of 75 is required for course credit. Students who receive course credit will receive a 12-month TSI waiver in reading and writing at EPCC and UTEP.