

# New Course Form

**For help filling out the form press F1 or look at the bottom of the screen. For additional instructions, see Course Form Instructions.**

**Type of Action** | **New Course – Course not previously offered.**

1. Catalog Prefix and Number\*: **MAT 010**

2. Course Title: Transitional Algebra

**Pilot Course Information:**

Are you requesting pilot status only at this time? Yes  No

Implementation Date? **Summer 2014**

Are you requesting pilot status in addition to regular approval process? Yes  No

Implementation date? **Fall or Spring?** Year?

Has this course been previously approved as pilot status Yes  No

3. Justification for requested action.

This course is designed as an alternative accelerated pathway to college level mathematics for incoming freshmen who place into developmental mathematics. This 3 credit hour course would provide students an opportunity to master the Common Core Standard Competencies for college level mathematics enabling them to meet the prerequisite standards for technical math classes, general education liberal arts mathematics classes, or college algebra math classes as needed for each individual student. Each student's starting point would be individualized based on placement tests with the instructor facilitating each student's progress through the competencies needed for his/her academic goals. This individualized approach allows students an opportunity to accelerate through the Common Core Standard Competencies requirements for college level mathematics and thus reducing the number of developmental math hours required. A student would earn a passing grade by demonstrating mastery of at least 12 course competencies, the equivalent of a currently existing developmental mathematics course. The course MAT010 itself would not be listed as a prerequisite for any course, but rather students would be given Special Credit by Exam for the appropriate existing developmental math course determined by the competencies completed to allow advisors and Peoplesoft to recognize when college-level prerequisites have been met.

Currently, modified emporium models allowing individualized instruction are being used in developmental mathematics at BCTC and throughout KCTCS. Such models require students to enroll in separate specific courses (i.e., MAT055, MAT065, MAT085) based on their placement and progress. The creation of MAT010, a single course that makes all the objectives available, would allow those same students to enroll in just one course and seamlessly progress through the competencies needed for their individual goals, potentially reducing their developmental requirements to only 3 credit hours.

4. Submitting Entity: Curriculum Committee:

Or College: **Bluegrass CTC**

5. Person(s) Primarily Responsible for Proposal (**Complete item only if course is not part of a curriculum package. Verify that members are still current and active prior to submission.**):

<u>Name</u>	<u>Teaching Area</u>	<u>College</u>
<b>Kausha Miller</b>	<b>Mathematics</b>	<b>Bluegrass CTC</b>

<b>Ruth Simms</b>	<b>Mathematics</b>	<b>Bluegrass CTC</b>
<b>Jeff Herrin</b>	<b>Mathematics</b>	<b>Bluegrass CTC</b>
<b>DeAnna Pelfrey</b>	<b>Mathematics</b>	<b>Bluegrass CTC</b>

**Involvement of Others (Identify Individuals):**

6. System Office Staff:
7. Others:
8. Is this course offered at other colleges?  Yes  No  
 If yes, have they been involved in the development of this course?  Yes  No  N/A
9. Is this course duplicative or similar to other courses offered by KCTCS?  Yes  No  
 If yes, Justification:
10. Credit / Contact Hours: 10a. Semester Credit Hours: Minimum **3** Maximum **3**  
 10b. Semester Contact Hours: **45** If lab, etc., ratio of contact hours to credit hours. (See contact/credit hour ratio chart)
11. Grading Basis:  Graded- (Includes grades: A,B,C,D,E calculates in the GPA)  P/NP (Includes grades: P,F not included in the GPA)  ABC/NC (Includes grades: A,B,C,D,MP,F,P not included in the GPA)
12. Repeat for additional credit:  Yes  No

(Repeat for additional credit. Check “yes” if the student may repeat the course and receive additional credit. This usually applies to special topics courses that can be repeated for additional credit if a different topic is taken. Indicate maximum amount of credit a student may earn and the total number of completions. For example, for a 1-4 credit course that may be repeated with different topics up to a maximum of 6 credits, enter 6 total credits and 6 completions.)

The number of completions should be based on the minimum number of credits Example: **Course credits 1-4; Number of total credits in course – 6**; then the total number of completions should be 6. (Total credits in course (6 credits) divided by the minimum number of course credits (1 credit) = 6 repeats.)

**PeopleSoft will prevent students from enrolling when either the number of total credits is met or the number of total completions is met.**

**If yes, complete the following:**

Total credits allowed:

Total completions:

13. Open Entry – Open Exit:  Yes  No

14. Course Attribute: Each course will be assigned one of the following course attributes:

DEVL (Transitional)  TECH (Technical)  OTHR (Other)

*Since new courses must be approved prior to gaining general education status, cultural studies status, or digital literacy status, these attributes will be assigned administratively upon status approval.*

15a. Components (Check all components that require scheduling. For each component that is checked, enter the credit hours and contact hours for each component that is checked.):

Component	Credit Hours	Contact Hours	Component	Credit Hours	Contact Hours
<input checked="" type="checkbox"/> Lecture	3	45	<input type="checkbox"/> Practicum		
<input type="checkbox"/> Laboratory			<input type="checkbox"/> Co-Op		
<input type="checkbox"/> Clinical			<input type="checkbox"/> Discussion		

**OR**

15b. Integrated Components (If components are integrated, and only one component (lecture or lab) needs scheduling, rather than both lecture and lab, complete this section.)

Lecture/ Lab	Lecture Credit	Lecture Contact	Lab Credit	Lab Contact

16. Requisites:

Pre-requisite  Yes  No If yes, list: **KCTCS Placement Exam**

Co-requisite  Yes  No If yes, list:

Pre-requisite  Yes  No If yes, list:  
 or  
 Co-requisite

17. Implementation Term (Course scheduled to begin, ex. Fall 2014): **Summer 2014 (Pilot)**

18. Proposed Course Description (Course description as it will appear in the catalog. Each statement must begin with a verb.):

Provides individualized and accelerated progression through Common Core Standards to prepare students for entry-level college mathematics. Note: Completion of this course may or may not meet actual prerequisites for all entry-level college mathematics courses.

**Course Proposal Rationale:**

19. Will this course be a part of an approved curriculum/curricula?  Yes  No

If yes, which curriculum/curricula?  
 (Submit a New Curriculum or Revision Form)

**Course Competencies and Delivery:**

20. Proposed Course Competencies/Student Outcomes (*If part of an organized curriculum, how does it relate to program competencies /outcomes? **Begin statement with a capital letter and end with a period.***):

Upon completion of this course, the student can:

Demonstrate proficiency of at least 12 consecutive competencies from the list below:

1. State and use properties of real numbers.
2. Perform arithmetic operations on integers, fractions and decimals.
3. Round whole numbers and decimals to an indicated place value.
4. Evaluate whole number powers of integers, fractions and decimals.
5. Evaluate square roots of perfect squares of integers, fractions and decimals.
6. State and use the order of operations on integers, fractions and decimals.
7. Simplify and evaluate algebraic expressions.
8. Use both the addition and multiplication properties to solve a linear equation in one variable.
9. Solve problems involving ratios and proportions.
10. Solve problems involving percents.
11. Convert among fractions, decimals and percents.
12. Calculate and solve applied problems of the perimeter, circumference, area, volume, and surface area.
13. Solve linear equations in one variable.
14. Solve and graph linear inequalities in one variable.
15. Graph linear equations in two-variables using multiple methods.
16. Determine the slope of a line given two points, its graph, or its equation.
17. Determine an equation of a line given two points or a point and slope.
18. Graph linear inequalities in two-variables.
19. Solve systems of linear equations in two-variables using multiple methods.
20. Use the properties of integer exponents and rational exponents of the form  $1/n$ .
21. Add, subtract, and multiply polynomials with one or more variables.
22. Factor polynomials by finding the greatest common factor and factor simple trinomials.

23. Solve quadratic equations by factoring.
  24. Graph parabolas.
  25. Solve absolute value equations and inequalities.
  26. Write equations of lines, including parallel and perpendicular lines, from given data, verbal descriptions and graphs.
  27. Determine whether a given correspondence or graph represents a function.
  28. Evaluate and determine the domain of functions.
  29. Completely factor polynomial functions including finding the greatest common factor, using grouping, recognizing special products, and factoring general trinomials.
  30. Use the properties of rational exponents and simplify numeric and algebraic expressions containing rational exponents.
  31. Add, subtract, multiply, and divide polynomial functions, rational expressions and radicals.
  32. Solve polynomial, rational and radical equations.
  33. Introduce complex numbers and simplify radicals of both positive and negative real numbers.
  34. Solve quadratic equations with complex solutions using factoring, completing the square, and the quadratic formula.
  35. Graph parabolas by finding the vertex and axis of symmetry and plotting points.
  36. Model and solve applications based on linear, quadratic, and exponential functions.
21. Course Outline (*Two-level outline required. Although courses may have more than two levels, the third level is not necessary.*)
- I. Introduction to Algebra (Competencies 1 – 12)
    - A. Whole Numbers
    - B. Integers
    - C. Fractions
    - D. Decimals
    - E. Order of Operations on Real Numbers
    - F. Algebraic Expressions
    - G. Basic Linear Equations
    - H. Ratio & Proportions
    - I. Basic Percents
    - J. Geometry
  - II. Preparation for Liberal Arts Mathematics (Competencies 13 – 24)
    - A. General Linear Equations in one-variable
    - B. Linear Inequalities in one-variable
    - C. Linear Equations in two-variables
    - D. Linear Inequalities in two-variables
    - E. Rules of Exponents (including  $1/n$ )
    - F. Polynomials
    - G. Basic Factoring
    - H. Quadratic Equations
  - III. Preparation for College Algebra (Competencies 25 – 36)
    - A. Absolute Value Equations and Inequalities
    - B. Linear Equations in two-variables (including parallel & perpendicular)
    - C. Functions
    - D. Polynomial Functions and Equations (including general factoring)
    - E. Rational Functions and Equations
    - F. Radical Functions and Equations (including rational exponents)
    - G. Quadratic Equations with Complex Solutions
    - H. Graphing Quadratic Functions
    - I. Basic Exponential Functions

22. List of experiments/activities (*Courses with components other than lecture. e.g., laboratory, clinical,*

*practicum, etc., must include a **sample** list of experiment topics or activities. Does not have to be all-inclusive.):*

23. Indicate sample suggested classroom resources for course (Should not have publishing date greater than five years.)

**Example:**

Sorrentino, S. A. & Gorek, B. (2010). *Mosby's textbook for long-term care assistant* (6<sup>th</sup> ed.). St. Louis, MO: Elsevier/Mosby-Year Book, Inc. ISBN-10: 0323075835 ISBN-13: 978-0323075831

**SUGGESTED LEARNING RESOURCES FOR THIS COURSE**

Sullivan et. al. (2014) *MyMathLab for Developmental Mathematics* (eText, 1<sup>st</sup> ed). Boston, MA: Pearson Publishing, Inc. ISBN-10: 0321923502 ISBN-13: 9780321923509

24. Provide a rationale for using textbook/references older than five years.

25. May this course be used as an equivalent for other courses? **Yes** **No X**  
If yes, please list.

**Signatures:** Complete and submit a signature page for every proposal.

\*The System Office assigns new course numbers. Contact Sydney Baseheart at [Sydney.baseheart@kctcs.edu](mailto:Sydney.baseheart@kctcs.edu).