

TRCC Course Syllabus MATH*K143**Math for Elementary Education: Algebra and Number Systems****3 Credit Hours Course Number CRN 13239 Room E225****Spring 2015****Instructor: Tracy Burns****Email: tburns@trcc.comnet.edu****Cell Phone: 860-857-0982****Room: E225****Office Hours:**

Tuesdays 4:45-5:15 PM and 8:30-9:00 PM

We can meet in Room E225 before or after class on Tuesdays or schedule an online or phone conversation at other times. Please contact me to request an appointment.

Course Description

MAT*K143 3 CREDIT HOURS MATH FOR ELEMENTARY EDUCATION: ALGEBRA AND NUMBER SYSTEMS *Prerequisite: MAT* K137 or MAT* K137S with a "C" or better or appropriate placement through multiple-measures assessment process.*

This course is designed for students planning to become certified in early childhood, elementary, or middle school level education. Problem solving strategies will be developed and integrated throughout, in accordance with the NCTM Principles and Standards for School Mathematics. Topics include conceptual understanding of the real numbers, including the subsets of whole numbers, integers, rational and irrational numbers, with an emphasis on place value and the associated operations. Topics from numeration systems, number theory, and set theory will be developed as needed, with regular use of manipulatives and technology.

Course Objectives:

Upon completion of this course, students will be able to:

- Use problem solving as an integral part of mathematics
- Understand core mathematics needed as a prospective elementary or middle school teacher in a way that connects mathematical procedures, concepts, and applications
- Understand and apply properties of operations to the set of real numbers
- Understand ratio concepts and use ratio reasoning to solve problems
- Analyze proportional relationships and use them to solve real-world and mathematical problems
- Apply understanding of multiplication and division to divide fractions by fractions
- Compute fluently with multi-digit numbers and find common factors and multiples
- Apply understanding of operations with fractions to add, subtract, multiply, and divide rational numbers
- Know that there are numbers that are not rational and approximate them by rational numbers
- Solve equations with radicals and integer exponents
- Reason quantitatively and use units to solve problems
- Apply understanding of arithmetic to algebraic expressions
- Solve real-life mathematical problems using numerical and algebraic expressions
- Use properties of operations to generate equivalent expressions
- Understand the connections between proportional relationships, lines, and linear equations
- Understand solving equations as a process of reasoning and explain the reasoning
- Reason about and solve one-variable equations and inequalities

- Solve equations and inequalities in one variable
- Analyze and solve linear equations and pairs of simultaneous linear equations
- Represent and solve equations and inequalities graphically
- Interpret and build functions
- Use and integrate technology to model and represent mathematical procedures and concepts

Required Text:

The required text for this course is titled *A Problem Solving Approach to Mathematics for Elementary School Teachers*; 11th Edition by Billstein, Libeskind, and Lott. Published by Pearson. Hard copy and electronic copy of the text includes the MyMathLab student access code for the required software.

Required Software:

MyLabandMastering formerly known as MyMathLab or CourseCompass - all 3 names refer to the same website and software: MyMathLab Course ID: **burns20304**

Calculator:

A TI-84(Plus) or TI-83(Plus) or TI-82 or TI-73 graphing calculator is strongly recommended. You may use the Texas Instrument brand, or any downloadable software for mobile devices, laptops, etc. Two free options are Microsoft Mathematics and Wolfram Alpha.

Tutor Center

The Tutoring and Academic Success Center (TASC) provides free tutoring services to TRCC students. TASC is next to the library on the first floor of C-wing. The phone number is 860-892-5713. You can access TASC’s online chat and discussion (type a question) by going to the “course” TASC which is listed at the bottom of your course list on BLACKBOARD at www.my.commmnet.edu . You can also receive free online tutoring from certified math teachers hired by the publisher Pearson via a virtual chat and white board on MyLabandMastering by clicking on the TUTOR CENTER link available on MyLabandMastering.

Online Resources

<http://my.commmnet.edu> for your grades. You can also sign up for the My Commnet Alert System on this page so you can receive text messages about school closings due to weather, etc. I will be posting everything to Blackboard Learn and you can access My Math Lab directly from Blackboard. Please email me directly tburns@trcc.commmnet.edu . Discussions will happen on Blackboard on the Three Rivers Community College website: <http://www.trcc.commmnet.edu> Khan Academy provides free math videos and exercises: <http://www.khanacademy.org/> . The topics are arranged by grade level math domains. Another multimedia resource is: www.mathtv.com (includes math videos in Spanish and English).

Grades

Final grades for the course will be available to students on May 29, 2015 on the TRCC website: <http://my.commmnet.edu> (this is also called “banner”). Determination of your grade will be based on your overall percentage as follows:

- Tests: 20%
- Chapter Quizzes: 25%
- Homework (Problem Sets): 20%
- Lesson Presentations and Class Participation: 20%
- Reflection Papers: 15%

Grade equivalents: A 93–100, A- 90–93, B+ 87–89, B 83–86, B- 80–82, C+ 77–79, C 73–76, C- 70–72, D+ 67–69, D 63–66. D- 60–62, F below 60, N if the student completed less than 60% of work

Withdrawal Policy

A “drop” or “withdrawal” from the course will be accepted until May 11. Students need to fill out the special withdrawal form available at the registrar’s office. **The Instructor does not need to sign the withdrawal form.** Withdrawals are processed only through the Registrar’s Office; phone number (860) 892-5756. Students who do not withdraw, but stop attending class will be assigned an "F". **If you cannot complete the assignments for a period of time, please contact me so we can try to make arrangements for you to possibly finish the course.**

Academic Integrity

Academic Integrity is essential to a useful education. Failure to act with academic integrity severely limits a person’s ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. Collaboration is encouraged on many assignments. Tutors are available to assist you with this sort of work. I am available to help you in person or online. A full copy of the college’s academic integrity policy is included in the school’s catalog and in the student handbook.

Disabilities Statement

If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible. Please note that accommodations cannot be provided until you provide written authorization from a DSP.

TRCC Disabilities Service Providers Counseling & Advising Office (860) 383-5217 Room A-119	
Matt Liscum (860) 215-9265	<ul style="list-style-type: none"> • Physical Disabilities • Sensory Disabilities • Medical Disabilities • Mental Health Disabilities
Chris Scarborough (860) 215-9289	<ul style="list-style-type: none"> • Learning Disabilities • ADD/ADHD • Autism Spectrum

Cancelations:

Emergency closings are posted on the TRCC website: www.trcc.commnet.edu, recorded on the college phone 860-886-0177, and broadcast on local TV or radio stations. You can also sign up for an automated personal text message from the college by going to www.mycommnet.edu and clicking on “MyCommnetAlert”. Due to weather cancelation, we may need to adjust the class/assignment schedule and add an additional class on May 19, 2015.

**MAT 143 MATH FOR ELEMENTARY EDUCATION: ALGEBRA AND NUMBER
SYSTEMS SPRING 2015 SCHEDULE
INSTRUCTOR: TRACY BURNS**

Class	DATE	ASSIGNMENTS DUE	FOCUS OF CLASS	WEEKLY ASSIGNMENT
1	January 27, 2015	MyMathLab Online Access Code and Graphing Calculator	My Math Lab Chapter 1 Introduction to Problem Solving 1.1-1.2	Problem Set 1.1-1.2
2	February 3, 2015		Chapter 1 Introduction to Problem Solving 1.1-1.2 Chapter 2 Numeration Systems and Sets 2.1	Problem Set 1.1-1.2 Problem Set 2.1 Reflection Paper #1 Assigned: CCSS Standards for Mathematical Practice
3	February 10, 2015	Problem Set 1.1-1.2 Problem Set 2.1	Quiz: Chapters 1 & 2 (only sections 1.1, 1.2, 2.1) Chapter 3 Whole Numbers and Their Operations 3.1-3.2 Lesson: Addition & Subtraction Strategies	Problem Set 3.1-3.2 Reflection Paper #1
4	February 17, 2015	Problem Set 3.1-3.2 Reflection Paper #1 Due: CCSS Standards for Mathematical Practice	Chapter 3 Whole Numbers and Their Operations 3.3-3.5 Lesson: Multiplication & Division Strategies	Problem Set 3.3-3.5 Reflection Paper #2 Assigned: K-8 Common Core State Standards for Mathematics (content)
5	February 24, 2015	Problem Set 3.3-3.5	Quiz: Chapter 3 Chapter 4 Number Theory 4.1-4.3	Problem Set 4.1-4.3 Reflection Paper #2
6	March 3, 2015	Problem Set 4.1-4.3	Quiz: Chapter 4 Chapter 5 Integers 5.1-5.2 Lesson: Operations with Integers	Problem Set 5.1-5.2 Study for Test Reflection Paper #2
7	March 10, 2015	Problem Set 5.1-5.2	Test: Chapters 1-5	Reflection Paper #2

	March 17, 2015	SPRING BREAK CLASSES NOT IN SESSION		
8	March 24, 2015	Reflection Paper #2 Due: K-8 Common Core State Standards for Mathematics (content)	Chapter 6 Rational Numbers and Proportional Reasoning 6.1-6.2	Problem Set 6.1-6.2 Reflection Paper #3 Assigned: Progression of Learning Number and Operations - Fractions
9	March 31, 2015	Problem Set 6.1-6.2	Chapter 6 Rational Numbers and Proportional Reasoning 6.3-6.4 Lesson: Rational Numbers	Problem Set 6.3-6.4 Reflection Paper #3
10	April 7, 2015	Problem Set 6.3-6.4	Quiz: Chapter 6 Chapter 7 Decimals: Rational Numbers and Percent 7.1-7.2	Problem Set 7.1-7.2 Reflection Paper #3
11	April 14, 2015	Problem Set 7.1-7.2	Chapter 7 Decimals: Rational Numbers and Percent 7.3-7.4 Lesson: Irrational Numbers	Problem Set 7.3-7.4 Reflection Paper #3
12	April 21, 2015	Problem Set 7.3-7.4	Quiz: Chapter 7 Chapter 8 Real Numbers and Algebraic Thinking 8.1-8.3	Problem Set 8.1-8.3 Reflection Paper #3
13	April 28, 2015	Problem Set 8.1-8.3 Reflection Paper #3 Due: Progression of Learning Number and Operations - Fractions	Chapter 8 Real Numbers and Algebraic Thinking 8.4-8.5 Lesson: Making Connections with Graphs, Tables, Word Problems, and Equations	Problem Set 8.4-8.5
14	May 5, 2015	Problem Set 8.4-8.5	Quiz: Chapter 8 Praxis Questions Review for Final Exam	Study for Final Exam
15	May 12, 2015		Final Exam Chapters 1-8	
	May 19, 2015	MAKE UP SESSION INSTRUCTOR DISCRETION		
	May 22, 2015	FINAL GRADES DUE		
	May 29, 2015	FINAL GRADES POSTED		