

CASPER COLLEGE COURSE SYLLABUS
MATH 1100-01 Math for Elementary Teachers I

Semester / Year: Fall 2015

Lecture Hours: 3

Lab Hours: 0

Credit Hours: 3

Class Time: 12-12:50pm

Days: MTTh

Room: PS 117

Instructor's Name: Teresa Stricklin

Instructor's Contact Information: Please feel free to stop by anytime during my posted office hours.

If those office hours do not fit your schedule, please email me through Moodle mail to set up an individual appointment. You are also welcome to leave messages for me on my office phone.

Office: PS 342

Office Phone: 307-268-2615

Email: tstricklin@caspercollege.edu

Office Hours: M & W 1:00-2:00

T & Th 9:30-10:30

F 11:00-1:00 (Math Learning Center PS 104)

Course Description: (Casper College Catalog)

This course is required for prospective elementary school teachers. Its purpose is to prepare students to be competent in teaching the major concepts of the real number system with the four arithmetic operations. The course includes a study of problem solving, patterns, the origin of numeration systems, sets, number theory, the properties of whole, integer, rational and real numbers, and algorithms for addition, subtraction, multiplication and division in base 10 and other bases.

Prerequisite: (Must meet ONE of the following)

- "C" or better in Math 0930 or Math 0934
- ACT Math score of at least 23
- COMPASS score in the Algebra domain of 60-100 or College Algebra 0-64(past year)

Co-requisite: Must be taken concurrently with EDEL 1410.

Goal:

The 2001 Conference Board of the Mathematical Sciences recommended that "*Prospective teachers need mathematics course that develop deep understanding of the mathematics they will teach. . . and most of all, [they] need to learn how to learn mathematics.*"

Consequently, the goal of this course is to provide prospective elementary school teachers with a deeper understanding and mastery of the mathematical skills, concepts, processes, theories, and applications of probability, statistics, geometry, and measurement. This foundation will help future teachers to make appropriate "mathematical and pedagogical decisions" pertaining to the teaching of mathematics at the elementary level. The main focus of the course is on content and not pedagogy. We will take a look at some pedagogical issues (teaching strategies) in EDEL 1410.

Course Objectives/Outcomes: Students who successfully complete this course will:

- Demonstrate the meaning of addition, subtraction, multiplication, and division and provide multiple models for operations on whole numbers, integers, and rational numbers.
- Utilize commutativity, associativity, distributivity, and existence of identities and inverses as properties of operations.
- Demonstrate proficiency in and understanding of multi-digit computation using standard and alternative/invented algorithms, mental mathematics, and computational estimation.
- Understand the multiplicative structure of the whole numbers including the Fundamental Theorem of Arithmetic and the relationship between factors, multiples, and prime factorizations.
- Understand and apply divisibility rules.
- Demonstrate knowledge of the historical development of number and number systems and the role of place value.

Casper College General Education Requirement:

- Use quantitative analytical skills to evaluate and process numerical data.

*Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Required Materials:

1. **MyMathLab** access code. Please see <http://www.pearsonmylabandmastering.com/> to register and purchase a code. The course ID is: stricklin58897
2. **Textbook** -*A Problem Solving Approach to Mathematics for Elementary School Teachers 12th Edition* by Billstein, Libeskind, Lott (you can either purchase a hard copy of this or use the electronic version that is included with the MyMathLab code)
3. **Internet access** (computers are available in both the CC library and the Math Learning Center)
4. **Scientific calculator** no graphing calculators will be allowed
5. **Scanner, fax machine or digital camera** that takes legible pictures of written work
6. **A means of recording and submitting videos** through your Casper College YouTube account

Methodology:

My goal as the instructor is to model teaching strategies aligned with the practices of the Common Core. This means there will be a wide variety of learning opportunities including: investigations, discussions, individual and group presentations, math related writing, and unit exams. Because this class is a vital part of you becoming a teacher, participation and conceptual knowledge are essential. You will be expected to OWN everything taught in class and practiced in online learning quizzes well enough to teach it to someone else (whether or not you are present). I anticipate and welcome questions and constructive feedback. Supplemental written work will be assigned regularly as a means to identify, practice and measure your own knowledge for each objective. You will be expected to share/explain your thoughts/work with the class.

Evaluative Criteria: Your grade will be based on your performance (not effort) on the following tasks:

60% Summative Assessments (Written Unit Exams)

Students will be required to complete 3 written exams and 1 comprehensive final exam. All 4 exams are weighted equally of 100 points each and will not be allowed to be retaken. Students must take the exams on the assigned class day unless arrangements have been made at least 2 days PRIOR to the scheduled exam. The exams will be given as follows:

Exam #1: Chapters 1 & 2

Exam #2: Chapters 3 & 5

Exam #3: Chapters 4 & 6

Exam #4: Comprehensive final exam (includes both written and oral component)

25% Formative Assessments (explorations/supplemental written homework)

This category will consist of written and/or videotaped explanations for various explorations. I am not only looking for correct solutions, but more importantly quality explanations of your thinking and insights into each problem solving activity. The “how” and “why” you solved a given problem is most important.

10% Weekly Learning Quizzes

I will assign 1-3 learning quizzes per week through MyMathLab. Each quiz will consist of 5-10 questions over specific outcomes and can be taken as many times as you wish before the scheduled due date of midnight the following Monday. All quiz questions are pooled and randomly chosen so every time you choose to retake a learning quiz, you will be given different questions and in different orders. Only after you have completed each quiz will you be allowed to access the learning aides available in MyMathLab.

5% Participation

Attendance is imperative because so much of what we do involves discussions and teamwork. To earn full credit in this category, you must be in class daily and fully engaged (eliminating all distractions including internet, cell phone, side conversations, etc.). I am looking for quality math interactions between you, other classmates and myself. I will also expect you to present solutions and/or strategies to the class.

Point Scale:

Letter grades will be based upon the traditional grading scale:

A = 100 – 90% B = 89 – 80% C = 79 – 70% D = 69 – 60% F ≤60%

Absent/Late Work Policy: I expect students to be in class daily. Absences will affect the participation portion of your grade. Assignments must be turned in on time regardless if you were in class or not. Late assignments (whether it is 1 minute or 1 week late) will result in a **zero!** College sponsored absences are cleared through the Office of Student Services and assignments must be completed prior to your absence. If you are absent for one week or more due to accident, illness, etc., contact the dean of students and explain your reason. In these cases arrangements will be made for you to make up your work.

Last Day to Withdraw: **Nov. 12, 2015** (No exceptions to this date will be considered per college policy)

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Academic Dean, and lastly the Vice President for Academic Affairs.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly.

Academic Dishonesty - Cheating & Plagiarism: Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately outside of class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Math 1100 Fall 2015
TENTATIVE Schedule

Week	Dates	Topics
1	Aug 24-28	Course Introductions/Class expectations Chapter 1-1: Problem Solving
2	Aug 31-Sept 4	Chapter 1-2 : Inductive/Deductive Reasoning & Patterns
3	Sept. 7-11 {Labor Day}	Chapter 1-3: Logic and Reasoning (Compound Statements & Conditional Statements)
4	Sept 14-18	Chapter 2-2 & 2-3: Sets and Operations with Sets
5	Sept. 21-25	Chapter 2-1: Numeration Systems in Other Bases & Other Cultures (using inductive reasoning) Review: Chapters 1 & 2
6	Sept 28-Oct. 2	Chapters 3 & 5: Addition of Whole #s & Integers (Modeling, Properties, Algorithms) EXAM #1: Chapters 1 & 2
7	Oct. 5-9	Chapters 3 & 5: Subtraction of Whole #s & Integers (Modeling, Properties, Algorithms)
8	Oct. 12-16	Chapters 3 & 5: Multiplication & Division of Whole #s & Integers ((Modeling, Properties, Algorithms)
9	Oct. 19-23 {Fall break}	EXAM #2: Chapters 3 & 5
10	Oct. 26-30	Chapter 4-1: Divisibility Rules Chapter 4-2: Prime and Composite Numbers
11	Nov. 2-6 {Advising Day}	Chapter 4-3: GCD and LCM
12	Nov. 9-13 {12 th -Withdrawal deadline}	Chapter 6-1: Ordering Fractions using various strategies Modeling fractions multiple ways
13	Nov. 16-20	Chapter 6-2: Addition & Subtraction of Rational #s
14	Nov. 23-27 {Thanksgiving Break}	Chapter 6-3: Multiplication and Division of Rational #s
15	Nov. 30-Dec. 4	Chapter 6-3: Multiplication and Division of Rational #s Chapter 6-4: Ratios, Proportions and Proportional Reasoning
16	Dec. 7-Dec. 11	EXAM #3: Chapters 4 & 6 Comprehensive Oral Showcase (Individual Time Slots)
17	Dec. 14-18 Final Exam Week	Exam Date/Time: <i>December 16 1:00-3:00pm</i>