MATHEMATICS FOR ELEMENTARY TEACHERS
MATHEMATICS 135 – SECTIONS 01 and 02
FALL SEMESTER 2013

INSTRUCTOR: Bonnie Spence   Office: MATH 004A
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            Office Hours: MWF 1:10-2 pm, TTH 11:10-12:00 and by appointment

PREREQUISITES: Education majors only; Successful completion of M095 (C or higher) or appropriate score on ALEKS placement exam (Level 4)

TEXT (NEW EDITION): *A Problem Solving Approach to Mathematics for Elementary School Teachers, 11th edition* (Billstein, Libeskind, and Lott) with MyMathLab access.

MATERIALS: Notebook, calculator, pencil, graph paper, textbook and MyMathLab account

COURSE: This course is designed to give prospective K-8 teachers the content background to teach mathematics; to introduce students to mathematical problems and their solution methods.

CONTENT: Topics include problem-solving, sets & logic, functions, whole numbers, integers, rationals, real numbers, number theory, probability & statistics.

LEARNING GOALS: Upon successful completion of this course students should be able
1. To identify and solve problems in elementary mathematics.
2. To model the number systems: natural numbers, integers, rationals and reals.
3. To become familiar with the use of manipulatives to enact arithmetic operations.
4. To apply basic problem-solving strategies to ratio, proportion and percent problems.
5. To use mathematical modeling and basic algebra to approach real world problems.
6. To solve problems using probability and statistics including designing simulations.
7. To communicate mathematics both in oral and written form.

EXPECTATIONS:

Attendance: This course meets 5 days a week. Attendance and participation are important. Homework will often be related to in-class activities. Many of the activities are hands-on and difficult to replicate if you are absent. Use of cell phones/texting during class or failure to participate will result in a loss of points earned. Repetitive late arrival will also result in a deduction. Attendance is based on a 10 point scale and is included as part of your grade. After 3 absences the attendance grade will be reduced 1 point for each additional absence. Extreme situations will be considered on an individual basis.

Homework: Homework will consist of on-line problems, textbook problems, reading, extended class activities, and supplemental handouts.

On-line homework is through MyMathLab. Instructions for setting up your access are included with your textbook purchase. Students receive immediate feedback and are then able to get assistance if needed in a timely manner. All assignments must be completed by the given deadline.

Textbook problems will be selected by the instructor. Students are expected to show work in an organized manner. Grading will be based on the quality of work and use of methods that leads to a solution. All work should be neatly labeled with your first and last name, the section, page number or identifiable assignment title. **Leave space between problems for instructor comments.**

Textbook problems can also be used as a self-assessment for understanding. Answers to selected "A" problems can be found in the back of the student text. If "A" problems are used as part of an assignment, students are expected to check their answers before coming to class.

Reading the textbook is expected. The examples should complement the class lecture notes (not an exact repetition) thus giving you further examples and assistance in understanding a concept. When reading, carefully study examples and make note of any steps or explanations that are not clear. Come in for help or ask at appropriate times in class for further explanation.

Extended Class Activities and Supplemental handouts will be used to complement your learning experience. At the end of an in-class activity you may be asked to finish work at home or given a problem or activity to complete on your own. Students may be asked to present their solutions to the class or turn them in upon return the following day.

Quizzes: A short quiz will be given each week, unless a test coincides. **THERE ARE NO MAKE-UP QUIZZES GIVEN.** Quizzes will consist of material covered in class, on homework, and from the textbook. The lowest two quiz scores will be dropped.

Exams: Exams will be given as indicated on the syllabus schedule. When extenuating circumstances prevent a student from taking an exam at the scheduled time, the student must contact the instructor PRIOR to the time of the exam to announce their absence. Brief and occasional absences are excused only for reasons of illness, injury, family emergency, or a University sponsored activity. Arrangements for a make-up exam must occur within 1 week of the scheduled exam date. Failure to do so will result in a score of 0 for the exam.

Final Exam: The final exam will consist of a test over Chapters 9 & 10 and a set of comprehensive questions on Chapters 1-8.

Essential Skills Test: All students enrolled in M135 will be required to pass an Essential Skills test. The twelve-question exam tests student prerequisite fluency with whole number, fraction, and decimal operations, as well as solving equations for a single variable.

> First exam date: Wednesday, September 4 (given in class)
> Final date to pass: Wednesday, October 16th
> Required score: 90% or higher

A student not passing the exam is required to meet with his or her professor to discuss test results and schedule a retake exam. A student may retake the exam multiple times during the semester until a passing score of 90% or higher is obtained. **A passing score must be reached on or before Wednesday, October 16th**. A student who does not pass the Essential Skills Test will earn at most a D in the course if enrolled for a traditional letter grade or a grade of NC (no credit) if enrolled in a credit/no credit option.

Students may find the following resources helpful in improving their essential skills:
- MyMathLab, Go to "Tools for Success" tab, scroll to Review and view the Basic Math Review Card
  *MyMathLab also has video instruction for related sections in your textbook that you may find helpful.
- Khan Academy practice and video instruction www.khanacademy.org
- IXL Math www.ixl.com
- BuzzMath www.Buzzmath.com

ASSESSMENT: Grading will be a combination of homework, quizzes, and tests along with participation in and completion of class activities.

The grading distribution is as follows:

On-line Homework	10%
Class Activities/ Extended Homework/attendance	20%
Quizzes (*lowest 2 dropped)	15%
Tests and Final Exam	55%
Essential Skills Test	Required to Pass

Grading Scale: A (93-100), A- (92.9-90), B+ (89.9-87), B (86.9-83), B- (82.9-80), C+ (79.9-77), C (76.9-73), C- (72.9-70), *D+ (69.9-67), *D (66.9-63), *D- (62.9-60), *F (Below 60)

*You must earn a C- or better in this course to pass the requirement in the School of Education. You may change to CR/NC up to the last day of class and you will receive credit with a grade of D- or better.; however, if you choose this option the grade cannot be counted towards the School of Education requirement nor the UM graduation requirement.

LATE WORK: Assignments are expected on time. Up to 1 late homework assignment is accepted within 24 hours of class. All other late assignments will not earn credit.

If you are sick on the day of class, you may earn full credit for an assignment if:
- You send it with a classmate
- Fax it to the math department 243-2674 prior to class
- Email it to me at bonnie.spence@umontana.edu before class starts

CELL PHONE POLICY: Cells phones are not to be used at all during class. All phones are to be placed in a backpack or bag, not in the laps of students or on the desks. Your class participation depends on your full attention for the entire class period. If you have a situation that necessitates checking your phone during class (such as a sick child at home) get this approved at the beginning of class.

MATH HELP: It is your responsibility to seek help quickly when not understanding a concept. Math help is available during my office hours and in the Math Center located in the Mansfield Library. The Mathematics Center offers free walk-in assistance to students enrolled in mathematics courses. It is a resource for *assistance in mathematics*, but is *not a one-on-one tutoring center*.

CLASSROOM AND TESTING ACCOMMODATIONS: Please set up an appointment to meet with me to discuss reasonable modifications. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications. For more information, please consult http://www.umt.edu/disability.

STUDENT CONDUCT CODE: All students need to be familiar with the Student Conduct Code. You can find it in the "A to Z Index" on the UM home page. All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

Dates	Topics	Assignments/Exams
8/26-8/30	Ch. 1-1, 1-2 Problem Solving, Patterns and Sequences Read Chapter 1-1, 1-2 thoroughly. Watch assigned videos.	Set up my Math Lab. Begin on-line homework
9/3-9/6 *9/2 holiday	Ch. 2-1, 2-2 Numeration Systems, Bases and Sets	**Thursday Essential Skills Test** **Friday Quiz 1-1, 1-2 and 2-1**
9/9-9/13	Ch. 2-3, 3-1, 3-2 Sets, Whole Number Addition and Subtraction Algorithms	**Friday Quiz 2-2, 2-3**
9/16-9/20	Ch. 3-3, 3-4 Whole Number Multiplication and Division Algorithms Test Review	**Test Chapters 1-3** **No Friday Quiz**
9/23-9/27	Ch. 4-1, 4-2, 4-3 GCF	**Friday Quiz 4-1, 4-2**
9/30-10/4	Ch. 4-3 LCM, Ch 5-1, 5-2 Integer Operations + - x ÷	**Friday Quiz 4-3, 5-1, 5-2**
10/7-10/11	Ch. 6-1, 6-2 Rationals, +, -	**Test Chapters 4 and 5** **No Friday Quiz**
10/14-10/18	Ch. 6-2 (cont'd), 6-3 Rationals x, ÷	**Friday Quiz 6-1, 6-2**

10/21-25	Ch. 6-4 Ratios, Proportions and Proportional Reasoning Ch 7-1, 7-2 Decimals	**Friday Quiz 6-3, 6-4**
10/28-11/1	Ch. 7-3, 7-4 Decimals, Percents, Interest	**Friday Quiz 7-1 to 7-3**
11/4-11/8	Ch. 8-1, 8-2, 8-3 Real Numbers, Variables, Equations	**Test Chapters 6 and 7 No Friday Quiz**
11/12-11/15 *11/11 No School	Ch. 8-4, 8-5 Functions, Equations in Cartesian Coordinate System	**Friday Quiz 8-1 to 8-3**
11/18-11/22	Begin Probability—counting outcomes Ch. 9 Probability, Permutations/Combinations	**Friday Quiz 8-4, 8-5**
11/25-11/26 *11/27-29 No School	Ch. 9 Permutations/Combinations cont'd	**NO QUIZ**
12/2-12/6	Ch. 10-1 to 10-4 Data Display and Measures of Central Tendency	**NO QUIZ** Note: Many of the concepts in Ch. 10 are integrated throughout the course—Use textbook to review these topics
12/9-12/13	FINAL EXAM WEEK S1: Thursday, Dec. 12 8:00-10:00 am S2: Friday, Dec. 13 8:00-10:00 am	**Final Exam: Chapters 9 and 10 plus Cumulative Chapters 1-8**