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## M 234.03: Higher Mathematics for Elementary School Teachers

Ricela Feliciano-Semidei  
*University of Montana, Missoula*

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# Higher Mathematics for Elementary School Teachers

Mathematics 234 Section 03

CRN 73773

**Instructor** Ricela Feliciano-Semidei  
Office: Corbin 369  
Email: ricela.feliciano-semidei@umontana.edu

**Goals** Upon completion of this course, a student will be able to:

1. Apply algebra in many forms (e.g., as a symbolic language, as generalized arithmetic, as a study of functions, relations, and variation) and use algebra to model physical situations and solve problems;
2. Explain proportionality and its invariant properties;
3. Apply number theory concepts and theorems, including greatest common factors, least common divisor, properties of prime and composite numbers, and tests for divisibility;
4. Represent, analyze and interpret data;
5. Simulate random events and describe expected features of random variation;
6. Distinguish between theoretical and experimental probability and describe how to use one or both to determine a probability in a given situation.

**Textbook** Mathematics for Elementary School Teachers with activities, 5th Edition (Sybilla Beckmann)

**Grade** Your letter grade in the course will be determined by the following assessments.

Assessment	Total
<b>Weekly Self-Assessments</b>	30%
<b>Portfolio</b>	30%
<b>Exams (4)</b>	30%
<b>Final exam</b>	10%
	100%

Letter grade scale:

92.5% – 100.0% ⇒ A	79.5% – 82.4% ⇒ B-	61.5% – 64.4% ⇒ D+
89.5% – 92.4% ⇒ A-	74.5% – 79.4% ⇒ C+	57.5% – 61.4% ⇒ D
86.5% – 89.4% ⇒ B+	69.5% – 74.4% ⇒ C	54.5% – 57.4% ⇒ D-
82.5% – 86.4% ⇒ B	64.5% – 69.4% ⇒ C-	0% – 54.4% ⇒ F

You must earn a C- or better in this course to pass the requirement in the School of Education. You may change to Credit/No Credit up the last day of the class. Credit will be awarded to students earning a 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.

**Honesty** 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. All students need to be familiar with the Student Conduct Code available at:  
<http://www.umt.edu/student-affairs/dean-of-students/default.php>.

**Dates** Sept-17: Last day to drop or add the course using Cyberbear. Oct-29: Last day to drop with instructor and advisor signatures (W on transcript). Dec-7: Last day to drop the course with instructor, advisor and dean's signatures (WP or WF on transcript).

**Course End of Section Problems:**

**Activities** Please work in all the odd problems for each scheduled section of the textbook. I will provide a list of selected problems to turn-in weekly for feedback.

Deliverable: Please write detailed solutions for the selected problems for feedback. You should complete all of the assigned problems, but it is not expected that you write neat solutions for each of them. It is encourage to work in groups of two (with a maximum of three per group). However, each student needs to write an individual solution that reflects their own understanding for the homework.

Feedback: I will give brief feedback on the pieces that you turn in. I will also post my solutions for the assigned problems. Keep in mind that your work does not have to match mine, since you could use different approaches to solve these problems.

Grade: **Weekly self-assessment grade.**

**Peer feedback:**

I believe that we are part of a community of learners. As a member of this community it is our responsibility to ask for and provide help.

Deliverable: (1) In-class discussion: Each day there will be in-class activities. Everyone should *ask and answer questions* to a peer. As part of the community, I will also ask and answer questions. (2) Project peer-review: You will provide feedback to your classmates in small groups for each project.

Feedback: Will not be provided by me.

Grade: **Weekly self-assessment grade.**

**Projects:**

There will be four projects in the course due on Exams days.

Deliverable: You will submit each project to Moodle by 3pm on every exam day. I will provide on Moodle a detailed list of expectations for the projects.

Feedback: Around five days before the deadline, you will have a day (in-class) to discuss your project with your peers in small groups, please have your project ready for discussion at least five days before the deadline. Once you submit your project, I will give brief feedback for each of your projects with an expected (so far) grade for the project, this expected grade is a reference for you, but it will not be part of the portfolio grade. You will also receive at least one detailed feedback from me.

Grade: **Portfolio grade.** By December 7, you will choose two of your four projects and submit an improved version of them for grading.

**Exams:** There will be four mid-term exams in the course and a final exam.

Exam 1: Chapter 7. September 19

Exam 2: Chapter 8. October 12

Exam 3: Chapter 9. November 2

Exam 4: Chapter 15 & 16. December 5

Final Exam: Cumulative. December 10 (1:10-3:10 P.M.)

**Moodle** As an online supplement for the class, we will use Moodle [moodle.umont.edu](http://moodle.umont.edu). Class schedule, selected end of section problems, **weekly self-assessments**, etc. will be available on Moodle.

**Equality** The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that you may have a disability adversely affecting you academic performance, and you have not already registered with DSS, please contact DSS in Lommasson 154. I will work with you and DSS to provide an appropriate accommodation.