

**HIGHER MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS**  
MATHEMATICS 234 SECTION 2  
CRN 38576

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WEBPAGE <http://umonline.umt.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.

TEXT Mathematics for Elementary School Teachers, 4th Edition (Sybilla Beckmann)

LETTER GRADE Your letter grade in the course will be determined by assessment of your understanding of predefined learning standards. For each standard, I will write an assessment that will provide me with the ability to assess your understanding on a 4-point scale according to:

| Score | Student demonstrates...                   | Classification     |
|-------|---|--------------------|
| 4     | ...mastery beyond the learning target     | Beyond Proficient  |
| 3     | ...full mastery of the learning target    | Proficient         |
| 2     | ...partial mastery of the learning target | Nearing Proficient |
| 1     | ...minimal mastery of the learning target | Novice             |
| 0     | ...no mastery of the learning target      | Beginner           |

Each mid-semester exam will assess 2 or 3 standards. You will have the opportunity to “challenge” your first assessment results one time during the semester. Each project will assess 1 standard. You will not have the opportunity to challenge any project assessment results. Let  $S$  be your average score over all assessments, then, your letter grade in the course will be determined according to:

$$\begin{aligned} 3.50 < S \leq 4.00 &\Rightarrow A \\ 3.00 < S \leq 3.50 &\Rightarrow B \\ 2.50 < S \leq 3.00 &\Rightarrow C \\ 2.00 < S \leq 2.50 &\Rightarrow D \\ 0 < S \leq 2.00 &\Rightarrow F \end{aligned}$$

± GRADE Your plus/minus grade will be determined by assessment of your effort in the course. This aspect will be measured through the collection of homework assignments. Let  $T$  be the total proportion of homework assignments completely attempted and self-graded, then, your plus-minus grade will be assigned according to:

$$\begin{aligned} 0.90 &\leq T < 1.00 &\Rightarrow &+ \\ 0.80 &\leq T < 0.90 &\Rightarrow & \\ 0 &\leq T < 0.80 &\Rightarrow &- \end{aligned}$$

Please note that there is no “A+” grade given at the University of Montana.

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. The Code is available for review online at the following web address:

[http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php).

ACCOMMODATION The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you have a disability that adversely affecting you academic performance, and you have not already registered with DSS, please contact DSS in Lommassen Center 154 or 406.243.2243. I will work with you and DSS to provide an appropriate accommodation.

POLICIES 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.

DATES February 9th is the last day to drop or add the course using Cyberbear. April 2nd is the last day to drop with instructor and advisor signatures (W appears on transcript). May 4th is the last day to drop the course or change grading option using a late drop form (WP/WF appears on transcript). Acceptable reasons for a late drop are listed in the university catalog and are limited to: accident, illness, family emergency or a change in work schedule. The following examples are not considered sufficient for a late drop: protecting GPA, forgetting to turn in the change slip, losing financial aid, losing eligibility to engage in sports.

## SEMESTER SCHEDULE

| Monday                                   | Wednesday                  | Friday                 |
|--|----------------------------|------------------------|
| Jan 22<br>S7.1                           | Jan 24<br>S7.1             | Jan 26<br>S7.2         |
| Jan 29<br>S7.3                           | Jan 31<br>S7.4             | Feb 2<br>S7.5          |
| Feb 5<br>Project 1                       | Feb 7<br>Review            | Feb 9<br>Exam 1        |
| Feb 12<br>S8.1                           | Feb 14<br>S8.2             | Feb 16<br>S8.3         |
| Feb 19<br>Presidents Day                 | Feb 21<br>S8.4             | Feb 23<br>S8.5         |
| Feb 26<br>S8.6/8.7                       | Feb 28<br>Project 2        | Mar 2<br>Review        |
| Mar 5<br>Exam 2                          | Mar 7<br>S9.1              | Mar 9<br>S9.2          |
| Mar 12<br>S9.3                           | Mar 14<br>S9.4             | Mar 16<br>S9.5         |
| Mar 19<br>S9.6                           | Mar 21<br>S9.7             | Mar 23<br>S9.8         |
| Mar 26<br>Spring Break                   | Mar 28<br>Spring Break     | Mar 30<br>Spring Break |
| Apr 2<br>Project 3                       | Apr 4<br>Review            | Apr 6<br>Exam 3        |
| Apr 9<br>S15.1                           | Apr 11<br>S15.2            | Apr 13<br>S15.3        |
| Apr 16<br>S15.4                          | Apr 18<br>Project 4/Review | Apr 20<br>Exam 4       |
| Apr 23<br>S16.1                          | Apr 25<br>S16.2            | Apr 27<br>S16.3        |
| Apr 30<br>S16.4                          | May 2<br>Review            | May 4<br>Review        |
| Final Exam<br>Monday, May 7, 3:20-5:20PM |                            |                        |

## HOMEWORK ASSIGNMENTS

| Section | Problems for Section | Due Date |
|---------|----------------------|----------|
| 7.1     | 1,2,5,7,9            | 29-Jan   |
| 7.2     | 1,3,5,14,19          | 31-Jan   |
| 7.3     | 1,3,4,6,10           | 2-Feb    |
| 7.4     | 1,3,5,9,12           | 5-Feb    |
| 7.5     | 1,2,4,6,25           | 7-Feb    |
| 8.1     | 2,3,5,6,8            | 16-Feb   |
| 8.2     | 4,5,6,8,9            | 21-Feb   |
| 8.3     | 3,9,10,13,14         | 23-Feb   |
| 8.4     | 2,3,4,5,6            | 26-Feb   |
| 8.5     | 6,9,11,14,22         | 28-Feb   |
| 8.6     | 1,4,10,11,17         | 2-Mar    |
| 8.7     | 1,2                  | 2-Mar    |
| 9.1     | 3,4,6,12,14          | 12-Mar   |
| 9.2     | 4,7,8,11,17          | 14-Mar   |
| 9.3     | 3,5,8,10,15          | 16-Mar   |
| 9.4     | 1,3,5,6,7            | 19-Mar   |
| 9.5     | 2,4,8,14,22          | 21-Mar   |
| 9.6     | 2,5,6,14,19          | 23-Mar   |
| 9.7     | 2,6,9,11,12,21       | 2-Apr    |
| 9.8     | 1,2,4,7,11,14        | 4-Apr    |
| 15.1    | 1,6,7,8,10           | 13-Apr   |
| 15.2    | 1,3,4,5,7            | 16-Apr   |
| 15.3    | 3,6,9,12,13,18,20    | 18-Apr   |
| 15.4    | 1,3,9,10,14          | 20-Apr   |
| 16.1    | 2,3,5,6,8            | 27-Apr   |
| 16.2    | 1,2,4,6,8            | 30-Apr   |
| 16.3    | 4,12,14,16,17        | 2-May    |
| 16.4    | 1,8,13,17,19         | 4-May    |

### Homework Philosophy

I view homework assignments as *formative* assessments. Formative assessments are meant to give students feedback so that adjustments in learning can be made to improve learning outcomes measured in *summative* assessments (i.e. mid-semester and final exams). As such, I expect you to correct your own homework assignments before handing them in for credit. This arrangement gives you immediate feedback on your understanding of course content and the opportunity to correct your misunderstandings and errors in thinking.

### Homework Policies

- Corrected homework for each chapter is due at the start of the class period on the date indicated above. I do not accept late homework for any reason.
- Homework must be submitted on quad ruled loose leaf paper without frayed edges, homework must be done in pencil, and multiple pages must be neatly stapled.
- Homework solution keys will be provided on our class webpage at 8:00AM on the day before the homework is due in class. Use a colored pen to correct your homework and make notes to yourself. Your homework effort will only be counted if every problem has been attempted and corrected.