Welcome to Probability and Linear Mathematics! M115 is really two math courses in one. The first part of the course is an introduction to probability, which provides the foundations for the study of statistics. The second part of the course includes topics describing linear functions and their applications; we will examine phenomena that can be described as linear functions as well as common techniques for solving systems of linear equations.

Placement in M115 is based on your individual mathematics assessment (ALEKS, ACT, COMPASS, or SAT) or completion of either M090 (Introductory Algebra) with a grade of RB- or better or M095 (Intermediate Algebra) with a grade of RC- or better. (The “R” designation indicates that the course is remedial or developmental.) Be certain that you are enrolled in the proper math class at the beginning of the semester. You may not be able to switch into a more appropriate class after the first week. If you have any concerns about your placement see me immediately.

Why do we study this stuff? Because learning math helps us learn how to think. Probability and statistics in particular are core ingredients of many applied subjects. But the larger and more important goal in this, and every math course, is to learn abstract reasoning. This deeper thinking allows us to draw from our mental toolboxes to solve certain types of problems.

This course has been designed for you, the student. Your willing participation is the most important component for you to succeed in this course, and it is something only you can provide.

All of our instructors believe that mutual respect and appreciation are essential to a productive classroom environment. This means that as your instructor, I will respect your efforts and appreciate your contributions; you should do the same for me and for your classmates. The more mutual support we provide, the better the class results as a whole will be. Learning should not be a competition.

You cannot learn math by absorption or wishful thinking; you have to put in the effort in order to be able to learn the material. It may sound trite, but there’s no substitute for doing the work. Another valuable suggestion — get involved! Get the name and contact info for a classmate (or more than one) in case you miss a class. Introduce yourself to me. Don’t hide, be visible!

COURSE CONTENT:
1. Sets and Probabilities
2. Counting Principles; Further Probability Topics
3. Statistics
4. Linear Functions
5. Systems of Linear Equations and Matrices
LEARNING OUTCOMES: Upon successful completion of the course, students will be able to:
1. Master basic concepts of lines, linear systems, matrices and linear programming (graphical method only).
2. Understand basic probability concepts: probability models (Venn diagrams, two-way tables), sample spaces with equally likely outcomes (counting), conditional probability (tree diagrams), Bayes’ theorem, binomial probabilities, probability distributions.
3. Understand the rudiments of statistics: measures of center and spread, the normal distribution and the normal approximation to the binomial distribution.
4. Use the above concepts to solve application problems (this includes learning to precisely formulate a problem, and to interpret solutions).

ATTENDANCE: Attendance is not part of your final grade in M115, but no one can teach you if you are not in class engaged and ready to learn. Turn off your cell phone (and yes, that includes texting). Come to class and come prepared. Do your homework regularly. Don’t fall behind. You cannot expect to succeed in this course if you miss many classes; important information may be shared at any time that may not be posted on MyLabsPlus.

It is impossible to stress strongly enough how important it is for you to be diligent in your study habits. Pay attention and cultivate a positive attitude! No matter how you feel about studying math, personal responsibility and a solid work ethic are great attributes to be able to claim as your own. You are an important part of this class — you can make it lively and interesting or silent and boring. Develop a positive working relationship with your classmates and instructor. If you keep up with the work, the subject makes sense and the challenges are manageable. If you feel threatened by math, practice some of the techniques used to reduce math anxiety; there are links at the end of the syllabus.

University of Montana policy states:
Students who are registered for a course but do not attend the first two class meetings may be required by the instructor to drop the course. This rule allows for early identification of class vacancies to permit other students to add classes. Students not allowed to remain must complete a drop form or drop the course on the internet (http://cyberbear.umt.edu) to avoid receiving a failing grade. Students who know they will be absent should contact the instructor in advance.

Students are expected to attend all class meetings and complete all assignments for courses in which they are enrolled. Instructors may excuse brief and occasional absences for reasons of illness, injury, family emergency, or participation in a University sponsored activity. (University sponsored activities include for example, field trips, ASUM service, music or drama performances, and intercollegiate athletics.) Instructors shall excuse absences for reasons of military service or mandatory public service.

MYLABSPLUS (MLP): MyLabsPlus is an innovative way for you to do homework and take quizzes with immediate feedback; MyLabsPlus also keeps you on task and using your developing math skills. Every section of the M115 text covered in class has a corresponding assignment in MyLabsPlus; homework can be retaken up to four times until the unit closes.

There is a chapter quiz for each of the chapters covered in class as well; each quiz can be taken twice and the highest score is the recorded score. Note that these assignments and chapters are open for specific times and in a specific order. Check the MyLabsPlus calendar frequently and attend class to be sure you are keeping current with your assignments. You must keep up with the progression in order to succeed in this course. The direct link to MyLabsPlus is umt.edu/mylabsplus or access the site through OneStop: http://onestop.umt.edu/.

CALCULATOR: A graphing calculator is required for M115; the Department of Applied Arts and Sciences recommends and uses Texas Instruments models TI-83 or TI-84 (regular or plus editions). Calculators with symbolic manipulation capabilities (e.g. TI-89, TI-92) will not be allowed in testing situations.

TUTORING: Math tutoring is available for all UM students. Check for hours at the ASC on the Missoula College campus (AD 06) and at math@Mansfield on the Mountain Campus: http://www.umt.edu/math/MLC/default.htm.

STUDENTS WITH DISABILITIES: 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 you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in EL154 (mountain campus), telephone number 243-2243. Their website is http://life.umt.edu/dss/.

I will work with you and DSS to provide an appropriate accommodation.
**IN-CLASS TESTS:** Five tests will be given in class. Tests are meant to give you an opportunity to demonstrate what you have learned, and are not intended to intimidate you. Graphing calculators removed from their cases are permitted, but may not be shared with other students during the test. All scratch work must be done directly on the test and returned to me when leaving the classroom.

A single page (8½” x 11”) of notes (both sides) may be used to assist you during tests. When circumstances prevent you from taking a test at the scheduled time, contact me PRIOR to the time of the test to report your absence. Absences are excused only for reasons of illness, injury, family emergency, or a University-sponsored activity. Arrangements for a make-up test must occur within a week of the scheduled exam date. Failure to arrange a make-up test within a week of the scheduled exam date will result in a score of zero for the test. Corrected tests will be returned within one week after the test date. If you have questions regarding the grading of your test, please wait until after class to discuss it.

**FINAL EXAM:** The final exam for this class is comprehensive and is worth 150 points. The exam will be given in class. You may have a page (8½” x 11”) of notes (both sides) to assist you. If you think that you have math anxiety, I suggest that you prepare carefully; there are also links on p. 4 addressing math anxiety that may help you. The University of Montana also offers workshops that you may choose to attend.

**DROPPING AND ADDING COURSES OR CHANGING SECTIONS, GRADING OR CREDIT STATUS:** Students are expected, when selecting and registering for their courses, to make informed choices and to regard those choices as semester long commitments and obligations.

Documented justification is required for dropping courses by petition. Some examples of documented circumstances that may merit approval are:

- Error in registration,
- Accident or illness,
- Family emergency, or
- Other circumstances beyond the student’s control

Reasons that are not satisfactory include:

- Forgetting to turn in a drop slip
- Protecting a student’s grade point average

The opportunity to drop a course for the current term ends on the last day of instruction before scheduled final exams. Dropping a course taken in a previous term or altering grading option or audit status for such a course is not allowed. The only exceptions are for students who have received a grade of NF (never attended).

**INCOMPLETES:** A grade of incomplete will only be considered when all three of the following are true:

1. The student has been in regular attendance and passing up to three weeks before the end of the academic semester.
2. Factors beyond the student’s control make it impossible to complete the course on time.
3. The instructor and the student agree that there is a reasonable probability that the student will be able to make-up the work required to complete the course and specific arrangements are drawn up and signed by both.

A student who receives an incomplete has one calendar year to resolve the incomplete (I) before it automatically reverts to a failing grade (F).

**GRADING POLICIES:** M115 must be completed with a grade of C or better in order to contribute towards satisfying the UM Math Literacy requirement. Auditing M115 or taking it C/NC course will not fulfill the requirement.

The final grade will be computed as follows:

- MyLabsPlus homework: 150 points (30 @ 5 points each)
- MyLabsPlus quizzes: 240 points (6 @ 40 points each)
- Tests: 500 points (5 @ 100 points each)
- Final exam: 150 points
- TOTAL 1040 points

Letter grades correspond to numerical scores according to this plan:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>80-89%</td>
</tr>
<tr>
<td>C</td>
<td>70-79%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
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</tbody>
</table>

**ACADEMIC CONDUCT:** All students are expected to practice academic honesty as defined by the Student Conduct Code, available at [http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf](http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf). Academic misconduct is subject to an academic penalty by the instructor and a disciplinary sanction by the university.
# M115 Spring 2013 Course Outline:

<table>
<thead>
<tr>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 28</td>
<td>Intro to M115</td>
<td>Jan 30</td>
<td>§7.1</td>
<td>Feb 1</td>
<td>§7.2</td>
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<td>Feb 4</td>
<td>§7.3</td>
<td>Feb 6</td>
<td>§7.3</td>
<td>Feb 8</td>
<td>§7.4</td>
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<td>Feb 11</td>
<td>§7.4</td>
<td>Feb 13</td>
<td>§7.5</td>
<td>Feb 15</td>
<td>§7.6</td>
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<td>Feb 18</td>
<td>Presidents' Day Holiday</td>
<td>Feb 20</td>
<td>Review</td>
<td>Feb 22</td>
<td>Test 1 – Chapter 7</td>
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<tr>
<td>Feb 25</td>
<td>§8.1</td>
<td>Feb 27</td>
<td>§8.2</td>
<td>Mar 1</td>
<td>§8.2</td>
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<tr>
<td>Mar 4</td>
<td>§8.3</td>
<td>Mar 6</td>
<td>§8.4</td>
<td>Mar 8</td>
<td>§8.5</td>
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<tr>
<td>Mar 11</td>
<td>Review</td>
<td>Mar 13</td>
<td>Test 2 – Chapter 8</td>
<td>Mar 15</td>
<td>§9.1</td>
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<tr>
<td>Mar 18</td>
<td>§9.2</td>
<td>Mar 20</td>
<td>§9.3</td>
<td>Mar 22</td>
<td>§9.3</td>
</tr>
<tr>
<td>Mar 25</td>
<td>§9.3</td>
<td>Mar 27</td>
<td>Review</td>
<td>Mar 29</td>
<td>Test 3 – Chapter 9</td>
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<tr>
<td>Apr 1</td>
<td>– Apr 5</td>
<td>Spring Break</td>
<td>Apr 8</td>
<td>§1.1</td>
<td>Apr 10</td>
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<td>Apr 15</td>
<td>§2.2</td>
<td>Apr 17</td>
<td>§2.3, 2.4</td>
<td>Apr 19</td>
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<td>Apr 22</td>
<td>Review</td>
<td>Apr 24</td>
<td>Test 4 – Chapters 1 &amp; 2</td>
<td>Apr 26</td>
<td>§3.1</td>
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<td>Apr 29</td>
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<td>May 1</td>
<td>§3.3</td>
<td>May 3</td>
<td>§3.3</td>
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<td>May 6</td>
<td>Review</td>
<td>May 8</td>
<td>Test 5 – Chapter 3</td>
<td>May 10</td>
<td></td>
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</table>

The final exam for this class is scheduled for ___________________________ in this classroom.

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**See the MyLabsPlus calendar to find the opening and closing dates for MyLabsPlus tests and homework.**

Important Dates and Deadlines is found at [http://www.umt.edu/registrar/forms/pdf/ImportantDates201330nv2.pdf](http://www.umt.edu/registrar/forms/pdf/ImportantDates201330nv2.pdf)

Finals Week Schedule available at [http://umt.edu/registrar/students/finalsweek2/Spring.aspx](http://umt.edu/registrar/students/finalsweek2/Spring.aspx)

Academic Support Center (Missoula College): AD06, phone # 243-7826 (need 2 days’ notice for make-up tests)

Math Learning Center (Math Bldg, Main Campus): Basement — used for taking make-up tests

math@Mansfield: Mansfield Library — drop-in tutoring center [http://www.umt.edu/math/MLC/default.htm](http://www.umt.edu/math/MLC/default.htm)

Academic calendar available at [http://www.umt.edu/provost/academiccalendar.html](http://www.umt.edu/provost/academiccalendar.html)

OneStop (look for MyLabsPlus link): [http://onestop.umt.edu/](http://onestop.umt.edu/)

Some useful websites:
- [http://algebasc.com/](http://algebasc.com/)
- [http://mtsu32.mtsu.edu:11064/anxiety.html](http://mtsu32.mtsu.edu:11064/anxiety.html) Help for Math Anxiety
# Table of Contents

1. **Linear Functions**  
   1.1 Slopes and Equations of Lines  
   1.2 Linear Functions and Applications  
   1.3 The Least Squares Line  
   Chapter 1 Review  
   Extended Application: Using Extrapolation to Predict Life Expectancy  

2. **Systems of Linear Equations and Matrices**  
   2.1 Solution of Linear Systems by the Echelon Method  
   2.2 Solution of Linear Systems by the Gauss-Jordan Method  
   2.3 Addition and Subtraction of Matrices  
   2.4 Multiplication of Matrices  
   2.5 Matrix Inverses  
   2.6 Input-Output Models  
   Chapter 2 Review  
   Extended Application: Contagion  

3. **Linear Programming: The Graphical Method**  
   3.1 Graphing Linear Inequalities  
   3.2 Solving Linear Programming Problems Graphically  
   3.3 Applications of Linear Programming  
   Chapter 3 Review  
   Extended Application: Sensitivity Analysis  

7. **Sets and Probability**  
   7.1 Sets  
   7.2 Applications of Venn Diagrams  
   7.3 Introduction to Probability  
   7.4 Basic Concepts of Probability  
   7.5 Conditional Probability; Independent Events  
   7.6 Bayes' Theorem  
   Chapter 7 Review  
   Extended Application: Medical Diagnosis  

8. **Counting Principles; Further Probability Topics**  
   8.1 The Multiplication Principle; Permutations  
   8.2 Combinations  
   8.3 Probability Applications of Counting Principles  
   8.4 Binomial Probability  
   8.5 Probability Distributions; Expected Value  
   Chapter 8 Review  
   Extended Application: Optimal Inventory for a Service Truck  

9. **Statistics**  
   9.1 Frequency Distributions; Measures of Central Tendency  
   9.2 Measures of Variation  
   9.3 The Normal Distribution  
   9.4 Normal Approximation to the Binomial Distribution  
   Chapter 9 Review  
   Extended Application: Statistics in the Law - The Castaneda Decision