

Section	MWF	Room	Instructor (Click for email)	Office
1	9 am	MA 103	<a href="#">Rick Darnell</a>	MATH 002

**Walk-in Tutoring Centers:** Math Learning Center (MLC) and Math@UC ([click for location/hours](#)).

**Office Hours:** Mon-Wed: 12-4 pm; Thu: 11 am – 1 pm, or by appointment.

**Course Coordinator:** Dr. Regina Souza, Office MA 104, 243-2166, [Email Regina.Souza@umontana.edu](mailto:Regina.Souza@umontana.edu)  
Office hours: Mon 4-4:50pm, Tues 10-10:50am, Wed 2-2:50pm, Thurs 1:30-2:30pm, email for an appointment.

### Text book:

*Precalculus: An investigation of functions* (copies posted on Moodle). Check the [Open Textbook Store](#) for electronic versions and solutions manuals, or [Lulu](#) for a printed copy (\$8 plus shipping and handling)

### Graphing Calculator

A graphing calculator is required. Class demos will be given with a TI-83 or TI-84.

### Course Description

The central theme of College Algebra is functions as models of change. This course fulfills the prerequisites for M 122 (College Trigonometry) and for M 162 (Applied Calculus). Offered autumn and spring. Prereq., M 095 or ALEKS placement  $\geq 4$ . Intended to strengthen algebra skills. The study of functions and their inverses; polynomial, rational, exponential, and logarithmic functions. Credit not allowed for both M 121, and M 151.

This section works as a “flipped classroom:” I will assign readings and videos for you to read and watch BEFORE class, followed by activities and instruction during class time where you will be working with your peers on the material individually, and in small groups.

### Learning Outcomes

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

- Demonstrate conceptual understanding of functions and solve problems using four different points of view: geometric (graphs), numeric (tables), symbolic (formulas), and written (verbal descriptions and interpretations).
- Be flexible and have the ability to choose between these points of view when solving problems such as evaluating functions; solving equations; identifying where a function is increasing, decreasing, positive, or negative; finding domain and range, intercepts, slope, vertex, concavity, symmetries, end-behavior, and asymptotes.
- Create graphs when given a formula; write a formula when given a graph.
- Build new functions from existing ones: using transformations, composition, and the algebra of functions. Identify when a function has an inverse, identify domain and range, and compute a formula for the inverse, when possible.
- Describe real world situations using linear, quadratic, piecewise, polynomial, power, rational, exponential and logarithmic functions, and interpret functions and their parameters in real word contexts.

**General Education Learning Outcome:** Upon completion of the mathematical literacy requirement, a student will be able to apply effectively mathematical or statistical reasoning to a variety of applied or theoretical problems.

### Course Content

1. *Graphs, Functions, Applications* (Function Notation, Linear Functions, Equations of Lines, Applications, Solving Linear Inequalities, Increasing, Decreasing, and Piecewise Functions, Algebra of Functions, Composition of Functions, Symmetry and Transformations; Quadratic Functions)
2. *Exponential and Logarithmic Functions* (Inverse Functions, Exponential and Logarithmic Functions and their Graphs, Exponential and Logarithmic Equations, Applications)
3. *Polynomial and Rational Functions* (Short-run Behavior, Graphs, Comparing Power, Exponential and Logarithmic Functions, Fitting Exponentials and Polynomials to Data, Applications.)

## Grading Policies

Your course grade will be based on 3 unit exams, a common final exam, and other activities. A tentative schedule is posted on Moodle.

Assignments	Percentages
Three unit exams (100 points each; schedule TBA)	50%
Cumulative final exam ( <i>all sections Tuesday, Apr 30, 5:30-7:30 pm</i> )	25%
Other activities (homework, WeBWorK, quizzes, in-class activities, etc.)	25%

Grading scale:

≥ 93%	≥ 90%	≥ 87%	≥ 83%	≥ 80%	≥ 75%	≥ 70%	≥ 65%	≥ 62%	≥ 58%	≥ 55%	< 55%
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

M121 must be completed **with a C- or better** to fulfill the math literacy requirement. Taking M121 with the Credit/NoCredit option will not fulfill prerequisite requirements either.

## Some Strategies to Complete This Course Successfully

- **Check you have the prerequisites:** you need an Aleks placement level 4, M02 ≥ 12 or consent of instructor.
- **Regular attendance:** give support to and get support from your classmates and instructor during class.
- **Read the textbook both before and after the topics are covered in class:** read the assigned material **before** class to get a feel for the material, take the reading assessment if your instructor provides one, or use the "Check Your Understanding" problems at the end of each chapter. Redo examples on your own and then compare your solution with the authors' approach. Read the "Summary" or create your own summary before you start your homework.
- **"Do math":** One of the best ways to learn mathematics is to do mathematics. There is a *very* strong correlation between completing online [WebWorK](#) assignments and passing test scores. The more you practice and try, the better it is. Expect to do at least 6 hours of work outside class every week, in addition to reading and watching videos in preparation for class.
- **Get some one-to-one interaction:** take advantage of your instructor's regular office hours (also available by appointment), meet with tutors or with your classmates at the [Math Learning Center](#) (in the Math building, Room Math 011) or [Math@UC](#), create a study group or find a study partner. For some of us this is the most effective (and most fun) way to learn math.
- [Use course webpages](#) or login to the [Moodle supplement](#) for more information.

## Some General University Policies

- **Make-ups:** Exam make-ups will be given only under special circumstances (illness, UM-sponsored travel, family emergency, etc.) Please make arrangements as soon as you know you will miss an exam. Early finals (Monday, April 29 or earlier on Tuesday, April 30) will be given only under exceptional circumstances; and need the approval of the course coordinator.
- **Disabilities:** Students with disabilities are welcome to discuss accommodations with me. More information can be found at the website of the [Disabilities Services for Students \(DSS\)](#) (<http://www.umt.edu/dss/>). Disability Services now requires one week's notice for scheduling exams.
- **Important Dates/Deadlines (click for links):** Petitions to drop between March 16 and April 26 must be approved by the Dean of the student's major. Incompletes may be given only if a student has been in attendance and doing passing work up to 3 weeks before the end of the semester. [See these and other policies in the student catalog.](#)
- **Misconduct:** 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. [See Student Conduct Code.](#)