

| Section | MWF   | Room     | Instructor (Click for Email)   | Office     | Phone    |
|---------|-------|----------|--------------------------------|------------|----------|
| 1       | 11 am | MATH 311 | <a href="#">Kevin Palencia</a> | Corbin 361 | ----     |
| 2       | 1 pm  | LA 204   | <a href="#">Regina Souza</a>   | Math 104   | 243-2166 |

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

**Office Hours (for all instructors):** TBA (it will be available on Moodle)

**Course Coordinator:** Dr. Souza: Room MA 104, 243-2166, [Email](mailto:Regina.Souza@umontana.edu): Regina.Souza@umontana.edu

**Office Hours for Dr. Souza:** Mo: 4-5pm; Tue: 10-10:50am, Wed: 2-2:50pm, Th: 1:30-2:30pm,  
or by appointment.

### Text book:

*Functions Modeling Change 5E Custom e-text for UM*, by Connally, Wiley Custom (available at the bookstore). Click [Vital Source](#) if you'd prefer an EBook. (Do not buy the regular 5<sup>th</sup> edition, the UM Custom Edition includes an extra chapter in trigonometry.) (This is the same text used in M121 last semester.)

### Graphing Calculator

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

### Course Description

Offered autumn and spring. Prereq., M 121 or ALEKS placement  $\geq 4$ . Preparation for calculus based on college algebra. Review of functions and their inverses. Trigonometric functions and identities, polar coordinates and an optional topic such as complex numbers, vectors or parametric equations. Credit not allowed for both M 122 and M 151. Credit hours: 3

**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.

### Learning Outcomes

Upon completion of this course students will be able to:

- Demonstrate conceptual understanding of trigonometry and solve problems using four different points of view: geometric (graphs, pictures), numeric (evaluation, tables), symbolic (formulas, identities), and written (verbal descriptions and interpretations).
- Be flexible and have the ability to choose between these points of view when solving problems such as computing the values of special angles in degrees or radians; using, proving or disproving trigonometric identities; finding domain and range, intercepts, symmetries, periodic behavior, and asymptotes.
- Use similarity of triangles and symmetries of the circle to compute trigonometric ratios and to obtain basic relationships between them.
- Choose between the Pythagorean theorem, law of sines or law of cosines when solving right or oblique triangles.
- Create graphs when given a formula of a trigonometric function; write a formula when given a graph of a sinusoidal function. Convert between Polar and Cartesian coordinates, plot points and graph polar equations.
- 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 graph the inverses of sine, cosine and tangent. Use them to solve trigonometric equations.
- Describe real world situations using trigonometric functions, and interpret functions and their parameters in real word contexts.

### Course Content

1. Functions: Definitions, Transformations, Applications, Composition, Inverses
2. Triangle Trigonometry; Law of Sines and Law of Cosines; Trigonometric Functions
3. Trigonometric Identities and Equations, Inverse Trigonometric Functions
4. Polar Coordinates; Parametric Equations for circles

## Grading Policies

Your course grade will be based on 3 midterm exams, a common final exam and other activities. A tentative schedule was distributed in class and is available on Moodle.

| Assignments                                                              | Points and Percentages |
|--------------------------------------------------------------------------|------------------------|
| Three midterm exams (100 points each; Feb 8, Mar 8 & Apr 12)             | 300 points (50%)       |
| Other activities (homework, WeBWorK, quizzes, in-class activities, etc.) | 150 points (25%)       |
| Cumulative Final Exam (all sections Tuesday, April 30, 5:30-7:30 pm)     | 150 points (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     |

M122 must be completed **with a C- or better** to fulfill the math literacy requirement. Taking M122 with the Credit/NoCredit option will not fulfill prerequisite requirements either.

## Some Strategies to Complete This Course Successfully

- **Check you have the prerequisites:** M121, or Aleks placement level 4, 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 authors' introductory remarks 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. Each class will have both written homework and online [WeBWorK](#) assignments. Expect at least 2 hours of work outside class every day.
- **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](#) and 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, Apr 29 or earlier on Tuesday, Apr 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/) (<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.](#)