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Spring 2-1-2018

### M 151.02: Precalculus

Regina P. Souza

*University of Montana - Missoula*, [regina.souza@umontana.edu](mailto:regina.souza@umontana.edu)

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#### Recommended Citation

Souza, Regina P., "M 151.02: Precalculus" (2018). *University of Montana Course Syllabi*. 7743.  
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Section	MTWF	Room	Instructor (Click for Email)	Office	Phone
1	10 am	LA 204	<a href="#">Regina Souza</a>	Math 104	243-2166
2	11 am	LA 204	<a href="#">Regina Souza</a>	Math 104	243-2166

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

**Office Hours (for all instructors):** [TBA\(link to download the pdf document\)](#)

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

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

### Text book:

*Functions Modeling Change 5E Custom eText 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.)

### 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., ALEKS placement  $\geq 4$ . A one semester preparation for calculus (as an alternative to M 121-122). Functions of one real variable are introduced in general and then applied to the usual elementary functions, namely polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, and miscellaneous others. Inverse functions, polar coordinates and trigonometric identities are included. Credit not allowed for both M 151 and M 121 or 122. Credit hours: 4

### Learning Outcomes

Upon completion of this course students will be able to:

1. Manipulate polynomial, rational, power, exponential, logarithmic and trigonometric functions.
2. Graph polynomial, rational, power, exponential, logarithmic, and trigonometric functions.
3. Define trigonometric ratios using right triangles, coordinate systems and the unit circle.
4. Find and apply inverse functions for selected polynomial, rational, power, exponential, logarithmic, and trigonometric functions of a real variable.
5. Use polynomial, rational, radical, exponential, logarithmic, and trigonometric functions of a real variable to model real-world phenomena and solve applied problems.

**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; Family of Quadratic Functions)
2. *Exponential and Logarithmic Functions* (Inverse Functions, Exponential and Logarithmic Functions and their Graphs, Exponential and Logarithmic Equations, Applications)
3. *Trigonometric Functions* (Trigonometric Functions and their inverses, Applications, Arc Length, Graphs, Identities (Sum, Co-function, Double-Angle), Trigonometric Equations, Polar Coordinates)
4. *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 4 midterm exams, a cumulative final exam and other activities. A tentative schedule was distributed in class; here is a [link to the pdf document](#) (download before printing).

Assignments	Points and Percentages
Four midterms (100 points each; Feb 9, Mar 2, Mar 23 & Apr 20)	400 points (50%)
Other activities (homework, WeBWorK, quizzes, in-class activities, etc.)	200 points (25%)
Cumulative Final Exam (all sections Tuesday, May 8, 5:30-7:30 pm)	200 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

M151 must be completed **with a C- or better** to fulfill the math literacy requirement. Taking M151 with the Credit/NoCredit option will not fulfill the requirement.

## Some Strategies to Complete This Course Successfully

- **Check you have the prerequisites:** you need an Aleks placement level 4,  $M02 \geq 17$ , 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@Mansfield](#), 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 (December 13, or earlier on Thursday, December 14) 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 November 2<sup>nd</sup> and December 11 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.](#)