

**Professor Contact:**

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**Course Description:** (<http://www.umt.edu/catalog/mathsci.htm>)

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.

**Learning Goals:**

Upon completion of this course, students will be able to:

- Use factoring to solve equations and to find zeros of polynomial functions.
- Solve linear, quadratic, exponential and logarithmic equations and use them to solve applied problems.
- Use function notation; identify domain, range, and intervals of increasing/decreasing/constant values.
- Find zeros, asymptotes, and domain of rational functions.
- Evaluate and sketch graphs of piecewise functions and find their domain and range.
- Use algebra to combine functions and form composite functions.
- Identify one-to-one functions, find and verify inverse functions, and sketch their graphs.
- Identify and graph linear, polynomial, power, rational, exponential and logarithmic functions.
- Use linear, polynomial, rational, power, exponential, and logarithmic 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; 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.)

**Textbook:**

*Functions Modeling Change 5E*, by Connally, Wiley. Access to WileyPlus is also required. In an effort to help drive down the costs, your faculty member and The Bookstore has worked with the publisher to bring your course materials at a lower cost through the school's Inclusive Access program. The cost of these materials has been charged to your student account. You still have the right to Opt Out and find these materials at the market rate. If you do so, your access will be cancelled and The Bookstore will issue a refund for the fee assessed to your tuition bill. Please note that the link to opt out is below. **Do NOT opt-out unless you think you will end up dropping this class.** This all inclusive program will give you access to WileyPlus which provides an e-book as well as supplemental learning programs. There is a print on demand option as well. If you decide

you need a printed copy of the textbook, you can go to The Bookstore and request a copy from the textbook department. **To access the textbook: You will use the link on the class moodle page (www.wileyplus.-com/class/638098 ) this link gives access to WileyPLUS which includes your text and all of the resources.** Please note our **course ID# 638098**

A calculator is also required. Demonstrations will be given on a TI-84.

For a video introduction to the WileyPlus system, please see: <https://drive.google.com/file/d/1LWEMHz-ABHLMZMPDmioL2HYcZEA8DipAc/view?ts=5ae39240>

The following syllabus is subject to modifications and will most likely be altered:

<u>WEEK</u>	<u>Syllabus</u> <u>SECTIONS</u>	<u>QUIZ &amp; EXAM DATES</u>
5/21-5/25	Ch. 1, 2	<b>Exam 1- Friday, 25 May</b>
5/28- 6/1	Ch. 2, 3	<b>Exam 2- Friday, 1 June</b>
6/4-6/8	Ch. 3, 4, 5	<b>Exam 3- Friday, 8 June</b>
6/11-6/15	Ch. 5, 6, 11	<b>Exam 4- Friday, 15 June</b>
6/18-6/22	Ch. 11	<b>Exam 5- Friday 22 June</b>

**Grading:** Your course grade will be based on 4 exams (100 points each) as the lowest exam score will be dropped. However, **ALL** 5 exams must be taken. Letter grades will correspond to the following percentages (+/- grades may be assigned when deemed appropriate):

<b>A:</b> 90–100%	<b>C:</b> 68-79%	<b>F:</b> 0-59%
<b>B:</b> 80–89%	<b>D:</b> 60-67%	<b>CR:</b> $\geq 60\%$

\*\*\* If you are not taking this course as a general education requirement, you must take it for a traditional letter grade (not CR/NCR). A grade of “D-“ is considered passing and will earn you credit for the course, BUT it will NOT fulfill your general education requirement and you will have to re-take the class\*\*\*

**Make-ups:**

**THERE ARE NO MAKE-UPS** regardless of the reason (e.g. sickness, sports, family emergency, etc.): this is why the lowest exam score is dropped. **Early exams will not be given.**

**Add/Drop Policy:** The last day to add/drop or to change grading option to Audit is **Friday, 25 May**. Changes after this deadline must be done by Petition and approved by me, your advisor and the appropriate Dean. Approval requires genuine extenuating circumstances as listed in the university catalog.

Extenuating circumstances are:

1. Missing a substantial number of classes due to illness, accident or family emergency.
  2. A change in work schedule that makes it impossible to attend class or devote adequate time to the course.
  3. Registration in the course by error and never attending class.
- Reasons that are not satisfactory include:
1. Forgetting to turn in a drop slip.
  2. Protecting your grade point average.

**Incomplete (I) Grades:** To be eligible for an “I”, the following conditions must be met:

1. The student must have been in attendance and passing the course up to 3 weeks before the semester ends; and
2. The student is unable to complete the course due to extenuating circumstances, which usually means serious illness or death in the family.

Incompletes are not given under any other circumstances and are always given at the discretion of the instructor. See the 2017-2018 catalog for further information.

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. All students need to be familiar with the Student Conduct Code. Available for review online at <http://www.umt.edu/SA/VP/SA/index.cfm/page/1321>

**Special Accommodations:** Students with disabilities will receive reasonable accommodations. To request course modifications, please contact me as soon as possible. I will work with you and Disability Services in the accommodation process. For more information, visit the [Disability Services website](#) or call 406.243.2243 (Voice/Text).