Instructor: Dr. Andrew Phillips  
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Office hours: MW 2:30-3:30 through Zoom

Mode of instruction: The lectures will be provided through recorded videos posted to the “Panopto Recordings” section of the Canvas page (go to learn.nmt.edu). You should watch one video per class day. The lab portion of the course will be held live through Zoom.


Course description: This course extends students’ knowledge of polynomial, rational, exponential and logarithmic functions to new contexts, including rates of change, limits, systems of equations, conic sections, and sequences and series.

Prerequisites: MATH 1230 is a corequisite for this course or may be used as a prerequisite if passed with a grade of C- or better.

Place in curriculum: This course is a prerequisite for MATH 1510, a New Mexico general education and institute requirement.

Homework: There will be written homework assigned every Wednesday and due the following Wednesday. Each assignment must be scanned into a single PDF and submitted through the Canvas site for this course. Homework assignments and grades will be posted on the Canvas site. *No late homework will be accepted for any reason.* Your lowest homework grade will be dropped.

Exams: There will be four in-class exams and a cumulative final exam. Calculators and online computing programs (such as Wolfram Alpha) are allowed on homework assignments, but you may not use a calculator during exams. You will need access to a webcam during exams. If you are forced to miss an exam for a legitimate reason, please inform me before the scheduled date if this is at all possible. Unnecessary delay will diminish your chances of being allowed a make-up.

Lab: MATH 1240L is a corequisite for this class. You may register for any section of lab. It will begin the second week of classes. You will need to join a Zoom meeting live during class time.

Grading: Your grade will be determined as follows: attendance/participation 5%, homework 10%, lab 20%, in-class exams 40%, final exam 25%.

Academic honesty: New Mexico Tech’s academic honesty policy for undergraduate students is found starting on page 64 of the NMT undergraduate catalog. You are responsible for knowing, understanding, and following this policy.

Reasonable accommodations: New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. In addition, New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 575-835-6619.

Respect statement: New Mexico Tech supports freedom of expression within the parameters of a respectful learning environment. As stated in the New Mexico Tech Guide to Conduct and Citizenship: “New Mexico Tech’s primary purpose is education, which includes teaching, research,
discussion, learning, and service. An atmosphere of free and open inquiry is essential to the pursuit of education. Tech seeks to protect academic freedom and build on individual responsibility to create and maintain an academic atmosphere that is a purposeful, just, open, disciplined, and caring community.”

Title IX reporting: Sexual misconduct, sexual violence, and other forms of sexual misconduct and gender-based discrimination are contrary to the University’s mission and core values, violate university policies, and may also violate state and federal law (Title IX). Faculty members are considered “Responsible Employees” and are required to report incidents of these prohibited behaviors. Any such reports should be directed to Tech’s Title IX Coordinator (Dr. Peter Phaiah, 20D Brown Hall, 575-835-5187, titleixcoordinator@nmt.edu). Please visit Tech’s Title IX Website (www.nmt.edu/titleix) for additional information and resources.

Student learning outcomes:

1. Functions
   a. Reinforce recognizing a function from its graph and from its algebraic expression
   b. Reinforce identification of a one-to-one function graphically and from its algebraic expression
   c. Reinforce identification of inverse functions graphically and algebraically
   d. Reinforce combining functions arithmetically and compositionally
   e. Be able to calculate the average rate of change of a function using the difference quotient and depict it graphically
   f. Be able to find a limiting value of a function and be able to identify and use the notation that describes this

2. Graphing
   a. Reinforce using key characteristics of functions to graph them
   b. Be able to graph conic sections from their key characteristics such as foci, eccentricity and asymptotes
   c. Be able to identify all functions mentioned from their graphs, describing their key aspects

3. Solving
   a. Exponential/Logarithmic equations using the rules of exponents and logarithms
   b. Systems of linear equations by elimination
   c. Non-linear systems algebraically and graphically

4. Applications
   a. Modeling with functions with an emphasis on exponential and logarithmic functions, growth and decay

5. Sequences and series
   a. Understand the concept and notation of a sequence
   b. Understand the concept and notation of a series
   c. Be able to find limits of basic sequences
   d. Be able to find sums of basic series