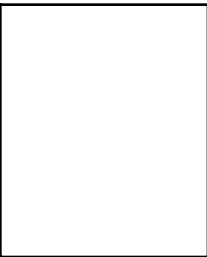# Math 127 – Elementary Functions (Pre-Calc)   (4 credits)

	Attendance and Participation (5%)	Online Homework- WileyPlus (10%)	Progress Checks (5%)	Project (10%)	3 tests (48%- 3@16% each)	Final exam (22%)

Materials you will need for the course:

Connally, Hughes-Hallett, Gleason, et al. (2019

As a result of taking Math 127, students will be able to -

A. Describe what a function is and identify, compare, and understand the relationships between the major function families, especially linear, quadratic, exponential, logarithmic, polynomial, rational, and trigonometric functions and apply this knowledge in real-world contexts.

B. Generate, interpret, and connect different function representations, especially tables, algebraic, graphs, and linguistic and apply this knowledge in real-world contexts.

C. Define, identify, and describe characteristics of functions including: zeroes (x-intercepts), y-intercepts, increasing intervals, decreasing intervals, extrema, growth rates, end-behavior, concavity, domain, range, and asymptotes and apply this knowledge in real-world contexts.

D. Perform operations on functions, interpret the results, and apply this knowledge in real-world contexts. Operations include: arithmetic operations, finding the inverse, composing functions, translating functions, evaluating functions, solving equations involving functional relationships.

Prerequisites:	A satisfactory score on the math placement index and either two years of high school algebra with a grade of C or better (C- is not acceptable) or the equivalent.
Description:	This course covers families, representations, operations, and characteristics of functions.

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can connect you with support services and help explore your options now, or in the future.

> UNC's Assault Survivors Advocacy Program (ASAP): 24 Hr. Hotline 970-35-4040
> or   www.unco.edu/asap
> UNC Counseling Center: 970-351-2496 or www.unco.edu/counseling
> UNC Psychological Services: 970-351-1645 or www.unco.edu/cebs/psych_clinic

If you are a survivor or someone concerned about a survivor, or if you would like to learn more about
sexual misconduct or report an incident, please visit www.unco.edu 0 Td(4eM4 (n)10. 10.9 (u/)-4.6 (c)9.2 (e)-1.6 (bs)oi)-

1) Functions
   a) Input and Output
   b) Domain and Range
   c) Function Notation

2) Linear Functions
   a) Family of Linear functions
   b) Rate of change

3) Exponential Functions
   a) Family of Exponential Functions
   b) Comparing Exponential and Linear Functions
   c) Applications of Compound Interest
   d) The number A

4) Logarithmic Functions
   a) Logarithms and their Properties
   b) Logarithmic Functions and its Applications

5) Quadratic Functions
   a) Family of quadratic functions
   b) Vertex of a parabola

6) Polynomial and Rational Functions
   a) Power Functions
   b) Polynomial Functions
   c) Short-run behavior of Polynomials
   d) Rational Functions
   e) Short-run behavior of Rational Functions

7) Trigonometric Functions
   a) Sine function
   b) Cosine function

8) Transformations of functions
   a) Shifts, Reflections and Symmetry
   b) Vertical Stretches and Compressions
   c) Horizontal Stretches

9) Composition, Inverse and Combinations of Functions

Important Dates

Last day to add classes: Friday, January 14, 2022
Martin Luther King Day: University closed: Monday, January 17, 2022
Last day to drop classes: Monday, January 24, 2022
Last day to withdraw from classes and receive a 'W': April 29, 2022
Spring Break is March 12-20
Final Exam will be given during the University Scheduled time. (unco.edu; search final exam schedule)

This course is a part of the Liberal Arts Curriculum at UNC and fulfills 4 credit hours of the Mathematics category. The Colorado Commission on Higher Education has approved Math 127 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT- MA1 category. For transferring students, successful completion with a minimum C   grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to http://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html

UNC's LAC outcomes in Mathematics are aligned with the State of Colorado's GT Pathways student learning outcomes, competencies, and content criteria for GT-MA1. This includes CDHE competency and student learning outcomes in Quantitative Literacy.

Competency in quantitative literacy represents a student's ability to use quantifiable information and mathematical analysis to make connections and draw conclusions. Students with strong quantitative literacy skills understand and can create sophisticated arguments supported by quantitative evidence and can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc.)

LAC Mathematics Learning Outcomes + gtP Competency & SLO's