MATH 150: Student Learning Outcomes (SLOs)

The department of Mathematics and Statistics has designed the courses in the core sequence (math 121-181, and stat145) to provide coherent and effective instruction for students in other majors or programs. Our purpose is to prepare students to effectively use quantitative and symbolic reasoning and analysis in their personal and professional lives. The following SLOs describe what a student should be able to do at the end of their math course. They provide a focus and a standard for the classroom for both the instructor and the student.

All SLOs listed below address UNM Core Area 2, HED Area II: Mathematics, Algebra Competencies.

Course Goal 1: Communication
SLO 1: Students will be able to use correct mathematical notation and terminology.
SLO 2: Students will be able to read and interpret graphs.

Course Goal 2: Functions
SLO 1: Students will be able to evaluate functions and difference quotients for a variety of functions.
SLO 2: Students will be able to graph some basic functions; this includes power, root, reciprocal, and piecewise defined functions.
SLO 3: Students will be able to calculate an average rate of change of a function and to interpret its meaning.
SLO 4: Students will be able to shift, and reflect graphs, and to compress and stretch graphs horizontally and vertically.
SLO 5: Students will be able to set up models using functions in word problems.
SLO 6: Students will be able to find extreme values of quadratic functions.
SLO 7: Students will be able to compose functions and to express a given functions as a composition of two simpler functions.
SLO 8: Students will be able to identify one-to-one functions and find and graph their inverses.

Course Goal 3: Polynomial and Rational Functions
SLO 1: Students will be able to determine the end behavior and the zeros of polynomial functions. They will be able to use this to graph the function.
SLO 2: Students will be able to divide polynomials and to understand the Division Algorithm.
SLO 3: Students will be able to solve quadratic equations with complex roots.
SLO 4: Students will be able to use the Fundamental Theorem of Algebra and the Complete Factorization Theorem.
SLO 5: Students will be able to find horizontal, vertical, and skew asymptotes of rational functions. They will be able to graph rational functions.

Course goal 4: Exponential and Logarithmic Functions
SLO 1: Students will be able to graph exponential and logarithmic functions.
SLO 2: Students will be able to solve a variety of exponential and logarithmic equations.
SLO 3: Students will be able to set up exponential growth and decay models and to solve the associated word problems.

Course goal 5: Analytic Geometry
SLO 1: Students will be able to identify and graph the conic sections.
SLO 2: Students will be able to graph parametric equations in two dimensions that involve algebraic functions. They will be able to eliminate the parameter.