Program Goals and Student Learning Outcomes
B.S. in Mathematics, Mathematics Education Concentration
Department of Mathematics and Statistics
University of New Mexico

1 Broad Program Goals

Upon graduation the students of the Mathematics Education concentration will attain:

A. Mathematics knowledge.

- Demonstrate understanding of the foundations of calculus and linear algebra.
- Demonstrate the ability to think logically and critically. Specifically the student will be able to differentiate assumptions from conclusions, and be able to construct logical arguments.

B. An advanced perspective of high school level mathematics.

C. Employment and technical skills.

- Translate the undergraduate degree into a viable career path or graduate degree.
- Demonstrate communication skills (oral and written).

2 List of Student Learning Outcomes (SLOs) for this Degree

A.1 Compute limits and derivatives using their definitions, and use the fundamental theorem of calculus to compute definite and indefinite integrals.

A.2 Understand the role of definitions, axioms, and theorems in mathematical work. Recognize whether or not an argument is a valid proof. Produce viable proofs on your own with an appreciation of careful use of language.

B.1 Demonstrate an understanding of algebraic structures and, in particular, an algebraic viewpoint of the real number system.

B.2 Demonstrate an understanding of different models of geometry, both Euclidean and non-Euclidean. In particular, understand the real numbers and the cartesian plane geometrically.

B.3 Understand and develop an appreciation for how mathematics and statistics can be applied to real-world phenomena. Demonstrate problem solving skills.

B.4 Demonstrate an understanding of the importance that functions play in connecting topics across the high school curriculum.

C.1 Demonstrate sufficient preparation in higher level mathematics to become successful high school math teachers.

C.2 Demonstrate effective written mathematical communication.