

Assessment Report AY 2020-2021

Mathematics

(Instructional Degree Program)

B.A.

(Degree Level)

Program Mission:

The mission of the Mathematics Program at New Mexico Highlands University is to provide students with a challenging, market relevant and high-quality education in mathematics. Students completing the baccalaureate program in mathematics will be well prepared for their first position in the field. Each mathematics graduate will be capable of independent thought and initiative in the field of mathematics. Each graduate will demonstrate the behavior and attitudes of a professional in the field and be capable of performing the technical tasks required of their field.

Student Learning Outcome 1:

Understanding and demonstrating mastery of basic algebraic skills (Math 1215) as well as more advanced algebraic technique and concepts (Math 1220).

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Mastery of Content Knowledge and Skills

First Means of Assessment for Outcome 1:

Final grade from Math 1215: Intermediate Algebra. Students' mastery will be measured by the cumulative percentage of passing grades for all sections of the course offered in Fall 2020 and Spring 2021.

Summary of Data:

Number of Students Meeting Criterion:	111	Number of Students Not Meeting Criterion:	97
Total Number of Students Assessed:	208	Percent of Students Meeting Criterion:	53.4%

Second Means of Assessment for Outcome 1:

Final grade from Math 1220: College Algebra. Students' mastery will be measured by the cumulative percentage of passing grades for all sections of the course offered in Fall 2020 and Spring 2021.

Summary of Data:

Number of Students Meeting Criterion:	103	Number of Students Not Meeting Criterion:	58
Total Number of Students Assessed:	161	Percent of Students Meeting Criterion:	64%

Interpretation of Results for Outcome 1:

53.4% of students taking Math 1215 and 64% of students taking Math 1220 in Fall 2020 and Spring 2021 passed these courses. The pass rate for Math 1215 dropped significantly from the AY 2019-2020 when the pass rate was 70.2. The 64% pass rate for Math 1220 is slightly down from the AY 2019-2020 pass rate which was 66.7%. All of the math classes during the AY 2020-2021 were taught online. This seems to have had a significant negative impact on Math 1215.

Change to Program Based on Results:

No changes to the program are recommended based upon these results. We have gone back to teaching all of the math classes face-to-face.

Student Learning Outcome 2:

Effectively understand and demonstrate competence and proficiency with analytic geometry, algebraic manipulation of formulas and equations, rates of change and applications of the derivative and the integral; effectively be able to write proofs in Math 3170.

NMHU Traits Specifically Linked to Student Learning Outcome 2

- Critical and Analytic Thinking Skills
- Algebraic Competence

First Means of Assessment for Outcome 2:

Math 1510: Calculus 1 Students' ability to successfully demonstrate proficiency with the topics and concepts in this course will be measured by an achievement of a passing grade.

Summary of Data

Number of Students Meeting Criterion:	30	Number of Students Not Meeting Criterion:	10
Total Number of Students Assessed:	40	Percent of Students Meeting Criterion:	75%

Second Means of Assessment for Outcome 2:

Math 1520: Calculus 2. Students' ability to successfully demonstrate proficiency with the topics and concepts in this course will be measured by the achievement of a passing grade.

Summary of Data:

Number of Students Meeting Criterion:	6	Number of Students Not Meeting Criterion:	3
Total Number of Students Assessed:	9	Percent of Students Meeting Criterion:	66.7%

Third Means of Assessment for Outcome 2:

Math 3170: Discrete Mathematics. Students' ability to successfully demonstrate proficiency with the topics and concepts in this course will be measured by the achievement of a passing grade.

Summary of Data:

Number of Students Meeting Criterion:	6	Number of Students Not Meeting Criterion:	2
Total Number of Students Assessed:	8	Percent of Students Meeting Criterion:	75%

Interpretation of Results for Outcome 2:

The pass rates for Math 1510 and Math 1520 are slightly down from AY 2019-2020 pass rates. However, the Mathematics and STEM students are doing well with the material in Math 1510, Math 1520, and Math 3170.

Change to Program Based on Results:

No changes to the program are recommended based upon these results.

Student Learning Outcome 3:

Effectively process more abstract and theoretical mathematical ideas and concepts, and effectively construct and write mathematical proofs associated with these concepts.

NMHU Traits Specifically Linked to Student Learning Outcome 3

- Mastery and Interpretation of Abstract Analytic Mathematical Concepts
- Mastery of Content Knowledge and Skills
- Critical and Reflective Thinking Skills

First Means of Assessment for Outcome 3:

Math 4250: Introduction to Real Analysis: Students' ability to construct and transcribe meaningful and logically correct mathematical proofs, as well as processing abstract theoretical concepts and ideas will be measured by the achievement of a passing grade.

Summary of Data

Number of Students Meeting Criterion:	3	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	4	Percent of Students Meeting Criterion:	75%

Second Means of Assessment for Outcome 3:

Math 4210: Applied Abstract Algebra: Similar to Math 4250, students are asked to construct mathematical proofs in relation to concepts involving abstract algebraic structures. Students' ability to demonstrate mastery of proof-writing and abstract interpretive skills will be measured by the achievement of a passing grade.

Summary of Data

Number of Students Meeting Criterion:	0	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	0	Percent of Students Meeting Criterion:	

Interpretation of Results for Outcome 3:

Math 4250 and Math 4210 will be the designated courses to assess proficiency and competence for mathematics major.

The Math 4210 was not taught during the AY 2020-2021. The pass rate for Math 4250 was good.

Change to Program Based on Results:

No changes to the program are recommended based upon these results.