

## ASSESSMENT REPORT 2019-2021

### Natural Sciences

(Instructional Degree Program)

### M.S.

(Degree Level)

### Concentration

#### **Geology**

#### **Program Mission:**

The mission of the M.S. Natural Sciences-Geology Concentration is to provide students with pre-professional and post-graduate education in the management of natural resources with a geology emphasis through engagement in graduate-level coursework, practice in teaching undergraduate geology laboratory sections, and participation in thesis research.

#### **Student Learning Outcome 1:**

***Competency in graduate level coursework.***

#### **NMHU Traits Specifically Linked to Student Learning Outcome 1**

- Mastery of Content Knowledge and Skills

#### **First Means of Assessment for Outcome 1:**

Maintenance of a 3.0 GPA for graduate level coursework.

#### **Summary of Data:**

Number of Students Meeting Criterion:	8	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	8	Percent of Students Meeting Criterion:	100%

**Interpretation of Results for Outcome 1:** *M.S. Natural Sciences-Geology graduate students consistently do well in their graduate-level coursework. The Natural Resources Management – Environmental Geology faculty selects a relatively small pool of qualified applicants into the graduate program with undergraduate academic records and/or applied experiences that demonstrate potential to succeed in graduate school. Rigorous review of application materials and maintenance of program pre-requisites factor into student success.*

**Student Learning Outcome 2:**  
***Competency in teaching assistantship.***

**NMHU Traits Specifically Linked to Student Learning Outcome 2**

- Mastery of Content Knowledge and Skills
- Effective Communication Skills
- Critical and Reflective Thinking Skills

**First Means of Assessment for Outcome 2:**

Success in delivering lab introductions, grading and returning student materials, maintaining office hours, and making meaningful contributions to laboratory section, as reported by faculty instructors.

**Summary of Data:**

Number of Students Meeting Criterion:	6	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	6	Percent of Students Meeting Criterion:	100%

**Interpretation of Results for Outcome 2:** *M.S. Natural Sciences-Geology graduate students consistently do well in their teaching assistantships. The Natural Resources Management – Geology faculty meets regularly with and mentors graduate students in aspects of teaching (lecture preparation, material delivery, one-on-one student interaction, and grading) to help with teaching assistantship professional development. The faculty also prepares a “Teaching Assistant Contract” at the beginning of the academic year that delineates teaching assistant expectations, including maintenance of office hours, laboratory session preparation, and one-week turn-around-time for grading. In addition, the Geology faculty require that graduate students attend professional development training with the Center for Teaching Excellence to be learned in sexual harassment reporting, classroom behavior management, academic misconduct reporting, responding to accessibility, communicating with students, and overall professionalism. This training adds value to the M.S. Natural Sciences-Geology graduate students’ classroom comportment and professional growth.*

**Student Learning Outcome 3:**

***Progress and proficiency in thesis research, including the design, defense, and execution of a thesis or independent research project.***

**NMHU Traits Specifically Linked to Student Learning Outcome 3**

- Mastery of Content Knowledge and Skills

- Effective Communication Skills
- Critical and Reflective Thinking Skills

**First Means of Assessment for Outcome 3:**

Writing of a thesis proposal, defense of the thesis proposal, and progress in the thesis research as reported by graduate thesis advisors.

**Summary of Data:**

Number of Students Meeting Criterion:	8	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	8	Percent of Students Meeting Criterion:	100%

**Interpretation of Results for Outcome 3:** *M.S. Natural Sciences-Geology graduate students consistently do well, in collaboration with their graduate thesis advisors, designing, defending, and executing their thesis or independent research projects.*

**Student Learning Outcome 4:**

***Successful completion of a Master’s thesis within 3-year (6-semester) timeframe.***

**NMHU Traits Specifically Linked to Student Learning Outcome 4**

- Mastery of Content Knowledge and Skills
- Effective Communication Skills
- Critical and Reflective Thinking Skills

**First Means of Assessment for Outcome 4:**

Completion of a M.S. thesis project and paper within a 3-year (6-semester) timeframe.

**Summary of Data**

Number of Students Meeting Criterion:	4	Number of Students Not Meeting Criterion:	3
Total Number of Students Assessed:	7	Percent of Students Meeting Criterion:	60%

**Interpretation of Results for Outcome 4:** *All of the Geology graduate student did well in developing and executing their thesis projects. They doggedly worked on reducing their data, interpreting their results, and writing their thesis. All of the students gave at least one presentation at a regional or national conference and most gave multiple conference presentations. The 3 students who did not complete their theses in a 3-year timeline were each caught up in the challenges of the COVID-19 pandemic. They were*

*prohibited from accessing the laboratories and offices for several months, after which access was extremely restrictive. The students did amazingly well navigating COVID-19 restrictions, meeting remotely with their peer groups and advisors, and working towards thesis completion.*

*Note that the Geology graduate faculty is stretched extremely thin in teaching, research, and service commitments and has campaigned for 5+ years for an additional tenure-track faculty member to assist with the delivery of graduate courses and mentoring of graduate students. The faculty will continue this request in the hopes that with an additional faculty member, more time, effort, and talent can be directed towards students lagging in their thesis research progress.*