

ASSESSMENT REPORT 2016-2017

Chemistry Graduate
(Instructional Degree Program)

M.S.
(Degree Level)

Program Mission:

The goal of the chemistry Master of Science degree program is to adequately prepare the graduate to enter the work force at the level of a M.S. graduate. It also designed to prepare students for the rigors of a more advanced Ph.D. program of study.

Student Learning Outcome 1:

NMHU Master of Science Chemistry graduates should be familiar with chemical literature and comfortable in presenting and researching relevant chemistry topics.

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Mastery of Content Knowledge and Skills
- Effective Communication Skills

First Means of Assessment for Outcome 1:

Chemistry 691, a required colloquium course, is designed to evaluate the students abilities to produce papers and oral presentations based on chemical literature chosen in consultation with their research adviser. This outcome is considered met if the student earns a B or better in CHEM 691. The program goal will be considered met if the percentage of students meeting this criteria is greater than 90%.

Summary of Data:

Number of Students Meeting Criterion:	6	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	7	Percent of Students Meeting Criterion:	83%

Second Means of Assessment for Outcome 1:

Chemistry 541, a required course in the MS degree, involves a literature presentation designed to assess student's ability to carry out literature research and presentation of relevant background information in an area outside of their research project. This outcome is considered met if the student receives a grade of 75% or higher on this

assignment. The program goal will be considered met if the percentage of students meeting this criteria is greater than 90%.

Summary of Data:

Number of Students Meeting Criterion:	4	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	5	Percent of Students Meeting Criterion:	80%

Interpretation of Results for Outcome 1:

Small sample sizes mean that even small numbers of students not meeting the criteria make our thresholds difficult to meet. In both cases, there was only 1 student who did not meet the criteria, which is an acceptable rate for this program.

Student Learning Outcome 2:

NMHU Master of Science Chemistry graduates should be able to analyze and solve a chemical problem and communicate appropriate solutions to the problem that utilize appropriate chemistry-related instrumentation.

NMHU Traits Specifically Linked to Student Learning Outcome 2

- Mastery of Content Knowledge and Skills
- Effective Communication Skills
- Effective Use of Technology

First Means of Assessment for Outcome 2:

Chemistry 519, a required course in the MS program, is an laboratory-based analytical course which focuses on instrumentation and experimental problem solving. This outcome is considered met if the student earns a B or higher in CHEM 519. The program goal will be considered met if the percentage of students meeting this criteria is greater than 90%.

Summary of Data

Number of Students Meeting Criterion:	5	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	5	Percent of Students Meeting Criterion:	100%

Interpretation of Results for Outcome 2:

Students show proficiency in this area, demonstrating the ability of our students to analyze and perform experiments effectively.

Student Learning Outcome 3:

NMHU Master of Science Chemistry graduates should have the opportunity and the ability to present their research outside of the department to the broader scientific community.

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:

This outcome is considered met if the student presents their thesis research at venues outside of the chemistry department seminar. Examples of such venues include professional meetings, poster symposia, or invited seminars at other institutions. The program goal will be considered met if the percentage of students meeting this criteria is greater than 75%.

Summary of Data

Number of Students Meeting Criterion:	5	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	6	Percent of Students Meeting Criterion:	83%

Interpretation of Results for Outcome 3:

The percentage was right at the threshold. This is something our program has identified as an area of improvement, and so we are committed to making our students aware of opportunities and encouraging them to take advantage of chances to get their research heard by a broader audience.