

ASSESSMENT REPORT 2014-2015

Chemistry Undergraduate
(Instructional Degree Program)

B.S.
(Degree Level)

Program Mission:

The goal of the chemistry Bachelor of Science degree program is to adequately prepare the graduate to enter the workforce at the level of a B.S. Graduate. It is also designed to prepare students for the rigors of a more advanced M.S. or Ph.D. program of study. Course preparation and advisement are available for students who chose to enter a professional school to study for a career in an area such as medicine, veterinary science, dentistry, pharmacy, etc.

Student Learning Outcome 1:

NMHU Bachelor of Science Chemistry graduates should have the command of a basic body of chemical knowledge that is competitive with any B.S. Level chemistry graduate from any quality US University or institution.

NMHU Traits Specifically Linked to Student Learning Outcome 1

Mastery of Content Knowledge and Skills

First Means of Assessment for Outcome 1:

The American Chemical Society produces standardized entrance examinations for general, organic, analytical chemistry, biochemistry, and physical chemistry. These examinations allow the faculty to compare the competence of our students with those at other institutions. Student outcomes are considered met if students score within one standard deviation of the average of National Raw Score Composite Norms for any particular ACS subject exam.

Summary of Data:

Number of Students Meeting Criterion:	14	Number of Students Not Meeting Criterion:	3
Total Number of Students Assessed:	17	Percent of Students Meeting Criterion:	82.4%

Interpretation of Results for Outcome 1:

At greater than 80% meeting the benchmark, the students in the chemistry BS program are matching the national expectations for chemistry students.

Student Learning Outcome 2:

NMHU Bachelor of Science Chemistry graduates should be able to analyze and solve a chemical problem and suggest appropriate solutions to the problem that apply responsible and safe procedures. They should also have the ability to use appropriate chemistry-related instrumentation in the solution of the chemical problems and be able to communicate by oral, written and electronic means.

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:

A capstone course, Chemistry 495, Senior Chemistry Applications, was implemented the first time in the spring semester, 1999. This course consists of an open-ended advanced chemistry project and a series of oral and written examinations that are designed to reveal each student's overall understanding of chemistry. Student outcomes are considered met if students score a "B" or better for the capstone course.

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 2:

Involvement of students in research projects allows the faculty to ascertain student achievement in the areas of work ethics, instrumentation usage, safety, problem solving, project completion abilities and the utilization of basic chemical knowledge. Students outcomes are considered met if students engage in research and present their findings at professional meetings or department seminars.

Summary of Data:

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

Interpretation of Results for Outcome 2:

The capstone course succeeds in challenging students. The program still has several of these students gaining their first exposure to research projects at this

late stage, which increases the challenge. Strategies to engage students in research at an earlier point in their degree are being formulated and implemented.

Student Learning Outcome 3:

NMHU Bachelor of Science Chemistry graduates should have the maturity and the work ethic to succeed as a professional chemist or in a related technical discipline.

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:

History and employment status of graduates.

Summary of Data

Number of Students Meeting Criterion:	2	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	2	Percent of Students Meeting Criterion:	100%

Interpretation of Results for Outcome 3:

Success here indicates that the program is producing quality graduates that are able to succeed at the next level, whether that is further education or employment.