

ASSESSMENT REPORT 2014-2015

Biology Undergraduate
(Instructional Degree Program)

B.S.
(Degree Level)

Program Mission:

The mission of the Biology program is to provide undergraduate and graduate students with a high quality science education that includes experience with research and field projects. The program provides a scientific and technical background that empowers students to successfully pursue science and technology careers, or proceed on to advanced graduate studies.

Student Learning Outcome 1:

Have a command of basic biological knowledge in the areas of ecology and evolution, cell and molecular biology and organismal biology.

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Mastery of Content Knowledge and Skills

First Means of Assessment for Outcome 1:

Successful students will master course content in representative upper level major courses, with an average grade of "C" or better on class tests and laboratory reports. 75% or more students will meet our criteria for success.

Summary of Data:

Number of Students Meeting Criterion:	26	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	27	Percent of Students Meeting Criterion:	96.3%

Second Means of Assessment for Outcome 1:

Graduating seniors will take the MFAT test. This test will allow us to track individual performance over time. The MFAT test is more a measure of determining how our students compare to national averages.

Summary of Data:

Number of Students Meeting Criterion:	7	Number of Students Not Meeting Criterion:	10
Total Number of Students Assessed:	17	Percent of Students Meeting Criterion:	41.2%

Interpretation of Results for Outcome 1:

Our students do not compare well to the national average on the mfat or many other norm-referenced exams such as GRE or MCAT even though most are meeting our other criteria. The assessments that we devise are better aligned with our course objectives and what we have taught but many students do have to take standardized tests for admission to advanced degree and professional programs. We are concerned that students do not seem to be good at transferring knowledge or skills from one class or situation to another. This seems to be part of critical thinking, which we all think is important but we are not sure how to teach it. In addition we want to know how students have grown in knowledge from the time they entered our program until they graduate. We will continue to evaluate how best to assess this trait

Student Learning Outcome 2:

Have an understanding of and the ability to use scientific methodology and technology through which biological knowledge accumulates.

NMHU Traits Specifically Linked to Student Learning Outcome 2

- Effective Communication Skills
- Effective Use of Technology

First Means of Assessment for Outcome 2:

Senior project-successful students will show mastery and apply knowledge of basic biological principles to a degree that is satisfactory to the faculty of the biology discipline as indicated by a grade of "B" or better. 75% or more of students will meet our criteria for success.

Summary of Data

Number of Students Meeting Criterion:	18	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	19	Percent of Students Meeting Criterion:	94.7%

Second Means of Assessment for Outcome 2:

Mastery of laboratory skills and techniques demonstrated by an average grade of "C" or better on laboratory reports for representative upper level courses. 75% or more of students will meet our criteria for success.

Summary of Data:

Number of Students Meeting Criterion:	26	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	27	Percent of Students Meeting Criterion:	96.3%

Interpretation of Results for Outcome 2:

Students are successfully meeting this outcome but faculty discussions indicate that many students find this difficult and need more input from faculty members than we think should be necessary.

Student Learning Outcome 3:

Be able to effectively communicate and critically analyze biological knowledge.

NMHU Traits Specifically Linked to Student Learning Outcome 3

- Effective Communication Skills
- Critical and Reflective Thinking Skills
- Effective Use of Technology

First Means of Assessment for Outcome 3:

Successful students will demonstrate mastery with scores of "C" or better for research papers and/or oral presentations in representative upper level courses.

Summary of Data

Number of Students Meeting Criterion:	9	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	10	Percent of Students Meeting Criterion:	90%

Second Means of Assessment for Outcome 3:

Successful students will show mastery and apply knowledge of basic biological principles to a degree that is satisfactory to the faculty of the biology discipline as indicated by a grade of "B" or better on the Senior project. 75% or more of students will meet our criteria for success.

Summary of Data

Number of Students Meeting Criterion:	18	Number of Students Not Meeting Criterion:	1
Total Number of Students Assessed:	19	Percent of Students Meeting Criterion:	94.7%

Interpretation of Results for Outcome 3:

Students have successfully met this criteria.

Student Learning Outcome 4:

Receive a comprehensive background essential to advanced work and/or a career in biology or related fields.

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:

The student satisfaction survey administered to all graduating seniors by the Office of Institutional Research and Effectiveness. Measures of success- 50% or more of respondents indicate that they are continuing their education or employment in biology or related area. 75% of the respondents will indicate that they are satisfied or very satisfied with their preparation for work or graduate school. Faculty knowledge will be used to collect information on career paths of students who graduated the previous year.

Summary of Data

Number of Students Meeting Criterion:	12	Number of Students Not Meeting Criterion:	2
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Total Number of Students Assessed:	14	Percent of Students Meeting Criterion:	85.7%
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Interpretation of Results for Outcome 4:

NMHU biology graduates are quite successful either at finding employment in biology related fields or continuing their education in a biology or health field. We consider this to be the ultimate measure of the success of our program; students are well prepared for a career or advanced course work in the biological sciences.