

University of Minnesota Morris Digital Well

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Assessment of Student Learning Reports

Assessment of Student Learning Committee  
(Inactive)

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Spring 2016

### Biology Discipline 5-Year Plan 2016-2021

Biology Discipline

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**Academic Program: Biology**

**Academic Division: Science and Math**

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In the space below, list your Program Student Learning Outcomes (PSLOs):

**Objectives and PSLOs for the new catalog:**

**Objectives**—the biology discipline is designed to

- Provide students a broad base of fundamental biological knowledge in evolution, genetics, cell and molecular biology, the diversity of life, and ecology.
- Provide students in our upper-level electives detailed knowledge in specific sub-disciplines including experience collecting and interpreting data in both the field and laboratory.
- Advance student skills in written and oral communication of biological information.
- Prepare and encourage students to conduct undergraduate research at UMM or at other institutions.
- Prepare students for postgraduate education in biological research and health-related programs, and/or a variety of careers in biology, including secondary education.
- Provide discipline specific courses for non-majors to serve UMM's general education requirements.

**Learning Outcomes**—The curriculum is designed to ensure that students in biology will:

- A. have sufficiently broad training to apply biological knowledge in a wide range of professional and research settings.
- B. recognize evolution as the unifying theme for all of biology and be able to view biological information and questions in an evolutionary context.
- C. be able to apply knowledge of chemistry, statistics, and mathematics to biological systems.
- D. understand the global nature of biological issues while cultivating a sense of place through study of regional species and ecological systems.
- E. be able to seek answers to biological questions through developing and executing scientific inquiry in the field or laboratory setting and by querying biological literature.
- F. be able to synthesize and clearly articulate scientific information via written and oral communication.
- G. be aware of ethical considerations related to biological research and have the necessary training to conduct work in a safe and sustainable manner.

Enter Academic Program Name:				
Program Student Learning Outcome(s) to be assessed	How will you measure the outcome?	Where will the data be collected and by whom?	When will the data be collected?	Overlap with CSLOs? * If yes, which CSLO?
<b>2016-17</b> A, G	Evaluation and summary of Senior Survey *Collected annually in conjunction with Senior Seminar *Specific highlights: Employment after graduation, scores on standardized tests (GRE, MCAT, etc.) *Participation in extracurricular research and internship programs  Summary of Safety Record *Incident reports in lab *#Students undergoing safety training to work as TAs +/- student researchers *Students trained to work with live animal research *#Students receiving safety training/certification in Cell Biology			1a, 1b, 1c 2a, 2b, 2d, 2e 3d 4a, 4b, 4c
<b>2017-18</b> C, E, F	Communications Block Assessment (Biol 3700, Biol3701, Biol 4901) Grade distribution for Senior Seminar Range of Senior Seminar topics and resources as reflected by the abstracts and associated bibliographies *Collected annually by the senior seminar coordinator *Data summarized in 2017-18 by the Biology Discipline Grade distribution for Biological Communications II (Biol 3701) *Collected each semester by Biocomm II instructors *Data summarized in 2017-18 by the Biology Discipline			1b, 2a, 2b, 2d, 2e 3d 4a, 4b, 4c
<b>2018-19</b> B, C, D, E, F	Organismal-level and above coursework (Biol. 1111, Biol 2101, Biol 3131, relevant electives) Final exam questions to assess student knowledge in targeted areas in Biol 1111, 2101, 3131 Writing assignment on natural selection in Biol 1111 Before/after phylogeny exercise in Biol 2101 *Collected annually by instructors in these courses *Data summarized in 2018-19 by Biology Discipline Final exam questions and grade distribution on relevant assignments (Biol 4xxx electives) *Collected annually by instructors in these courses *Data summarized in 2018-19 by Biology Discipline			1a, 1b, 1c 2a, 2b, 2d, 2e 3d, 3e 4a, 4b, 4c

<p><b>2019-20</b> B, C, D, E, F</p>	<p>Cell-level and below coursework (Biol 1111, Biol 2111, Biol 3121, relevant electives) Organismal-level and above coursework (Biol. 1111, Biol 2111, Biol 3121) Final exam questions to assess student knowledge in targeted areas in Biol 1111, 2111, 3121 *Collected annually by instructors in these courses *Data summarized in 2019-20 by Biology Discipline Grade distribution on lab reports (Biol. 1111, Biol 2111, Biol 3121) Final exam questions and grade distribution on relevant assignments (Biol 4xxx electives) *Collected annually by instructors in these courses *Data summarized in 2019-20) by Biology Discipline</p>	<p>1a, 1b, 1c 2a, 2b, 2d, 2e 4a, 4b, 4c</p>
<p><b>2020-21</b> A, B, C, D, E, F</p>	<p>Collect exemplary artifacts documenting student accomplishments Biol 3701 Papers Senior Seminar PowerPoint Presentations Research Posters (extracurricular research and in class projects) Writing assignments and lab reports *Collected annually by instructors in relevant courses *Data summarized in 2020-21) by Biology Discipline</p>	<p>1a, 1b, 1c 2a, 2b, 2d, 2e 3d, 3e 4a, 4b, 4c</p>

\*CSLOs are Campus Student Learning Outcomes. These are reprinted below for your convenience. Your PSLOs need not overlap with CSLOs, but if your PSLO does reinforce or overlap with a CSLO, please report that information.

**Please report any other planned assessment for your academic program in the space below:**

Biology courses of all levels are taken by students with majors other than biology. Many of these students do not complete the entire “core” of biology requirements (Biol 1111, 2101, 2111, 3121, 3131, 3700, 3701). In order to assess how our core requirements (particularly Biol 1111, 2101, 2111) prepare students for advanced work, we will be comparing the performance of students major in Biology with that of students majoring in other programs (Biochemistry, Environmental Science, Environmental Studies).

## **UMM Campus Student Learning Outcomes (CSLOs)**

*Approved Unanimously by the Curriculum Committee, December 10, 2009*

*Approved by Campus Assembly, March 3, 2010*

The University of Minnesota, Morris's goal is for students to have gained, by the time of graduation:

*1. Knowledge of Human Cultures and the Physical and Natural World through:*

- a) Core studies in the liberal arts: arts, histories, humanities, languages, mathematics, sciences, and social sciences
- b) In-depth study in a particular field: its schools of thought, advanced theories, language, and methods of inquiry
- c) Engagement with big questions, both contemporary and enduring

*2. Intellectual and Practical Skills, practiced extensively across students' college experiences, including:*

- a) Inquiry and analysis
- b) Critical thinking and problem-solving
- c) Creative thinking and artistic expression
- d) Written, multi-media, and oral communication
- e) Quantitative literacy
- f) Information and technology literacy
- g) Collaboration

*3. An Understanding of the Roles of Individuals in Society, through active involvement with diverse communities and challenges, including:*

- a) Civic knowledge and engagement—local and global
- b) Intercultural knowledge and competence
- c) Aesthetic/artistic engagement
- d) Environmental stewardship
- e) Ethical reasoning and actions

*4. Capacity for Integrative Learning, including:*

- a) Synthesis and advanced accomplishment across general and specialized studies, and through coand extra-curricular activities
- b) Application of knowledge, skills, and responsibilities to new settings and progressively more complex problems
- c) Skills for sustained learning and personal development