Discipline	Course Number	Title
Biology	107	BIO 107 05/28/2017-Introduction to Field Biology
Division	Department	Faculty Preparer
Math, Science and Engineering Tech	Life Sciences	David Wooten
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Identify fungi, plant, and animal species common to specific Michigan habitats.

- Assessment Plan

    o Assessment Tool: Exam questions

    o Assessment Date: Fall 2017

    o Course section(s)/other population: All

    o Number students to be assessed: All students

    o How the assessment will be scored: Answer key

    o Standard of success to be used for this assessment: 70% of students will score a 70% or higher on related exam questions.

    o Who will score and analyze the data: Departmental Faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2016, 2015, 2014		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
76	66

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Out of the 76 students enrolled between the three sections assessed, 66 students completed all three assignments used in the three outcomes. Students were dropped from the sampling if they had completed one exam, but not the other or had completed the exams but not done the journal entries for outcome #3. This was only ten students (many of whom did not finish the course, i.e. took one exam and dropped) and allowed me to get a better cross-section of the efficacy of the course for those students who attended and completed all of the course requirements.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course is only taught in the fall semester and only one face-to-face section if offered. Therefore, all students from all sections in all years (2014-2016) were assessed.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The exam used to assess outcome #1 is a mid-term exam consisting of identification questions and short-answer. All short-answer questions have some component of identification. There are 50 questions total and a possible score of 50 pts. Exams are graded by instructor and inputted into Bb. Bb data from all three years was compiled into an Excel spreadsheet and calculated accordingly. All grades from all students assessed from all 3 sections were pooled as one large data set.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

For outcome #1, 49 out of 66 students scored a 70% or higher on the exam, giving a total of 74.2% scoring higher than a 70%. The standard of success calls for 70% of students scoring a 70% or higher, thus the standard of success was met.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Outcome #1 is all about being able to identify different species of fungi, plants, and animals commonly encountered in Michigan habitats. Each class has a topic of focus (i.e. birds or wildflowers) and learning the identification of numerous species within that topic is a significant part of this course and field biology as a discipline. Likewise, the required field guides students are asked to purchase mostly relate to idenfication. Students overall do well in this part of the course and the fact that they met the standard of success is a good indicator that this part of the curriculum is acceptable and at an appropriate level.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Even though the standard of success was met, the midterm exam has essay questions that have a component of identification, but also portions relating to ecology and ecosystem dynamics. Therefore, some part of their exam score relates to information not directly related to identification. In the future, I want to separate out on Bb the part of the exam that deals with identification directly so that I can more accurately assess this outcome.

Outcome 2: Discuss the biodiversity, ecology, and importance of terrestrial and aquatic ecosystems commonly found in Michigan.

- Assessment Plan

    o Assessment Tool: Essay questions on final exam.

    o Assessment Date: Fall 2017

    o Course section(s)/other population: All

    o Number students to be assessed: All students

    o How the assessment will be scored: Departmentally developed rubric

    o Standard of success to be used for this assessment: 70% of students will score a 70% or better on related exam questions.

    o Who will score and analyze the data: Departmental Faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2015, 2016, 2014		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
76	66

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Out of the 76 students enrolled between the three sections assessed, 66 students completed all three assignments used in the three outcomes. Students were dropped from the sampling if they had completed one exam, but not the other or had completed the exams but not done the journal entries for outcome #3. This was only ten students (many of whom did not finish the course, i.e. took one exam and dropped) and allowed me to get a better cross-section of the efficacy of the course for those students who attended and completed all of the course requirements.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course is only taught in the fall semester and only one face-to-face section if offered. Therefore, all students from all sections in all years (2014-2016) were assessed.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The exam used to assess outcome #2 is a final exam consisting of identification questions and short-answer. All short-answer questions directly relate to biodiversity and ecology of either a terrestrial or an aquatic ecosystem. There are 50 questions total and a possible score of 50 pts. Unfortunately, 25 out of the 50 pts. on this exam relate to identification and do not directly relate to the outcome language. This will be addressed in the section regarding areas of improvement. Short-answer questions are generally 3-5 pts. each and are graded by a simple rubric. Exams are graded by instructor and inputted into Bb. Bb data from all three years was compiled into an Excel spreadsheet and calculated accordingly. All grades from all students assessed from all 3 sections were pooled as one large data set.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

For outcome #2, 50 out of 66 students scored a 70% or higher on the exam, giving a total of 75.8% scoring higher than a 70%. The standard of success calls for 70% of students scoring a 70% or higher, thus the standard of success was met.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Overall students do very well on this part of the course. Concepts in biodiversity, ecology, and the significance of these ecosystems in a larger picture are emphasized in each class regardless of topic. Students take notes throughout the class, are given readings, and are asked to apply this information to their individual study sites that relate to their journal entries (outcome #3). The short-answer questions on the final exam relate directly to these topics and cover a broad range of scenarios, ecosystems, species, etc. The fact that students met the standard of success is a good indicator that this part of the curriculum is acceptable and at an appropriate level.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Even though the standard of success was met, the final exam has identification questions (outcome #1) in addition to questions relating to ecology and ecosystem dynamics. Therefore, some part of their exam score relates to information not directly related to biodiversity and ecology. In the future, I want to separate out on Bb these two parts of the exam so that I can more accurately assess this outcome.

Outcome 3: Compare and contrast the seasonal changes (both biotic and abiotic) of a specified natural area of study throughout the course of the semester.

- Assessment Plan

    o Assessment Tool: Journal entries

    o Assessment Date: Fall 2017

    o Course section(s)/other population: All

    o Number students to be assessed: All students

    o How the assessment will be scored: Departmentally developed rubric

    o Standard of success to be used for this assessment: 70% of students will score a 70% or higher on their final field journal grade.

    o Who will score and analyze the data: Departmental faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2015, 2016, 2014		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
76	66

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

Out of the 76 students enrolled between the three sections assessed, 66 students completed all three assignments used in the three outcomes. Students were dropped from the sampling if they had completed one exam, but not the other or had completed the exams but not done the journal entries for outcome #3. This was only ten students (many of whom did not finish the course, i.e. took one exam and dropped) and allowed me to get a better cross-section of the efficacy of the course for those students who attended and completed all of the course requirements.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course is only taught in the fall semester and only one face-to-face section if offered. Therefore, all students from all sections in all years (2014-2016) were assessed.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Field journals are used to assess outcome #3. Students are required to visit a selected location each week throughout the semester and record data relating to species identification, seasonal habitat change, ecosystem dynamics, and natural history observations. Each entry requires abiotic seasonal data (date, time, temp., precipitation, overall conditions), as well as those biotic factors previously mentioned. Illustrations and/or pictures are required for each journal entry as well. Each entry is worth 10 pts and is graded by a simple rubric based on minimum requirements of abiotic and biotic data, as well as quality of entry information. A total of 12 entries are required, thus 120 pts. total.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

> Met Standard of Success: <u>Yes</u>
>
> For outcome #3, 60 out of 66 students scored a 70% or higher on their total journal entry points, giving a total of 90.9% scoring higher than a 70%. The standard of success calls for 70% of students scoring a 70% or higher, thus the standard of success was met.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

> This is undoubtedly the strongest part of the course. Students thoroughly enjoy this assignment and invest a significant amount of time and energy into their journal entries. These entries are complicated and have strict guidelines to receive full credit. Often, I get more than enough material with each entry and students continue with their journals after the course has transpired. Given the high outcome success (90.9%), I feel that this a good indicator that this part of the curriculum is acceptable and at an appropriate level.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

> Even though this part of the course is strong, I can make the rubric more defined/clear and offer students samples of entries that are acceptable. At this point, outcome #1 and outcome #2 require more attention and improvement.

II. Course Summary and Action Plans Based on Assessment Results

1. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

> Overall the needs of BIO107 students are being met. Three major areas (outcomes) of content are required: identification, biodiversity & ecology, and individual observations on seasonal change via field journals. All three met their standard of success. However, outcomes #1 and #2 can be more accurately assessed if the exam portions relating to each outcome topic are separated out on Bb. In the future, I can further make the assessment more accurate by not dropping those students who did not complete all the necessary assignments for all three outcomes, but independently assess different number cohorts for each outcome. Also, even though the standard of 70% was met, outcomes #1 and #2

were not as high (74.2% and 75.8% respectively) as compared to outcome #3 and therefore they may warrant more attention from a pedagogical standpoint.

2. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

This information will be submitted in a course assessment report and shared with the biology faculty at a future departmental meeting.

3.
Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	Midterm and final exam scores will be graded separately on Bb so that portions relating to identification (outcome #1) and biodiversity/ecology (outcome #2) can be more accurately assessed.	Midterm and final exam scores on Bb that were used for this assessment are currently grouped into one grade. However, the outcome language requires that these be separated to splice apart the part of that grade that related to each outcome.	2017

4. Is there anything that you would like to mention that was not already captured?

5.

III. Attached Files

Assessment Data BIO107
Assessment Rubrics

Faculty/Preparer:	David Wooten	**Date:** 06/09/2017
Department Chair:	Anne Heise	**Date:** 06/12/2017
Dean:	Kristin Good	**Date:** 06/15/2017
Assessment Committee Chair:	Michelle Garey	**Date:** 08/31/2017