Discipline	Course Number	Title
Environmental Science	105	ENV 105 09/26/2017-Introduction to Environment and Society
Division	Department	Faculty Preparer
Math, Science and Engineering Tech	Physical Sciences	Suzanne Albach
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Recognize and identify introductory principles and concepts involving the relationships between individuals, societies and the environment.

- Assessment Plan

    - Assessment Tool: Departmental Exams

    - Assessment Date: Fall 2016

    - Course section(s)/other population: Random selected sample based on 50% of the students in each section offered.

    - Number students to be assessed: 50% from each section offered.

    - How the assessment will be scored: Multiple choice questions will be scored using the answer key. Essay and short answer questions will be scored using a departmentally-developed rubric.

    - Standard of success to be used for this assessment: Students will score an overall average score of 72.5% or better on each assessment question.

    - Who will score and analyze the data: Appropriate environmental science faculty will assess the data.

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)
	2017	2017

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

# of students enrolled	# of students assessed

131	114

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.

    Seventeen students were excluded from this assessment for various reasons, including withdrawal and failure to complete the semester (stopped attending).

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.

    Six sections were included, which represents all four sections that ran in Winter 2017 and the two sections that ran during Spring/Summer 2017. The Winter 2017 sections included 15-week, full-term sections that ran late-morning until early evening. The Spring/Summer 2017 sections were shortened-terms, running 10 and 12 weeks, with the former running in the evening and the latter running in the late morning.

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

    The current master syllabus for this course states that we will use 50% of the students from each section offered over these two terms, with students scoring an overall average score of 72.5% or better on the departmental exam. Multiple-choice questions were assessed using an answer key and short answer and essay questions were scored using departmentally-developed rubrics. Again, all students that finished the semester were included, and all questions from the department exam were included in this assessment.

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

    Our data shows that these students achieved an overall average score of 85.8% on Assessment (Exam) One, 88.3% on Assessment (Exam) Two, 91.4% on Assessment (Exam) Three, and 90.3% on Assessment (Exam) Four. Students from the Winter 2017 sections scored an average of 86.5%, 88.1%, 91.8%, and 89.3% on the four exams, respectively. Students from the Summer 2017 shorter-term sections scored an average of 84.3%, 88.8%, 90.6%, and 92.2% on the four exams, respectively. There was no appreciable difference noticed between times of classes or length of term.

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

> Students did very well overall on the exams and the data shows that students scored an overall average of 85.8% on Exam 1, 88.3% on Exam 2, 91.4% on Exam 3, and 90.3% on Exam 4. Regardless of the length of the course, the semester, or even times of day, we found consistent results that showed students were meeting our standard of success.

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.

> While we did meet our standard of success, it would be helpful to obtain and compare data on which specific questions students struggled with. Identifying any common areas would allow us to see where instruction can be further emphasized to improve the overall success rate for that material.

Outcome 2: Apply appropriate principles and concepts to analyze and interpret data such as maps, charts, diagrams, readings and graphs.

- Assessment Plan

    o Assessment Tool: Departmental Exams

    o Assessment Date: Fall 2016

    o Course section(s)/other population: Random selected sample based on 50% of the students in each section offered.

    o Number students to be assessed: 50% from each section offered.

    o How the assessment will be scored: Multiple choice questions will be scored using the answer key. Essay and short answer questions will be scored using a departmentally-developed rubric.

    o Standard of success to be used for this assessment: Students will score an overall average score of 72.5% or better on each assessment question.

    o Who will score and analyze the data: Appropriate environmental science faculty will assess the data.

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)
	2017	2017

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

# of students enrolled	# of students assessed
131	114

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.

Seventeen students were excluded from this assessment for various reasons, including withdrawal and failure to complete the semester (stopped attending).

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.

Six sections were included, which represents all four sections that ran in Winter 2017 and the two sections that ran during Spring/Summer 2017. The Winter 2017 sections included 15-week, full-term sections that ran late-morning until early evening. The Spring/Summer 2017 sections were shortened-terms, running 10 and 12 weeks, with the former running in the evening and the latter running in the late morning.

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

The current master syllabus for this course states that we will use 50% of the students from each section offered over these two terms, with students scoring an overall average score of 72.5% or better on the departmental exam. Multiple-choice questions were assessed using an answer key and short answer and essay questions were scored using departmentally-developed rubrics. Again, all students that finished the semester were included, and all questions from the department exam were included in this assessment.

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

Our data shows that these students achieved an overall average score of 85.8% on Assessment (Exam) One, 88.3% on Assessment (Exam) Two, 91.4% on Assessment (Exam) Three, and 90.3% on Assessment (Exam) Four. Students taking the Winter 2017 sections scored an average of 86.5%, 88.1%, 91.8%, and 89.3% on the four exams, respectively. Students taking the Summer 2017 shorter-term sections scores an average of 84.3%, 88.8%, 90.6%, and 92.2% on the four

exams, respectively. There was no appreciable difference noticed between times of classes or length of term.

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

Students did very well overall on the exams and the data shows that students scored an overall average of 85.8% on Exam 1, 88.3% on Exam 2, 91.4% on Exam 3, and 90.3% on Exam 4. Regardless of the length of the course, the semester, or even times of day, we found consistent results that showed students were meeting our standard of success.

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.

While we did meet our standard of success, it would be helpful to obtain and compare data on which specific questions students struggled with. Identifying any common areas would allow us to see where instruction can be further emphasized to improve the overall success rate for that material.

While the exam results are one method, another useful means to ensure students are meeting our standard of success for this outcome would be to include data from the activities completed in this course. When we look at this data (see attached), we find that students overall scored an average of 98.3% on Activity One, 83.2% on Activity Two, 84.9% on Activity Three, 88.3% on Activity Four, 88.4% on Activity Five, 88.8% on Activity Six, 79.3% on Activity Seven, 71.5% on Activity Eight, 82.6% on Activity 9, 81.7% in Activity 10, 92.3% in Activity 11, and 92.3% in Activity 12. The percentages do include zeroes, for students that did not complete the assignments. Of the 114 students assessed, 2 missed Activity One, 11 missed Activity Two, 12 missed Activity Three, 8 missed Activity Four, 10 missed Activity Five, 8 missed Activity Six, 16 missed Activity Seven, 28 missed Activity Eight, 13 missed Activity Nine, 17 missed Activity Ten, 7 missed Activity 11, and 9 missed Activity 12.

Activities are sometimes completed in class, and sometimes completed for homework. The purpose of the activities is to provide students with a chance to apply appropriate principles and concepts to analyze and interpret data in the course. So, the completion of these activities is important to helping the students learn the concepts covered in class. Across the sections assessed, we found that an average of 10.2% of assignments were not completed, overall. Comparing semesters, we found that winter sections had a 9.7% non-completion rate and summer sections had a 11.4% non-completion rate. Because the percents of non-completion are very close, we do not believe that the length of term is a huge factor. Instead, more analysis should be done on the individual assignments to see why certain assignments, like Activity 8 (see attached) had such a high non-

completion rate compared to other assignments. This could be due to the fact that students needed to attach images, or perhaps they were not fully understanding the assignment. It could be due to the time of the semester (mid-terms). Instructors should be aware of this, and other assignments that have shown low completion rates, to try to improve the completion rate.

Outcome 3: Write a research paper based on an environmental topic covered in this course.

- Assessment Plan

    o Assessment Tool: Research Paper

    o Assessment Date: Fall 2016

    o Course section(s)/other population: Random selected sample based on 50% of the students in each section offered.

    o Number students to be assessed: 50% from each section offered.

    o How the assessment will be scored: Essay will be scored using a departmentally-developed rubric.

    o Standard of success to be used for this assessment: 75% of students will score a 2.5 (between acceptable and good) or above on a rubric scale of not acceptable (1), acceptable (2), good (3), and exemplary (4).

    o Who will score and analyze the data: Appropriate environmental science faculty will assess the data.

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)
	2017	2017

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

# of students enrolled	# of students assessed
131	114

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.

Seventeen students were excluded from this assessment for various reasons, including non-attendance, withdrawal, or not completing the items included in the assessment.

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.

Six sections were included, which represents all four sections that ran in Winter 2017 and the two sections that ran during Spring/Summer 2017. The Winter 2017 sections included 15-week, full-term sections that ran late-morning until early evening. The Spring/Summer 2017 sections were shortened-terms, running 10 and 12 weeks, with the former running in the evening and the latter running in the late morning.

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

The current master syllabus for this course states that we will use 50% of the students from each section offered over these two terms, with 75% of students scoring a 2.5 (between acceptable and good) or above on a rubric scale of not acceptable (1), acceptable (2), good (3), and exemplary (4). Because individual rubrics were not saved after they were returned to the students, assessing the research papers as defined in the master syllabus was not possible. Instead, we looked at the overall average percentage earned on these papers over the six sections. To compare, we calculated that achieving at least 2.5 points out of 4 points equates to 62.5%, so we looked at course data (see attached document) to determine the individual course averages, the term averages, and the overall average for all sections within these two terms, and for all students assessed.

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

The overall average on the research paper assignment for all sections (see attached document) was 77.5%. And, I also looked at semester averages (see attached document) and found the average score for Winter 2018 was 78% and the average score for Spring/Summer 2018 was 76.7%. So, there was no appreciable difference between terms, or courses with different lengths. We also looked at individual sections, with averages across the six sections as 75.2%, 66.6%, 80.6%, 89.4%, 72.1%, and 81.4%. It is worth noting that these averages include zeroes, where six students of the 114 total assessed students did not complete the research paper. Removing these zeroes brings the overall average to 81.9%. In either measure, we found the students met this measure of success.

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

Students did very well overall on the research paper assignment and the data shows that students scored an overall average of 77.5%, showing that students were meeting our standard of success. In comparing the longer terms of the winter semester to the shorter terms of the summer semester, our data showed the winter term students obtained an overall average of 78%, while the shorter-term students in the summer sections scored an overall average of 76.7%.

It is worth pointing out that these numbers are skewed lower because there were six students that did not complete the research paper assignment. When we take those zeroes out, we find an overall average of 81.9%, with a winter semester average of 81.1%, and a summer semester average of 83.6%.

Even with the zeroes in place, we still found the data showing that we met this standard of success, but removing those zeroes gives us a better look at the success rate for those students that completed the paper.

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.

We actually have done quite a bit since the course was introduced to improve student success on the research paper assignment, and the success rates are supporting these efforts. For example, we have added several "check points" to keep students on track. Students are required to submit their research paper topic as a first step, then the course concepts covered and outline as a second step, and then a draft paper, all by specified dates. In addition, we have included sample copies of the research paper, guidelines to research paper writing, and posted information for use of the WCC Writing Center. All of these efforts have significantly increased our student success rates on this outcome.

To continue to improve upon this success rate, it would be helpful to keep copies of the graded rubrics to compare strengths and weaknesses within this paper. Identifying the specific weaknesses in this way can help us to find more resources and methods to improve any areas where we find students falling short.

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, we are very happy that students are meeting all of the course objectives and outcomes. The assessment process really shows us that more information is needed on specific areas, such as looking more closely at the rubric data for the research papers, as well as taking another look at assignments with low

completion rates. In doing so, we can ascertain where more instruction may be needed, or where directions on these assignments can be improved.

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

The summary report with data has already been sent to all the faculty teaching this course.

3.

Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	Outcome two should be changed to be measured by both the departmental exams as well as using data from the course assignments.	The assignments are an integral part of applying the concepts learned in class and should be analyzed as they directly relate to the ultimate success of this outcome, as measured by the departmental exams.	2018
Assessment Tool	Rather than viewing the overall averages for exams, an item analysis of the common test questions will be utilized for the next assessment report.	By looking at individual common exam questions, we will be better able to identify specific areas of weakness or exam questions that might benefit from being revised.	2019
Assessment Tool	For the next assessment, instructors will be required to keep copies of individual rubrics for the research paper (Outcome 3).	By analyzing the individual student rubrics, we can better identify and address any areas of weakness, rather than relying on overall averages to determine the success of this outcome.	2019

Course Assignments	Directions for assignments with lower participation rates will be analyzed to determine if improving the language will help improve completion rates. In addition, the assignments showing lower participation rates will be given more time for in-class review of that assignment to allow students to have a better understanding of the directions.	It is our hope that these modifications will help increase the completion rate for all assignments, since we believe that these assignments play an integral role in understanding and applying the course material and objectives.	2018

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

> Big thanks go out to Robert Powell and Steven Barone, part-time instructors that taught the sections assessed in this report, for their help in obtaining the data for this report!

III. Attached Files

Course Data
Research Paper Rubric
Sample Activity
Sample Assessment (Exam) Questions
Activity 8

Faculty/Preparer: Suzanne Albach **Date:** 09/28/2017
Department Chair: Kathleen Butcher **Date:** 10/05/2017
Dean: Kristin Good **Date:** 10/11/2017
Assessment Committee Chair: Michelle Garey **Date:** 11/28/2017