**Course Assessment Report**
**Washtenaw Community College**

| Discipline | Course Number | Title |
|---|---|---|
| Environmental Science | 101 | ENV 101 02/23/2023-Environmental Science I |
| College | Division | Department |
| | Math, Science and Engineering Tech | Physical Sciences |
| Faculty Preparer | | Smita Malpani |
| Date of Last Filed Assessment Report | | 08/03/2016 |

**I. Review previous assessment reports submitted for this course and provide the following information.**

1. Was this course previously assessed and if so, when?

   Yes

   3/18/2019

2. Briefly describe the results of previous assessment report(s).

   Students met the standard of success for all outcomes. There were areas of weakness that were identified, including reading and interpreting graphs.

3. Briefly describe the Action Plan/Intended Changes from the previous report(s), when and how changes were implemented.

   The assessment report identified analysis of graphs and visual data as an important area to be strengthened. Based on the assessment report, ENV 101 now has a new learning outcome on reading graphs.

**II. Assessment Results per Student Learning Outcome**

Outcome 1: Recognize and identify introductory principles and concepts from the environmental sciences, including geology, biology and chemistry, as well as the environmental issues and concerns associated with each.

- Assessment Plan
  - Assessment Tool: Departmental Exams
  - Assessment Date: Winter 2022

- Course section(s)/other population: All sections
- Number students to be assessed: All students
- 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: 70% of the students will score an average of 72.5% on the exams. An item analysis of outcome-related questions will be done to identify areas of strength and weakness.
- 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) |
|---|---|---|
| 2022 | | |

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

| # of students enrolled | # of students assessed |
|---|---|
| 226 | 191 |

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.

| |
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| All students that completed assignments in Blackboard were evaluated using the Goals tool in Blackboard. It may be that some students withdrew or did not complete assessment questions. |

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.

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| All students in all formats were assessed. |

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

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| All students were assessed by applying the Goals tool in Blackboard to departmental exams. The standard of success was that 70% or more of students would score 70% or better on departmental exam questions that correspond with each outcome. |

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 |
| --- |
| Students met the standard of success for this outcome. 88% of students (169/191) scored 70% or better on the assessment questions. |

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

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| On average, 70% of students got 10.7 out of 12 questions correct in each section. |

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.

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| One question related to evolution seemed to give students a bit of trouble. Instructors may need to emphasize the mechanism by which natural selection occurs- through advantageous traits that allow for increased reproduction. |

Outcome 2: Solve environmental problems using appropriate principles and concepts from the fields of natural, life and social sciences.

- Assessment Plan
    - Assessment Tool: Departmental Exams
    - Assessment Date: Winter 2022
    - Course section(s)/other population: All sections
    - Number students to be assessed: All students
    - 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: 70% of the students will score an average of 72.5% on the exams. An item analysis of outcome-related questions will be done to identify areas of strength and weakness.
    - 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) |
|---|---|---|
| 2022 | | |

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

| # of students enrolled | # of students assessed |
|---|---|
| 226 | 191 |

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.

All students that completed assignments in Blackboard were evaluated using the Goals tool in Blackboard. It may be that some students withdrew or did not complete assessment questions.

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.

All students in all formats were assessed.

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

All students were assessed by applying the Goals tool in Blackboard to departmental exams. The standard of success was that 70% or more of students would score 70% or better on departmental exam questions that correspond with each outcome.

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 |
|---|
| Students met the standard of success for this outcome. 90% of students (171/190) scored 70% or better on the assessment questions. |

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

On average, 11.1 out of 12 questions met the standard of success for each section (meaning 70% of students got the question correct).

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.

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| One question related wildlife/ habitat corridors seemed to give students some trouble. Instructors may want to emphasize conservation strategies like wildlife corridors to students. There are a number of different strategies presented- it may just be a matter of highlighting this one. |

Outcome 3: Construct and interpret maps, charts, diagrams and graphs.

- Assessment Plan
    - Assessment Tool: Departmental Exams
    - Assessment Date: Winter 2022
    - Course section(s)/other population: All sections
    - Number students to be assessed: All students
    - 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: 70% of the students will score an average of 72.5% on the exams. An item analysis of outcome-related questions will be done to identify areas of strength and weakness.
    - 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) |
|---|---|---|
| 2022 | | |

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

| # of students enrolled | # of students assessed |
|---|---|
| 226 | 191 |

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.

| |
|---|
| All students that completed assignments in Blackboard were evaluated using the Goals tool in Blackboard. It may be that some students withdrew or did not complete assessment questions. |

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.

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|---|
| All students in all formats were assessed. |

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

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|---|
| All students were assessed by applying the Goals tool in Blackboard to departmental exams. The standard of success was that 70% or more of students would score 70% or better on departmental exam questions that correspond with each outcome. |

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.

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| Met Standard of Success: Yes |
| Students met the standard of success for this outcome. 74% of students (142/191) scored 70% or better on the assessment questions. |

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

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| On average, 7.4 out of 9 questions met the standard of success for each section (meaning 70% of students got the question correct). |

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.

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| Of the three outcomes, this one seems to be the one where students stumbled the most. In two sections, students didn't meet the standard of success for this outcome. In particular students had trouble interpreting a non-linear graph. We do give practice on how to interpret graphs like this in labs, but may need to give more time and explicit instruction. |

**III. Course Summary and Intended Changes Based on Assessment Results**

1. Based on the previous report's Intended Change(s) identified in Section I above, please discuss how effective the changes were in improving student learning.

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| We have made a concerted effort to give more explicit instruction on interpreting graphs and trends and experimental design. Students learning in this area have improved- though it's only possible to know that anecdotally since the third outcome on interpreting visual data is a new outcome. We do want to continue to improve our teaching on graphs and visual data. |

2. 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?

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| This course is meeting the needs of students. It's now fully transferrable to UMich as well as EMU. There are some areas where more explicit instruction can help students be more thoughtful and accurate in their work, but overall we are delivering a lot of instruction on the really big challenges facing our world- climate change, biodiversity loss, social justice. Students come to us with remarkably little knowledge on these topics from high school- and leave our classes much more informed and capable of critical analysis. |

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

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| I've already emailed faculty the results of the assessment and shared ideas for more explicit instruction. I'm also considering how to amend labs to be even more clear about how to interpret non-linear data.<br><br>Our instructors need access to the NY Times to share graphs with students regularly, and I am in touch with the library to see how to make that happen. |

4. Intended Change(s)

| Intended Change | Description of the change | Rationale | Implementation Date |
|---|---|---|---|
| Course Assignments | We'll try and sharpen labs to be even more pointed in describing graphs. Also, we'll try to introduce a lot of different kinds of labs- hopefully if we can get regular access to the NY Times series on | Interpreting graphs is the outcome that is most in need of support- and it's also a super important skill for students across fields. | 2023 |

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|---|---|---|---|
| | graphs for educators. | | |

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

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| 6. |

**III. Attached Files**

Assessment data
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|---|---|---|
| **Faculty/Preparer:** | Smita Malpani | **Date:** 03/11/2023 |
| **Department Chair:** | Suzanne Albach | **Date:** 03/13/2023 |
| **Dean:** | Tracy Schwab | **Date:** 03/13/2023 |
| **Assessment Committee Chair:** | Shawn Deron | **Date:** 03/30/2023 |

**Course Assessment Report**
**Washtenaw Community College**

| Discipline | Course Number | Title |
|---|---|---|
| Environmental Science | 101 | ENV 101 03/18/2019-Environmental Science I |
| Division | Department | Faculty Preparer |
| Math, Science and Engineering Tech | Physical Sciences | Smita Malpani |
| Date of Last Filed Assessment Report | | |

**I. Review previous assessment reports submitted for this course and provide the following information.**

1. Was this course previously assessed and if so, when?

   Yes

   Assessed in 08/2015.

2. Briefly describe the results of previous assessment report(s).

   The assessment determined that outcome goals were being met and did not recommend any changes to the master syllabus.

3. Briefly describe the Action Plan/Intended Changes from the previous report(s), when and how changes were implemented.

   No changes were recommended.

**II. Assessment Results per Student Learning Outcome**

Outcome 1: Recognize and identify introductory principles and concepts from the environmental sciences, including geology, biology and chemistry, as well as the environmental issues and concerns associated with each.

- Assessment Plan
  - Assessment Tool: Departmental Exams
  - Assessment Date: Winter 2012
  - 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) |
|---|---|---|
| 2018 | | |

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

| # of students enrolled | # of students assessed |
|---|---|
| 156 | 78 |

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.

| |
|---|
| The master syllabus stipulates tracking 50% of students. |

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.

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|---|
| All sections are face to face on campus and all sections were assessed. For my sample, I selected the first 50% of each section alphabetically by last name. |

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

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| The tool relied on the departmental multiple choice exams and two department short answer questions that mapped to outcomes 1 and 2. We used a weighted averaged (giving more weight to short answer questions) to calculate the scores for the outcomes. We used 8 multiple choice questions from exam 1, 8 from exam 2, 5 from exam 3, and 4 from exam 4. We also used two short answer questions- one on exam 2 and one on exam 4. I have included item analysis for each question that is mapped to specific outcomes and objectives. |

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 |
| --- |
| To meet goals for both outcomes, 50% of students needed to score 72.5% or higher on assessment questions. For outcome 1, students scored 87%. Therefore, students exceeded standards for learning outcomes. However, from the item analysis, there were several individual questions where students did not meet the standard of success. |

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

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| --- |
| Students met learning goals for outcome 1. They were particularly strong in understanding current environmental issues and challenges such as waste management, fossil fuel use and climate change. |

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.

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| --- |
| There was one question where learning goals for Outcome 1 were not met. On a question about the control of an experiment, students did not demonstrate a strong grasp of how to design a control in an experiment. In the future, instructors may want to emphasize design of scientific experiments and the different parts of an experiment - including hypothesis, control, independent and dependent variables, data and conclusion. |

Outcome 2: Apply appropriate principles and concepts to solve problems, as well as construct and interpret maps, charts, diagrams and graphs.

- Assessment Plan
    - Assessment Tool: Departmental Exams
    - Assessment Date: Winter 2012
    - 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) |
|---|---|---|
| 2018 | | |

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

| # of students enrolled | # of students assessed |
|---|---|
| 156 | 78 |

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.

| |
|---|
| The master syllabus stipulates tracking 50% of students. |

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.

| |
|---|
| All sections are face to face on campus and all sections were assessed. For my sample, I selected the first 50% of each section alphabetically by last name. |

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

| |
|---|
| The tool relied on departmental multiple choice exams and two department short answer questions that mapped to outcomes 1 and 2. We used a weighted averaged (giving more weight to short answer questions) to calculate the scores for the outcomes. We used 8 multiple choice questions from exam 1, 8 from exam 2, 5 from exam 3, and 4 from exam 4. We also used two short answer questions- one on exam 2 and one on exam 4. I have included item analysis for each question that is mapped to specific outcomes and objectives. |

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 |
| --- |
| To meet goals for both outcomes, 50% of students needed to score 72.5% or higher on assessment questions. For outcome 2, students scored 82%. Therefore, students exceeded standards for learning outcomes. However, from the item analysis, there were several individual questions where students did not meet the standard of success. |

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

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| Students met learning goals for outcome 2. In general, students showed a good command of interpreting graphs such as determining biome with temperature and precipitation data. |

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.

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| There were two assessment questions for which students did not meet learning goals for outcome 2. The first had to do with identifying the reasons for increasingly low-grade copper ore. It may be that instructors could spend a bit more time talking about mining precious metals and scarcity. The second question had to do with interpreting data on energy saved from recycling. Across the board, students did not answer the question correctly. It may be that students didn't understand the question as it was asked - because the data given is relatively straightforward. Instructors may want to try to familiarize students with a range of different kinds of graphs and data so they are able to analyze and respond to various sorts of questions about what the "take home message" is from quantitative data. |

**III. Course Summary and Intended Changes Based on Assessment Results**

1. Based on the previous report's Intended Change(s) identified in Section I above, please discuss how effective the changes were in improving student learning.

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| There were no recommended changes from the previous assessment. However, the course has grown from 2 sections to 7 since the last assessment. We were happy to note that we were still able to meet learning outcome goals even after the growth of the team of instructors. Therefore, we are doing relatively well in offering unified instruction. |

2. 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?

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| I do think the course is meeting the needs of students well. Climate change, in particular, is the biggest emergency of our time. We thoroughly instruct students in this area and have changed our class so we devote more lecture time to the issue. I was surprised that students had trouble with the concept of a control in a scientific experiment. That is a basic concept that we cover in some detail. It could be that they didn't understand the multiple choice question. For the next assessment, we'll use a short answer question that presents scientific experiment design and may be a more straightforward assessment of whether students understand the role of a control in an experiment. |

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

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| This semester, I will share the results of the assessment data via email with our ENV instructors, paying particular attention to areas of improvement. In addition, I will let them know to anticipate collecting data on short answer questions that assess understanding of experimental design. |

4.

Intended Change(s)

| Intended Change | Description of the change | Rationale | Implementation Date |
|---|---|---|---|
| Other: Assessment tool and lesson plan | We will change the assessment tool for undertstanding experiemental design. In addition, we will introduce additional practice on reading graphs and charts - drawing on the NYTimes series "What's Going On In This Graph?". | We think changing the assessment tool will better capture student understanding of experimental design. Additional practice interpreting data should help student's better analyze environmental graphic and quantitative data. | 2019 |

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

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|---|
| I have nothing else to add. |

**III. Attached Files**

ENV101 2019 Assessment

| | | | |
|---|---|---|---|
| **Faculty/Preparer:** | Smita Malpani | **Date:** | 03/20/2019 |
| **Department Chair:** | Suzanne Albach | **Date:** | 03/27/2019 |
| **Dean:** | Brandon Tucker | **Date:** | 04/01/2019 |
| **Assessment Committee Chair:** | Shawn Deron | **Date:** | 05/17/2019 |

**Course Assessment Report**
**Washtenaw Community College**

| Discipline | Course Number | Title |
|---|---|---|
| Environmental Science | 101 | ENV 101 08/19/2015-Environmental Science I |
| Division | Department | Faculty Preparer |
| Math, Science and Engineering Tech | Physical Sciences | Emily Thompson Ph.D. |
| Date of Last Filed Assessment Report | | |

**I. Assessment Results per Student Learning Outcome**

Outcome 1: Recognize and identify introductory principles and concepts from the environmental sciences, including geology, biology and chemistry, as well as the environmental issues and concerns associated with each.

- Assessment Plan
    - Assessment Tool: Departmental Exams
    - Assessment Date: Winter 2012
    - 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) |
|---|---|---|
| | | 2015 |

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

| # of students enrolled | # of students assessed |
|---|---|

| | |
|---|---|
| 31 | 28 |

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.

| |
|---|
| Assessed all students enrolled in course. |

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.

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|---|
| All students enrolled in course were assessed. |

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

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|---|
| Members of our department worked together to determine which graded items were included in the assessment and to write the departmental rubrics for scoring the project/paper/presentation assignment. Specific questions in the first three of the four course exams were assessed. Overall, we assessed all 28 students on: 9 multiple choice questions from Exam 1, 8 multiple choice questions from Exam 2, one project/paper/presentation, 8 multiple choice questions from Exam 3 and one short answer question from Exam 3. There were 2 questions on each exam that assessed learning objectives for the lab. |

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.

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|---|
| Met Standard of Success: No |
| For Outcome 1, students met the goal for 11 of 14 items. We interpret this to mean that students have successfully mastered introductory principles and concepts. |

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

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|---|
| For Outcome 1, students met goal on 11 of 14 items. We interpret this to mean that we are successful at helping students master the material. |

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.

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| For Outcome 1, students did not meet goal on 3 of 14 items, with one item missing goal on each of the three exams. We recommend that instructors do a mini- |

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| assessment after each exam to determine which questions were answered correctly by fewer than 72.5% of students. Instructors can then find a way to allow students to master the material, perhaps by going over it again in class after the exam. |

Outcome 2: Apply appropriate principles and concepts to solve problems, as well as construct and interpret maps, charts, diagrams and graphs.

- Assessment Plan
    - Assessment Tool: Departmental Exams
    - Assessment Date: Winter 2012
    - 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) |
|---|---|---|
| | | 2015 |

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

| # of students enrolled | # of students assessed |
|---|---|
| 31 | 28 |

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.

| |
|---|
| All students enrolled in the course were assessed. |

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.

All students enrolled in the course were assessed.

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

Members of our department worked together to determine which graded items were included in the assessment and to write the departmental rubrics for scoring the project/paper/presentation assignment. Specific questions in the first three of the four course exams were assessed. Overall, we assessed all 28 students on: 9 multiple choice questions from Exam 1, 8 multiple choice questions from Exam 2, one project/paper/presentation, 8 multiple choice questions from Exam 3 and one short answer question from Exam 3. There were 2 questions on each exam that assessed learning objectives for the lab.

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: No

Students met the standard of success in 10 of 12 items.

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

For Outcome 2, students met goal on 10 of 12 learning objectives. We interpret this to mean that we are doing a good job helping students master thinking and reasoning skills needed to apply concepts.

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.

Students did not meet goal on 2 of 12 learning objectives, and both were in Exam 3. We think there are two reasons for this.

1) First, we believe that students tend to do worse on their first exam. Our course consists of a biology half and a geology half and the halves are taught in either order. For one section, Exam 3 was their first exam and they had a harder time with one of the questions than did the other section, where Exam 3 was their third exam. We recommend that instructors do a mini-assessment after each exam to determine which questions were answered correctly by fewer than 72.5% of students and find a way to allow students to master the material, perhaps by going over it again in class after the exam.

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| 2) Second, we found that students in all sections had trouble with the short answer questions. We interpret this to mean that our instructors need to help students learn to answer all parts of short answer questions and to always try to answer questions in the hopes of earning partial credit. We hope to provide students with more training and perhaps a study guide to help them learn this skill. |

**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?

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| We were surprised by how well the students did in the project/paper/presentation piece. We are thrilled with this result, and we think it partly has to do with the clearly-written rubric that is given to students and partly to do with good instruction. |

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

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| The summary report with data has already been sent to all the department faculty. |

3. Intended Change(s)

| Intended Change | Description of the change | Rationale | Implementation Date |
|---|---|---|---|
| No changes intended. | | | |

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

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| 5. |

**III. Attached Files**

Assessment Data ENV101
Rubric for Project/paper/presentation
Assessment Summary ENV101

| | | | |
|---|---|---|---|
| **Faculty/Preparer:** | Emily Thompson Ph.D. | **Date:** | 03/16/2016 |
| **Department Chair:** | Kathleen Butcher | **Date:** | 04/26/2016 |
| **Dean:** | Kristin Good | **Date:** | 04/27/2016 |
| **Assessment Committee Chair:** | Michelle Garey | **Date:** | 08/03/2016 |