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| **Semester/Year** | Fall 2019 |
| **Course Prefix** | NSCI |
| **Course Number** | 1040 |
| **Course CRN(s)** | 67890 |
| **Course Title** | Introduction to the Natural Sciences |
| **Instructor Name** | Carrie Jones |
| **Instructor Email** | cbjones@vt.edu |

## For which Core Concept(s) will you be submitting data? Please check each Core Concept that applies. Selected Core Concepts should be consistent with those identified in the official course proposal.

1 - [Discourse](#Discourse)

2 - [Critical Thinking in the Humanities](#CTH)

3 - [Reasoning in the Social Sciences](#RNS)

4 - [Reasoning in the Natural Sciences](#RSS)

5 - [Quantitative and Computational Thinking](#QCT)

6 - [Critique and Practice in Design and the Arts](#CPDA)

7 - [Critical Analysis of Identity and Equity in the United States](#CAIEUS)

## For which Integrative Concept(s) will you be submitting data? Please check each Integrative Concept that applies. Selected Integrative Concepts should be consistent with those identified in the official course proposal.

[Ethical Reasoning](#ethical)

[Intercultural and Global Awareness](#IGA)

## Below are tables for you to report assessment data for each concept addressed in your Pathways course. Tables for concepts not addressed in your course should be left blank. Please scroll through the document until you locate the correct table OR hold down the control (CTRL) button AND use the mouse to click on the appropriate Core Concept(s) or Integrative Concept(s).

## If you select “See Attached Assignment” as a measure for one or more student learning outcomes, please **REMEMBER TO ATTACH** the file(s) when you submit this document.

For assistance with this reporting form or Pathways assessment in general, please contact Molly Hall ([mrhall@vt.edu](mailto:mrhall@vt.edu); 231-5432) or Bethany Bodo ([bbodo@vt.edu](mailto:bbodo@vt.edu); 231-6003) in the Assessment & Evaluation unit in the Office of Academic Decision Support.

Please complete the following table for **REASONING IN THE NATURAL SCIENCES**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Student Learning Outcome** | **Was this student learning outcome measured in your course?** | **Assessment Measure** | **Please give more detail regarding the measure you chose and/or further specify “other” response** | **Assessment Criteria:**  **What criteria did you use to determine whether student performance was Below Competent, Competent, or Above Competent? For example, did you use the Pathways Rubric for this concept?** | **Total Number of Students Assessed** | **Below Competent** | | **Competent** | | **Above Competent** | | **Total Percentage of Students** |
|  | Select from drop down list | Select from drop down list | Enter text description below | Enter text description below | Total Number of Students | Number of Students | Percentage of Students | Number of Students | Percentage of Students | Number of Students | Percentage of Students | Total Percentage |
| 1. Explain the foundational knowledge of a particular scientific discipline. | Measured | Multiple Choice | Nine multiple choice items embedded in the final exam (items 1, 2, 3, 5, 6, 9, 12, 15, 18) | Below Competent: Correctly responding to 5 or fewer items; Competent: Correctly responding to 6 or 7 items; Above Competent: Correctly responding to 8 or 9 items | 25 | 0 | 0.0% | 13 | 52.0% | 12 | 48.0% | 100% |
| 2. Apply principles and techniques of scientific inquiry. | Measured | Multiple Choice | Seven multiple choice items embedded in the final exam (items 4, 7, 8, 10, 11, 17, 19) | Below Competent: Correctly responding to 4 or fewer items; Competent: Correctly responding to 5 items; Above Competent: Correctly responding to 6 or 7 items | 25 | 8 | 32.0% | 11 | 44.0% | 6 | 24.0% | 100% |
| 3. Evaluate the credibility and the use/misuse of scientific information. | Measured | Short Answer | Two short answer questions embedded in the final exam | Below Competent: Score of 6 or below out of 10 total points across the two short answer questions; Competent: Score of 7 or 8 out of 10 total points; Above Competent: Score of 9 or 10 out of 10 total points | 25 | 7 | 28.0% | 8 | 32.0% | 10 | 40.0% | 100% |
| 4. Analyze the reciprocal impact of science and society. | Not Measured | Choose assessment |  |  |  |  |  |  |  |  |  |  |

Use the drop down menu to select the type of student work you used to assess the corresponding SLO. Several commonly used assessment measures are listed, including an "Other" option.

In this column, use the drop down menu to select "Measured" if you assessed the corresponding SLO. If you did not assess a particular SLO, please select "Not Measured."

All student learning outcomes (SLOs) for the core concept are already listed here.

In this column, provide additional information about the student work you used.

In this example, the instructor embedded measures for each SLO into the final exam.

This final column serves as a check that you have entered the data correctly.

For each SLO, add the percentages of students at each competency level and place the value in this column. If it does not equal 100%, please check your calculations.

After you enter the number of students who performed at each competency level, please calculate and enter the percentage of students at each level.

[#Below Competent/#Total Students] x 100

In the above example:

7 students were rated Below Competent on SLO 3. There were 25 students in the class.

[7/25] x 100 = 28%

Use this column to report the total number of students you assessed for each corresponding SLO.

Pathways courses with more than 20 students must report data for a *minimum* of 20 randomly selected students.

Pathways Rubrics have been created to help you assess each SLO independently. This column asks you to provide specific information on how you applied a Pathways Rubric or other criteria you used to determine how many students were Below Competent, Competent, and Above Competent for a particular SLO.

In this example, the instructor used the number of multiple choice items that were answered correctly to determine how many students were Below Competent, Competent, and Above Competent for SLO 1 and SLO 2.

Example Summary: This instructor measured SLO 3 by embedding two short answer questions in the final exam. The instructor decided that students who earned a total score of 6 points or less across the two short answer questions would be determined Below Competent; those students earning a total of 7 or 8 points would be deemed Competent; and those students earning a total of 9 or 10 points would be classified as Above Competent. The instructor assessed 25 students. The instructor reported 7 students (28%) as Below Competent, 8 students (32%) as Competent, and 10 students (40%) as Above Competent for SLO 3. The total shown in the final column indicates that 100% of the 25 students were assessed across all competency levels: [28% + 32% + 40% = 100%].

## Please complete the following table for **ETHICAL REASONING**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Student Learning Outcome** | **Was this student learning outcome measured in your course?** | **Assessment Measure** | **Please give more detail regarding the measure you chose and/or further specify “other” response** | **Assessment Criteria:**  **What criteria did you use to determine whether student performance was Below Competent, Competent, or Above Competent? For example, did you use the Pathways Rubric for this concept?** | **Total Number of Students Assessed** | **Below Competent** | | **Competent** | | **Above Competent** | | **Total Percentage of Students** |
|  | Select from drop down list | Select from drop down list | Enter text description below | Enter text description below | Total Number of Students | Number of Students | Percentage of Students | Number of Students | Percentage of Students | Number of Students | Percentage of Students | Total Percentage |
| 1. Explain and contrast relevant ethical theories. | Not Measured | Choose assessment |  |  |  |  |  |  |  |  |  |  |
| 2. Identify ethical issues in a complex context. | Measured | Direct Observation | Direct observation of each student's final oral presentation rated with the Pathways Rubric for Ethical Reasoning, SLO 2 | Used the Pathways Rubric for Ethical Reasoning, Criteria for SLO 2 | 25 | 3 | 12.0% | 15 | 60.0% | 7 | 28.0% | 100% |
| 3. Articulate and defend positions on ethical issues in a way that is both reasoned and informed by the complexities of those situations. | Measured | Other | Students complete a case study on a current environmental issue rated with the Pathways Rubric for Ethical Reasoning, SLO 3 | Used the Pathways Rubric for Ethical Reasoning, Criteria for SLO 3 | 25 | 6 | 24.0% | 16 | 64.0% | 3 | 12.0% | 100% |

In this column, provide additional information about the student work you used.

In this example, the instructor utilized the final oral presentation to measure SLO 2, and a case study related to a current environmental issue to measure SLO 3.

Use the drop down menu to select the type of student work you used to assess the corresponding SLO. Several commonly used assessment measures are listed, including an "Other" option.

This final column serves as a check that you have entered the data correctly.

For each SLO, add the percentages of students at each competency level and place the value in this column. If it does not equal 100%, please check your calculations.

After you enter the number of students who performed at each competency level, please calculate and enter the percentage of students at each level.

[#Below Competent/#Total Students] x 100

In the above example:

3 students were Below Competent on SLO 2. There were 25 students in the class.

[3/25] x 100 = 12%

Use this column to report the total number of students you assessed for each corresponding SLO.

Pathways courses with more than 20 students must report data for a *minimum* of 20 randomly selected students.

Pathways Rubrics have been created to help you assess each SLO independently. This column asks you to provide specific information on how you applied a Pathways Rubric or other criteria you used to determine how many students were Below Competent, Competent, and Above Competent for a particular SLO.

In this example, the instructor used the Pathways Rubric for Ethical Reasoning to determine how many students were Below Competent, Competent, and Above Competent for SLO 2 and SLO 3.

In this column, use the drop down menu to select "Measured" if you assessed the corresponding SLO. If you did not assess a particular SLO, please select "Not Measured."

All student learning outcomes (SLOs) for the integrative concept are already listed here.

Example Summary: This instructor measured SLO 2 by observing each student’s final oral presentation. The instructor reviewed the Pathways Rubric for Ethical Reasoning and decided to use the rubric to determine whether each student’s performance was Below Competent, Competent, or Above Competent. The instructor assessed 25 students. The instructor reported 3 students (12%) as Below Competent, 15 students (60%) as Competent, and 7 students (28%) as Above Competent for SLO 2. The total shown in the final column indicates that 100% of the 25 students were assessed across all competency levels: [12% + 60% + 28% = 100%].