# General Education Course Data Entry Worksheet

# *An aid for data submission by participating departments to the GEC*

**Natural World**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Program Goal** | | **Course Prefix and number** | | | **Course Name** | | | **Academic Semester** |
| **N: Natural World** | |  | | |  | | |  |
|  | | **Is this an**  **HONORS course?** | | | **Course section number(s)** | | | **Total number of students in the section(s) of the course** |
|  | |  | | |  | | |  |
| **Types of course assessments:**  Please tell us**the assessment methods** you utilized in this course in order for students to demonstrate their competencies for each Student Learning Objective (SLO). We are not asking you for data for all of these methods, we would just like to know what kinds of assessments you assigned to students in this iteration of the course. (Please check all that apply.)  If an objective was not assessed, choose 'none'. | | | | | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | Exam or Quiz objective questions | Exam or Quiz essay questions | Project | Essay, Report, or Written Reflection | Other (describe below) | None (IF not assessed) | | Scientific Method |  |  |  |  |  |  | | Scientific Principles |  |  |  |  |  |  | | Data and Problem Solving |  |  |  |  |  |  | | | | |
| **For the data being reported here:**  Please tell us**the assessment tool method** that was used to collect the data that you are reporting for each Student Learning Objective (SLO) for this course.  If an objective was not assessed, choose 'none'. | | | | | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | Exam or Quiz objective questions | Exam or Quiz essay questions | Project | Essay, Report, or Written Reflection | Other (describe below) | None (IF not assessed) | | Scientific Method |  |  |  |  |  |  | | Scientific Principles |  |  |  |  |  |  | | Data and Problem Solving |  |  |  |  |  |  | | | | |
| **Student Learning Objective** | | | | | Please give a **detailed description of the assessment method** for each **Student Learning Objective**. Be specific. e.g. Data were collected from student responses to an essay question as part of the final exam. OR, e.g. Data were collected from written selections that students submitted in response to the following prompt: | | | |
| **SLO1: Scientific Method**  *The student understands how the scientific method involves experimentation or empirical observations that are used for the development, testing, and application of models, theories, or laws.* | | | | |  | | | |
| **SLO2: Scientific Principles**  *The student demonstrates a broad understanding of scientific principles and theories specific to the discipline, and can explain their origins.* | | | | |  | | | |
| **SLO3: Data and Problem-Solving**  *The student critically evaluates scientific information and/or solves problems using scientific data.* | | | | |  | | | |
| **YOUR SUMMARY OF DATA COLLECTED** | | | | | | | | |
| **Student Learning Objective (SLOs)** | **Levels of competency:**  **How many students demonstrated each level of competency on**  **the assessment method used to collect data.**  Levels of competency are not the same thing as the grade earned on the assignment. Please utilize the rubric on the following page to determine what constitutes “**unsatisfactory**,” “**emerging**,” “**developing**,” “**proficient**,” and “**mastery**” levels of student competency. | | | | | | Please **describe the Use of Results for each Student Learning Objective.** Please be specific. Several sentences are appropriate to give us a detailed look at **how** you plan to use this data to improve student learning in future iterations of the course. ***Please be prepared to submit one student artifact for each level of competency (unsatisfactory, emerging, developing, proficient, mastery) for each of the three SLOs.*** | |
| **Unsatisfactory** | **Emerging** | **Developing** | **Proficient** | **Mastery** | **None \*\*** |  | |
| **SLO 1:**  ***Scientific Method*** |  |  |  |  |  |  |  | |
| **SLO 2:**  ***Scientific Principles*** |  |  |  |  |  |  |  | |
| **SLO 3:**  ***Data and Problem Solving*** |  |  |  |  |  |  |  | |

\*\* students who were registered for the course but, for some reason, did not complete the assessment you are reporting data for, should be included in the “none” column. (*e.g., 4 students did not answer that question on the essay exam, so 4 will go in that column*)

**NATURAL WORLD CURRICULUM**

**RUBRIC OF LEARNING OBJECTIVES (DESIRED OUTCOMES) & COMPETENCIES**

# Program goal: Guide and prompt students to understand the scientific method and

# resulting principles and theories, critically evaluating data to answer

# questions about the natural world.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Learning objectives**  *Desired outcomes* | **Levels of Competency** | | | | |
| **Unsatisfactory** | **Emerging** | **Developing** | **Proficient** | **Mastery** |
| **Scientific Method** | Fails to demonstrate understanding of the scientific method. | Recalls some steps of the scientific method but does not understand how experimentation or empirical observations are used for the development, testing, and application of models, theories, or  laws. | Recalls all steps of the scientific method and begins to offer an explanation of how experimentation or empirical observations are used for the development, testing, and application of models, theories, or  laws. | Accurately explains how experimentation or empirical observations associated with the scientific method are used for the development, testing, and application of models, theories, or laws. | Thoroughly explains and evaluates which results from experimentation or empirical observations are most significant in the development, testing, and application of models, theories, or laws. |
| *The student* |
| *understands how the* |
| *scientific method* |
| *involves* |
| *experimentation or* |
| *empirical* |
| *observations that are* |
| *used for the* |
| *development, testing,* |
| *and application of* |
| *models, theories, or* |
| *laws.* |
| **Scientific Principles** | Fails to | Defines some basic | Accurately | Explains more | Goes beyond |
|  | demonstrate | scientific principles | describes basic | complex scientific | explanation and |
| *The student* | understanding | and theories, with | scientific principles | principles and | synthesizes complex |
| *demonstrates a* | of scientific | some errors in | and theories and | theories as well as | scientific principles and |
| *broad understanding* | principles and | understanding. | able to make some | their origins. | theories with clear |
| *of scientific principles* | theories. |  | connections to their |  | understanding of their |
| *and theories specific* |  |  | origins. |  | origins. |
| *to the discipline, and* |  |  |  |  |  |
| *can explain their* |  |  |  |  |  |
| *origins.* |  |  |  |  |  |
| **Data & Problem-Solving** | Fails to | Begins to recognize | Consistently | Provides an | Critically analyzes |
|  | critically | when scientific | recognizes when | accurate | scientific information |
| *The student critically* | evaluate | information is | scientific | interpretation of | and thoughtfully solves |
| *evaluates scientific* | scientific | either accurate or | information is | scientific | problems using |
| *information and/or* | information | flawed or begins to | either accurate or | information or | scientific data and |
| *solves problems using* | and/or solve | identify the | flawed and | develops solutions | makes intuitive |
| *scientific data.* | problems. | appropriate way to | attempts to develop | to problems with | conclusions from the |
|  |  | use scientific data | solutions to | few errors and | solution. Generalizes |
|  |  | to solve a problem. | problems with some errors in logic | draws reasonable conclusions from | patterns of data to larger systems. |
|  |  |  | or calculations. | the solution. |  |

A **program goal** is a clear statement that expresses what our program will do for students. Each goal is designed to prompt and guide teaching practice and program assessment.

A **student learning objective** is a clear statement about what we expect students to learn or accomplish. Like any type of objective, a student learning objective is a desired outcome.

A **student learning outcome** is the result of a learning process; in other words, it is an actual outcome. To foster assessment of student learning, student learning outcomes must be observable, observed, measurable, and measured. Student learning outcomes can be characterized using an ordinal scale of competency (e.g., unsatisfactory, emerging, developing, proficient, and mastery).

A **competency** is the ability to do something successfully.