# General Education Assessment and Review Form – Natural Science (Group XI, N) 5/22

Please attach/ submit additional documents as needed to fully complete each section of the form.

## I. Course Information

Department: Course Number:   
Course Title:   
Lab Status: With Lab Without Lab   
Type of Request: \*New One-time Only Renew Change Revised w/ assessment Remove   
Course offered: Fall Spring Intermittent Summer Winter Next offered  
\*If course does not exist in the catalog, an [e-curr](https://www.umt.edu/winapps/adminfin/eCurr) form is also required.

### justification for course level

Normally general education courses do not have more than one pre-requisite, are at least 3 credits, and numbered in the 100-300 levels. If the course does not meet these conditions, please provide an explanation. If the course is offered at the 400-level, please explain how it is foundational within the requested perspective.

addITIONAL INFORMATION (FOR oche DATABASE):

In which [MUS Core Category](https://mus.edu/Transfer/MUScore.asp), does this course fit?   
Does the course include content regarding cultural heritage of American Indians?

## II. Endorsement / Approvals

\* Instructor: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_  
 Phone / Email:   
Program Chair: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_  
Dean: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_

\*Form must be completed by the instructor who will be teaching the course. If there are multiple sections or instructors, the form must be completed by the lead instructor or the department chair. It would be helpful for first-time faculty assigned to teach general education courses to be informed of the requirements.

## iii. Description and Purpose

General Education courses must be introductory and foundational within the offering department or within the General Education Group. They must emphasize breadth, context, and connectedness; and relate course content to students’ future lives: See [Preamble](http://umt.edu/facultysenate/archives/minutes/gened/GE_preamble.aspx)

## iv. Criteria

Briefly explain how this course satisfies the criteria for the group.

1. Courses explore a discipline in the natural sciences and demonstrate how the scientific method is used within the discipline to draw scientific conclusions:

1. Courses address the concept of analytic uncertainty and the rigorous process required to take an idea to a hypothesis and then to a validated scientific theory;

1. Lab courses engage students in inquiry-based learning activities where they formulate a hypothesis, design an experiment to test the hypothesis, and collect, interpret, and present the data to support their conclusions.

## v. Student Learning outcomes and assessment

|  |  |  |
| --- | --- | --- |
| learning outcome | Briefly Describe the content taught for each learning outcome | describe how each learning outcome is measured.  Provide specific examples of assignments, rubrics or test questions that directly measure the extent to which students have achieved each learning outcome below. (see [Example](https://www.umt.edu/faculty-senate/documents/forms/GenEd/biob210-sample.pdf#/cm/request/xSGmLlOlmUPRsdcwbbIy).) Attach or provide a web link to relevant assessment materials if applicable. |
| 1.Understand the general principles associated with the discipline(s) studied. |  |  |
| 2.Understand the methodology and activities scientists use to gather, validate and interpret data related to natural process. |  |  |
| 3.Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments. |  |  |
| 4.Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning. |  |  |
| 5.Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences. |  |  |

## vi. Assessment report

**General Education Assessment Report** If this information is not yet available, Section VI.A-D must be completed after the next offering (re-submit the entire form with these sections completed by the curriculum deadline). Your course will be granted provisional status until the report is received. Report not required for one-time-only general education offerings.   
  
**A. Achievement Targets**  
Describe the desirable level of performance for your students, and the percentage of students you expected to achieve this:

**Assessment findings and action plans / use of data**

|  |  |  |
| --- | --- | --- |
| learning outcome | B. Assessment findings **What were the results/findings, and what is your interpretation/analysis of the data?** (Please be detailed, using specific numbers/percentages when possible. Qualitative discussion of themes provided in student feedback may also be reported. Be sure to use data that connects to the specific Learning Goals (NOT overall course grades). The most useful data indicates where students’ performance was stronger and where it was weaker. Attach charts/tables if applicable. | C. Assessment Action Plans / use of Data Given your students’ performance the last time the course was offered, how will you modify the course to enhance learning? You can also address how the course could be improved, and what changes in the course content or pedagogy you plan to make, based upon the findings. Please include a timeframe for the changes. |
| 1.Understand the general principles associated with the discipline(s) studied. |  |  |
| 2.Understand the methodology and activities scientists use to gather, validate and interpret data related to natural process. |  |  |
| 3.Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments. |  |  |
| 4.Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning. |  |  |
| 5.Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences. |  |  |

## vii. Syllabus and Submission

Please submit syllabus in a separate file with the completed and signed form to the Faculty Senate Office, UH 221. The learning outcomes for the Natural Science Group **must** be included on the syllabus. An electronic copy of the original signed form is acceptable.