

2018 – 2019/2019 – 2020 General Education Executive Summary

Department: Natural & Computer Sciences Date: 5/20/20
Members involved with analysis of artifacts: Robert Hermann, Brent Royuk, John Jurchen, Kristy Jurchen, Marcus Gubanyi, Kent Einspahr, Dennis Brink, Gregg Einspahr, Kyle Johnson, Connie Callahan, Jen Freund.
See General Education Assessment Plan for: a) Learning Outcome; b) Background; c) Question(s); d) Methodology
Analysis of artifacts: 1). PERFORMANCE CRITERIA* - <i>How was data analyzed? (attach rubrics/scoring tools if used).</i> Artifacts were analyzed according to the attached rubric. Rubrics were sent to the faculty beforehand for review, and the departmental faculty met together and scored the artifacts through discussion and consensus.
Summary of RESULTS*: 1). <i>Restate the assessment question(s) (from the Assessment plan):</i> Can students apply scientific analysis to “real world” situations to arrive at an appropriate response? (Specifically: can students identify the key idea or concept underlying a problem? Can students correctly identify the knowns and unknowns of the problem? Can students apply appropriate methods to solve a problem?) 2). <i>Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.</i> Overall 26 artifacts were assessed, 26 from Phys 109 and 10 from CS 131. (Chem 115 planned to provide artifacts, but they would have been questions from the final exam and due to the online learning environment the final exam had to be changed in a way that did not allow obtaining the artifacts. Similarly Bio 231 was unable to provide an artifact due to the change to online instruction.) Of the artifacts assessed, 23 out of 26 achieved a score of 9 or above (88%). By class, 100% of the artifacts achieved a score of at least 9, while in Phys 109 81% did so. 3). INTERPRETATION* - <i>Discuss how the results answer the assessment question(s).</i> As an average over the department, we achieved our goal of 80% of the artifacts scoring at least a 9, and we achieved that standard in each class we were able to assess. We interpret this to mean that generally our students are able to correctly apply scientific analyses to real world problems. However there are some qualifications. The CS course assignment explicitly told the students what concept to apply in solving the problem (and even then not all students were able to identify the correct concept). The Phys course had extensively drilled the idea of writing the knowns and unknowns explicitly when solving the problem and still almost 20% of students did not do so. We also did not have an artifact from Biology or Chemistry, due to circumstances surrounding the move to online instruction. 4). <i>Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low) Click or tap here to enter text.</i>
Sharing of Results: <i>When were results shared? Date:</i> May 20, 2020 <i>How were the results shared? (i.e. met as a department)</i> Results were shared at a department meeting and via email. <i>Who were results shared with? (List names):</i> Robert Hermann, Brent Royuk, Kristy Jurchen, John Jurchen, Gregg Einspahr, Tim Huntington, Connie Callahan, Kyle Johnson, Jen Freund, Kent Einspahr, Marcus Gubanyi, Dennis Brink.
Discussion of Results –Summarize your conclusions including: 1. ACTION* - <i>How will what the department learned from the assessment impact:</i> a. <i>Teaching:</i> Because we met our goal, we are not going to change our teaching significantly, however, in some classes we will evaluate how to better emphasize the underlying concept involved in solving standard problems. b. <i>Assignment/course:</i> We will make sure that we have a number of similar problems in a variety of assignments throughout the semester, so students have adequate practice. c. <i>Program:</i> We will continue to emphasize appropriate problem-solving throughout the department. d. <i>Assessment:</i> We will attempt to do a better job of reminding faculty regularly of what courses will be providing artifacts. We will attempt to finally stay in our building for a spring term and obtain all the artifacts we plan on. 2. IMPACT* - <i>What is the anticipated impact of the ACTION* on student achievement of the learning outcome in the next academic year?</i> We hope to continue to improve students’ ability to solve analytical problems.

3. **BUDGET IMPLICATIONS** – Indicate budget requirements necessary for the successful implementation of the **ACTION*** (i.e. an additional staff person, new equipment, additional sections of a course).

None

If action is taken – it is recommended that the same learning outcome and assessment plan be used for a second assessment cycle.

What assessment questions related to the learning outcome would the program like to investigate in the future? Same as this year; contingent on the goals of the General Ed committee.

Submitted by:Robert Hermann **Assessment Committee Reviewed:** 7/14/2020

Department Chair notified – approval/additional action needed:7/14/2020

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na