

2022– 23 Alternative Delivery Executive Summary

Submit to the BlackBoard Assessment Site.

Department: Natural Sciences **Date:** 06/12/2023 **Course(s):** Phys 110
Alternative Format(s) – select as many as are applicable: Dual Credit **Select** **Select**

Members (must include more than course instructor only) **involved with analysis of artifacts:** Robert Hermann, Kyle Johnson, Kristy Jurchen, Jen Freund

See Alternative Delivery Assessment Plan for:

a) Course requirement evaluation; b) Student Outcome; c) Question(s); e) Methodology

Analysis of artifacts:

1). Student Outcome: **PERFORMANCE CRITERIA*** - How was data analyzed? (attach rubrics/scoring tools if used). Scores (means and distributions from a 40 question multiple choice comprehensive final exam) were analyzed.

2). **COMPARABILITY** – How did you determine if the outcomes of the traditional and alternative delivery modes were comparable? (note “na” if delivery modes were not compared). Scores from the dual credit sites were compared with scores from the results when the course is taught face-to-face on Concordia's campus

Summary of RESULTS*:

1). Restate the assessment question(s) (from the Assessment plan): Are students able to analyze natural situations and communicate understanding and information about the world in verbal, graphical, and analytical languages.

2). Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.

Th averages and p-values (from CUNE scores) for the four schools teaching Phys 110 are shown below:

School	Mean Percent Score	P-Value (from CUNE)
DC1	82.5 ± 10.8	0.021
DC2	56.5 ± 10.1	0.758
DC3	83.6 ± 10.8	0.004
DC4	54.6 ± 12.9	0.344

The results are very similar to past years, and they compare favorably to the scores taught on the Seward campus, where the average score is 61.5 ± 18.2%. The overall average for the DC schools was 68.8%, higher than CUNE, though not significantly. Half the schools averaged higher than CUNE, and half averaged somewhat lower. All the schools' average scores overlap the CUNE average within one standard deviation. The low scores are not statistically different from the CUNE scores, though the highest score is. The scores for the individual DC schools are consistent with their usual results and vary in large part due to the manner in which they administer the exam.

3). **INTERPRETATION*** - Discuss how the results answer the assessment question(s).

The assessment instrument consists of 40 multiple choice questions from the test bank for the standard textbook for the course. The questions require students to analyze physical situations and answer questions about them from a physics perspective. Several of the questions involve analyzing graphs of motion or other types of graphs, and many involve using equations and calculations. The fact that students overall average nearly 70% on this exam is solid evidence that students are indeed able to analyze natural situations and to communicate their understanding.

4). Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)

5). **How did the outcomes of the traditional and alternative format analysis compare?**

The scores from the dual credit sites are similar to and often better than those scored by the students in the course offered on Seward's campus. It is worthwhile noting that while the CUNE scores are consistently lower than most of the dual credit sections, (a) the CUNE sections typically have very few students (five to eight), (b) the students taking the course on campus are generally non-science students taking it instead of a more rigorous physics course, while students taking it dual credit are generally highly-motivated and successful students taking it

as a means of taking the most advanced course available, and (c) the manner in which the tests are administered varies from school to school, with the CUNE manner being fairly difficult for students (the exam is a part of a closed book, closed notes in-class final exam). So the populations are very different, as is the manner of administering the exam.

Sharing of Results: *When were results shared? Date: 6/13/23 How were the results shared? (i.e. met as a department) Emailed Who were results shared with? (List names):* Connie Callahan, Kregg Einspahr, Jen Freund, Robert Hermann, Tim Huntington, Kyle Johnson, John Jurchen, Kristy Jurchen, Brent Royuk, Kim Clark, Raegan Skelton

Discussion of Results –Summarize your conclusions including:

1. **ACTION***- *How will what was learned from the assessment impact the alternative format teaching of this course starting the next academic year?*

Since the dual credit students are demonstrating admirable mastery of the concepts, we will try not to do too much to change this. Each year dual credit instructors are asked for ideas on improving the assessment instrument, and there are fewer and fewer comments, so the instrument seems to be reaching a point where it is doing what it needs to do.

2. **IMPACT***- *What is the anticipated impact of the ACTION* on student achievement of the learning outcome in the next academic year?*

Hopefully it will not deter from the learning that students are demonstrating.

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

Submitted by: Robert Hermann Assessment Committee Reviewed (date): 6/15/23

Submitter notified approval/additional action needed: Approved

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na