

2020– 21 Alternative Delivery Executive Summary

Submit to the BlackBoard Assessment Site.

Department: Natural & Computer Science Date: 7/15/21 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, Jen Freund, Kyle Johnson, Kristy Jurchen
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 single dual credit site that was able to deliver the assessment 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. The averages (and p-values from CUNE scores) for the four schools teaching Phys 110 were: DC1 82.8% (0.08), DC2 50.6% (0.16), DC3 76.8% (0.17), DC4 75.9% (0.033). The results are very similar to past years, and they compare favorably to the scores from the section taught on the Seward campus, where the average was 61%. The overall average for the DC schools was 73%, higher than CUNE (and individually higher, except for DC2), but not statistically significant, and only DC4 was individually statistically significantly different from CUNE. 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 over 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) There is a large range of individual scores on the exam. This gives me confidence that instructors are not "teaching to the test". DC3 also has a mix of dual credit and non-dual credit students, and the scores for the dual credit students were significantly higher than those not taking the class for credit (though with a small number of students to compare). This gives weight to the idea that students making the effort to take the course for credit are generally more high-achieving. This is the first year that an individual school (in this case, DC2) has averaged lower than CUNE's average (though not statistically significantly lower). This school is known to do a very good job with instruction and assessment, so this year's scores do not raise any major concerns; it could be due to difficulties teaching and learning in the pandemic. 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 (though most have p-values greater than 0.05, indicating the differences are not significant). It is worthwhile noting that while the CUNE scores are consistently lower than those of the dual credit sections, (a) the CUNE section has very few students (five this term), and (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. So the populations are very different.
Sharing of Results: When were results shared? Date: 5/19/21 How were the results shared? (i.e. met as a department) Distributed via meeting. Who were results shared with? (List names): Connie Callahan, Kent Einspahr, Gregg Einspahr, Jen Freund, Marcus Gubanyi, Robert Hermann, Tim Huntington, Kyle Johnson, John Jurchen, Kristy Jurchen, Brent Royuk, Dennis Brink
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):** 7/19/21

Submitter notified approval/additional action needed: Approved

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na