# 2019– 20 Alternative Delivery Executive Summary

Submit to the BlackBoard Assessment Site.

**Department:** Natural & Computer Sciences **Date:** 6/9/20 **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 Fruend, 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 average score on the 40-question multiple choice test from the dual credit site was a 66%, with a standard deviation of 18.4 percentage points. This result is very similar to previous years, and compares favorably to the aggregate scores of 61.5% (standard deviation 18.2 percentage points) from when the course is taught face-to-face on the Seward campus. One student at the dual credit site attempted fewer than half of the questions. Without this student's score the Dual Credit site average was 70%.
*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. However, the questions are different in nature and style from what students are used to in the course (as most physics tests are not multiple-choice, and even when they are, the questions are written by the instructor rather than by the textbook authors); this results in an expectation of lower scores than usual. 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*) There is a large range of individual scores on the exam. This gives me confidence that instructors are not "teaching to the test".
5). ***How did the outcomes of the traditional and alternative format analysis compare?*** The scores from the dual credit site are similar to and in fact better than those scored by the students in the course offered on Seward's campus (though the p-value is greater than 0.52 (0.17 without the outlier), 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, 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:* *How were the results shared? (i.e. met as a department)* Distributed to department via email *Who were results shared with? (List names):* Connie Callahan, Kent Einspahr, Kregg Einspahr, Jen Fruend, 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. Hopefully next year more dual credit sites will be able to complete the assessment.

*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):** 7/15/2020

**Submitter notified approval/additional action needed:** 7/15/2020

**BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean:** na