

2022– 23 Alternative Delivery Executive Summary

Submit to the BlackBoard Assessment Site.

Department: Math and Computer Science **Date:** 6/14/2023 **Course(s):** CS 131
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:** Marcus Gubanyi and Kent Einspahr

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)*. Randomly selected student programs from a final exam were collected from sections of CS 131. Scores were determined with the following rubric:

4 = The program produces correct output for all inputs with minimal syntax errors and minimal deviations from acceptable programming conventions and good programming practices.

3 = The program produces correct output for nearly all inputs. The program may have some syntax/runtime errors or some deviations from acceptable programming conventions and good programming practices.

2 = The program produces incorrect output for many inputs, has many errors and/or fails to follow acceptable programming conventions and good programming practices.

1 = The student's work is far from a working program.

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)*. Determine statistically significant difference based on a 2 sample proportion test, using the percentage of students who score a 3 or 4.

Each section of dual credit score was compared with the baseline data from the traditional section.

Summary of RESULTS*:

1). *Restate the assessment question(s) (from the Assessment plan):* At the end of the course, are students enrolled in dual credit sections of CS 131 able to develop programs as well as traditional students?

2). *Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.* Artifacts from 3 sections of CS 131 were collected, two of which were dual credit. The scores of the artifacts are as follows:

CS 131 Traditional Section:	4 4 2 3 4 3 2 4 4 3	Average = 3.3
CS 131 Dual Credit Section 1:	3 4 3 2 2 4 3 3 3 2 2	Average = 2.83
CS 131 Dual Credit Section 2:	4 3 3 3 2 3	Average = 3

Performing two-tailed T-tests on each of the dual credit sections with the traditional section resulted in P-values of 0.17 for Dual Credit Section 1 and 0.50 for Dual Credit Section 2. Thus, we conclude there is not a statistically significant difference between the dual credit sections and the baseline traditional section.

One section of dual credit mistakenly assigned a previous year's common assessment and thus was not assessed. The artifacts provided for this section were reviewed and there are no concerns with this section. In future years, we will coordinate with the instructor to collect the correct artifacts.

3). **INTERPRETATION*** - *Discuss how the results answer the assessment question(s)*. Based on our scores, the dual credit students were able to develop programs comparably to traditional students.

4). *Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)* One of the dual credit sections (2) used a different programming language than other sections. We are not as familiar with this programming language, so our scores for this section are less reliable.

5). **How did the outcomes of the traditional and alternative format analysis compare?** The outcomes were not significantly different, although the traditional section did have higher average scores. We will continue to monitor dual credit student's scores and if larger samples of dual credit students still have lower scores, we will take action.

Sharing of Results: *When were results shared? Date:* 6/14/2023 *How were the results shared? (i.e. met as a department)* Communicated via email. *Who were results shared with? (List names):* Marcus Gubanyi, Kent Einspahr

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?* N/A

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

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).* N/A

Submitted by: Marcus Gubanyi **Assessment Committee Reviewed (date):** 6/27/23

Submitter notified approval/additional action needed: Approved 6/27/23

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na