

2024– 25 Alternative Delivery Executive Summary

Submit to the BlackBoard Assessment Site.

Department: Math & CS **Date:** 6/16/2025 **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 Ian Kollipara

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).* Calculate a proportion of students who completed the problem in a satisfactory manner. Student artifacts in the traditional section are considered satisfactory if they passed the unit tests during the lab exams. Student artifacts from alternative sections were assessed by Ian and Marcus to determine whether they are satisfactory programs based on the specific context of that section. Note that alternative sections did not have an Integrated Development Environment (IDE) while completing the assessment like the traditional sections did.

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). Compared proportions with a z-test to determine if dual credit students were less likely to produce satisfactory programs.

Summary of RESULTS*:

1). *Restate the assessment question(s) (from the Assessment plan):* Can students write programs that solve problems with lists (or arrays, depending on the programming language)?

2). *Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.* 15 satisfactory out of 23 total from traditional sections. Alternative sections: 2 out of 2; 3 out of 5; 2 out of 4; 4 out of 20. In total, alternative sections are 11 out of 31.

Two proportion z-test results in a p-value of 0.0154, indicating that the proportion of satisfactory artifacts in the alternative delivery (~0.35) was significantly different (specifically, less) than the traditional delivery (~0.65). In particular, one section is of concern, which had only 4 out of 20 artifacts deemed satisfactory.

3). **INTERPRETATION*** - *Discuss how the results answer the assessment question(s).* Traditional students solved programming problems with lists well while one section of alternative delivery (with 20 students) was significantly unsatisfactory based on the lack of exhibited student programming ability in the submitted programs. The other three, much smaller, alternative sections were comparable with the traditional section in terms of student program quality.

4). *Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)* Note that the unsatisfactory section had hand-written student artifacts while the traditional section had students complete the programs with the IDE. This difference may have contributed to the poor quality of student work. That said, the student artifacts in this section were assessed generously and the faculty noted significant concerns about the lack of student programming ability exhibited in the common assessment.

5). **How did the outcomes of the traditional and alternative format analysis compare?** Three of the four alternative delivery sections were comparable to the traditional section. The fourth alternative delivery section was not comparable.

Sharing of Results: *When were results shared?* Date: 6/16/2025 *How were the results shared? (i.e. met as a department)* Email *Who were results shared with? (List names):* Department: Brian Albright, Kent Einspahr, Ed Reinke, Tim Schroeder, Ian Kollipara, Marcus Gubanyi

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?* Given that one section of alternative delivery had significantly less satisfactory programs and our department's analysis of student artifacts, changes should be made to this alternative delivery section. Specifically, when and if this campus and instructor offers dual credit CS 131 again in the future, the instructor will be required to coordinate more directly with the department to ensure that student learning outcomes are met. Note that this campus and instructor are not planning to offer dual credit CS 131 in the next academic year.

The reveals concerns about the instruction of this specific section. The department will also reconsider "Appendix A: Tested Experience Guidelines for Faculty Qualifications" for Academic Policy 2.520 which qualified this specific instructor to teach dual credit CS 131.

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

the next academic year? We expect that more coordination with the department (by the unsatisfactory section) will result in a higher proportion of satisfactory student artifacts. This may be unnecessary as this section may not be offered again.

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). NA

Submitted by: Marcus Gubanyi **Assessment Committee Reviewed (date):** 6/17/25

Submitter notified approval/additional action needed: approved

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na