

#4. Executive Summary: Undergraduate Program Assessment: Alternative Delivery

Course: Math 122, Intro to Stats Alternative Format: Other Explain "Other" if selected: Dual Credit

Department: Math Date: Fall 2018 - Spring 2019

Members (must include more than course instructor only) involved with analysis of artifacts: Brian Albright, Ed Reinke

See #3 Assessment Plan: Alternative Delivery: Student Outcomes 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)*. Each dual credit teacher submitted responses to a 2-sample t-test hypothesis testing problem given on a test or quiz. These problems were graded using a rubric. The same type of problem from face-to-face students were also graded using the rubric. Scores for each category were averaged on a Likert-type scale. Scores from the dual credit students were compared to those from face-to-face students using a 2-sample T-test.

2). **COMPARABILITY** – *How did you determine if the outcomes of the traditional and alternative deliver modes were comparable? (note "na" if delivery modes were not compared)*. Scores were compared using a 2-sample T-test

Summary of **RESULTS***:

1). *Restate the assessment question(s) (from the Assessment plan):* Can students properly perform a 2-sample t-test hypothesis test?

2). *Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.* Detailed scores are shown in the attached Excel workbook. The scores are summarized below

Face-to-Face Students

Category	n	Mean	StDev
States Hypotheses	34	2.64	0.849
Calculates Test Stat	34	2.65	0.774
Conclusion	34	2.44	0.860

Dual Credit Students

Category	n	Mean	StDev
States Hypotheses	28	2.21	1.100
Calculates Test Stat	28	1.86	1.113
Conclusion	28	1.82	1.188

The results of the 2-sample T-tests are shown below (we tested the hypotheses that means are equal vs means are not equal)

Category	P-value
States Hypotheses	0.094
Calculates Test Stat	0.003
Conclusion	0.025

3). **INTERPRETATION*** - Discuss how the results answer the assessment question(s). We conclude that there is a statistically significant difference between scores in all categories.

4). *Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)* The sample size of dual credit students was much smaller this year than last (28 vs. 75). Also, the standard deviations of scores were much higher than last year. A few poor students in the dual credit classes brought the average scores down, increased the standard deviations, and caused a difference between dual credit and face-to-face scores. The work of the good students looked really impressive.

5). **How did the outcomes of the traditional and alternative format analysis compare?** (note "na" if delivery modes were not compared). **All categories were different**

Sharing of Results:

When were results shared? Date: 6/3/2019

How were the results shared? (i.e. met as a department) Met as a team

Who were results shared with? (List names): Brian Albright, Ed Reinke

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?* Dual credit students did a good job stating the hypotheses, with a few exceptions. This was an issue addressed in previous years. The smaller sample sizes makes comparison to previous years difficult. A few students had P-values greater than 1. This error should not happen. Dual credit teachers will be reminded of this.

2. **IMPACT***- *What is the anticipated impact of the ACTION* on student achievement of the learning outcome in the next academic year?* Scores in all categories for dual credit students will improve.

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 via email to Assessment Committee Chair by: 6/4/2019

Reviewed by the Assessment Committee (date): 6/10/19

Submitter notified/additional action needed: na

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na

Approved & Posted to Assessment site: 6/10/19