

#### #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 2017 - Spring 2018

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 1-proportion hypothesis testing problem given on a test or quiz. These problems were graded using a rubric. The same 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 delivery 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 1-proportion 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	75	2.45	0.810
Calculates Test Stat	75	2.17	0.964
Conclusion	75	2.21	0.905

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	0.267
Calculates Test Stat	0.008
Conclusion	0.211

3). **INTERPRETATION\*** - Discuss how the results answer the assessment question(s). We conclude that there is a statistically significant difference between scores in the category of Calculates Test Statistic. There is not a statistically significant difference between scores in the categories of State Hypotheses or Conclusion.

4). Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low) Students in dual credit classes often made arithmetic errors when calculating the test stastic.

5). **How did the outcomes of the traditional and alternative format analysis compare?** (note "na" if delivery modes were not compared). **Similar in all categories except Calculate Test Statistic**

**Sharing of Results:**

When were results shared? Date: 6/14/2018

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 much better job this year defining the parameter. This was an issue addressed after last year's assessment. Dual credit teachers will be reminded via email to watch out for arithmetic errors in their formative assessments.

2. **IMPACT\***- What is the anticipated impact of the **ACTION\*** on student achievement of the learning outcome in the next academic year? Scores in the category of Calculates Test Statistic 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: 6/15/2018**

**Reviewed by the Assessment Committee (date): 6/18/18**

Submitter notified/additional action needed: na

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

**Approved & Posted to Assessment site: 7/1/18**