

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

<b>Course:</b> Bio 111 <b>Alternative Format:</b> Other <b>Explain "Other" if selected:</b> Dual Credit
<b>Department:</b> Natural Sciences <b>Date:</b> 6/2/2016
<b>Members</b> (must include more than course instructor only) <b>involved with analysis of artifacts:</b> Kyle Johnson, Robert Hermann
<b>See #3 Assessment Plan: Alternative Delivery: Student Outcomes for:</b> a) Course requirement evaluation; b) Student Outcome; c) Question(s); e) Methodology
<b>Analysis of artifacts:</b> 1). Student Outcome: <b>PERFORMANCE CRITERIA</b> * - How was data analyzed? (attach rubrics/scoring tools if used). The correct answers for each question pertaining to the understanding of experimental design was determined for the traditional and dual credit exam.  2). <b>COMPARABILITY</b> – How did you determine if the outcomes of the traditional and alternative deliver modes were comparable? (note "na" if delivery modes were not compared). The means and standard deviations for the items were calculated. An unpaired student's t-test was used to determine whether the means were statistically different. A $p < 0.05$ was considered a statistically significant result.
<b>Summary of RESULTS*:</b> 1). Restate the assessment question(s) (from the Assessment plan): Can students design and critique experimental designs in biology, understand the limits of an experiment, identify and plan various variables and controls in an experiment, and communicate this effectively?  2). Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional. A total of 11 questions (multiple choice questions 1, 2, 4 - 7, 9 - 11, and true-false questions 12 and 20) were included in the analysis. The mean percentage $\pm$ SD of these questions that the dual credit students (from DC1) got correct was $60 \pm 32\%$ ; for the CUNE students the mean percentage was $57 \pm 20\%$ . See figure 1 in the accompanying pdf.  3). <b>INTERPRETATION</b> * - Discuss how the results answer the assessment question(s). For both class structures, the results indicate that the students understood the topics better than random chance. However, less than a quarter of the students actually understood the topic well enough to score get a C or higher ( $>70\%$ ) on the questions asked, and less than 10% scored $>80\%$ on the material. Only two students (one from CUNE, one from DC1) scored 100% on the questions. See figure 2 in the accompanying pdf.  4). Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low) As the questions were multiple choice/true false, rater reliability was not a factor.  5). How did the outcomes of the traditional and alternative format analysis compare? (note "na" if delivery modes were not compared). The mean percentage $\pm$ SD of these questions that the dual credit students got correct was $60 \pm 32\%$ ; for the CUNE students the mean percentage was $57 \pm 20\%$ . Using an unpaired student's t-test, it was determined that the differences in these were not statistically different ( $p < 0.05$ ).
<b>Sharing of Results:</b> When were results shared? Date: 6/6/2016 How were the results shared? (i.e. met as a department) Met as a department. Who were results shared with? (List names): Timothy Huntington, Kristy Jurchen, Jennifer Fruend, Connie Callahan, John Jurchen, Robert Hermann
<b>Discussion of Results –Summarize your conclusions including:</b> 1. <b>ACTION</b> *- How will what was learned from the assessment impact the alternative format teaching of this course starting the next academic year? Because the alternative format was not significantly different from the standard format, no difference in how the alternative is delivered is necessary. However, given the number of students that scored below 70% on the assessment questions, a greater emphasis in experimental design needs to happen.

2. **IMPACT\***- *What is the anticipated impact of the **ACTION\*** on student achievement of the learning outcome in the next academic year?* Students will have a greater understanding of experimental design. This can be assessed by using a similar or identical assessment to the one given this year.

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).* No new budget requirements are necessary.

**Submitted via email to Assessment Committee Chair by: Kyle Johnson**

**Reviewed by the Assessment Committee (date): 6/24/16**

**Submitter notified/additional action needed: na**

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

**Approved & Posted to Assessment site: 6/24/16**