



## H. LAVITY STOUTT COMMUNITY COLLEGE

### ANNUAL PROGRAM ASSESSMENT REPORT 2017-2018

**Department:** Mathematics & Science

**Program:** General Science

**Type of Program:** Associate Degree

**Program Assessment Coordinator:** Stephanie Russ Penn

**Assessment Team:** Lenette Lewis; Sarita Pemberton

**Program Outcome Assessed:**

Students will be able to demonstrate appropriate laboratory skills

**Achievement Target/Criteria for Success:** *(State the target or the minimum results needed to indicate program success on this outcome. Or, indicate that results will serve as baseline data.)*

This is the first time this outcome has been assessed. Results will be used as baseline data for future assessment of this learning outcome.

**Method(s) to Collect Evidence:** *(Brief description of what was collected, how, and by whom. When applicable, attach assessment tool.)*

The chemistry instructor conducted a laboratory skill exam in the two sections of General Chemistry II (CHE112) during the Spring 2018 semester. The exam covered eleven (11) laboratory skills: apparatus, identification, thermometer reading, pH measuring, weighing, qualitative analysis, burette reading, pipette use, dilution, titration, application of measurement and calculation. From an enrolment of twenty-three (23) students, twenty-two (22) students completed the exam which is attached.

**Methods to Analyze/Evaluate Data:** *(Brief description of how the evidence was analyzed or evaluated and by whom. When applicable, attach scoring criteria or rubric.)*

The exam was scored by the chemistry instructor using the rubric attached. If students got a question correct they scored a 2 and was deemed as meeting the established standard. If students received a score of 1 they were deemed as partially meeting the established standard, while students who got a question wrong received a score of 0 and were deemed as not meeting the established standard. The data was then used by the instructor to determine the percentage of students meeting the established standard

**Summary of Assessment Results:** *(Attach aggregated data table, survey tool, etc., to support the summary.)*

**At least 85% of the students were deemed proficient in thermometer reading, pH measuring, weighing and titration. At least half of the students showed proficiency in pipette use, dilution and apparatus identification. The weakest area were burette reading, qualitative analysis, calculation and application in that order, ranging from 5% to 41%. The aggregated data table is attached.**

**Review of Assessment Results:** *(Indicate when and in what forum the results were discussed to determine the most effective use of the results.)*

The assessment results were discussed at two department meetings held on the 29<sup>th</sup> of October, 2018 and the 7<sup>th</sup> of November 2018. Department members discussed strategies that could be adapted based on the results of the lab skills assessment.

**Use of Results:** *(State how the program used the results or explain planned use of results - be specific. Include a timeline and key people as appropriate.)*

The following strategies for subsequent lab skills assessments were discussed at the department meetings:

1. Ensure that all tested lab topics are covered in CHE 110 but the weak areas especially emphasised (burette reading, qualitative analysis, calculation and application).
2. Reinforce topics by adding more labs with the skills being tested in CHE 112 and continue having a lab exam at the end of the Spring semester for CHE 112
3. This baseline data can be use to determine the standards for subsequent assessments- 80% proficiency in all tested areas was suggested.
4. Most of the weak skills can be attained by more titration practice. These are skills that the students should have from high school but because of the limitations of laboratory equipment, they are not adequately exposed to experiments involving titrations. Having a titration workshop for Grade 11 high school students (public and private) was also discussed.

**Reflect on the Assessment Process:** *(What went well? What didn't go well? Is there anything related to assessment procedures your program would do differently next time?)*

The lab skills assessment for CHE 112 provided some very valuable data that can act as a foundation for subsequent lab skills assessments.

One thing that can be changed with the actual lab exam for the next Spring assessment is to include the actual topics /skills being assessed so it correlates with the topics /skills listed on the rubric.

**Other Important Information:**

[Click here to enter other important information.](#)

**Changes Made During the Previous Assessment Cycle:** *(Indicate the change made, the reason for the change, and how the effects of the change were monitored.)*

[Click here to enter any changes made during the previous assessment cycle.](#)