

CNM ANNUAL STUDENT LEARNING ASSESSMENT REPORT

Due to the Student Academic Assessment Committee by October 15



PART 1: REPORT INFORMATION

Report Year and Contact Information			
<u>2017-2018</u> Academic Year	<u>Kevin Divine, Carol Martinez</u> Contact Person	<u>kdivine@cnm.edu, camartinez@cnm.edu</u> CNM Email	<u>52197, 50231</u> CNM Office Extension

Subject of this Report
MSE--CHEM_AS--Chemistry Degree

PART 2: CONTEXT IN WHICH THE ASSESSMENT TOOK PLACE

Program/Area Highlights and Successes
<small>(Wherever applicable, include course completion rates, job placement outcomes, and licensing examination pass rates. See the program information dashboard at https://livecnm.sharepoint.com/sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx (access restricted to CNM employees) and other reports at https://www.cnm.edu/depts/opie.)</small>
CHEM 1810 had 11 sections with 436 students. The C-pass rate was 64.4%. CHEM 1892 had 18 sections with 351 students. The C-pass rate was 76.8%. In FY 17/18, there were 178 declared CHEM majors. Five AS degrees in CHEM were awarded during 2016-2017 FY, and 4 of those students have transferred to a 4-year institution.

Changes Implemented During the Past Year in Support of Student Learning
We continue to provide extra review on the topics covered on the final by giving quizzes, practice finals and study guides to better prepare students for the exams during the term and for the final exam.

PART 3: REPORT ON ASSESSMENT OF STUDENT LEARNING

Assessment Method	Type of Assessment Tool	Population or Course(s) Assessed	Graduate Learning Outcome(s) Assessed	Mastery Level (E.g., "Minimum score of 3 on a rubric scaled 0-4" or "Minimum score of 75%")	Targeted % Achieving Mastery	Outcome
Assess student performance on selected questions on the lab final.	Direct & Internal	CHEM 1892	Demonstrate a mastery of basic chemistry laboratory operations and experimental procedures including laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).	Minimum score of 75% on each of the assessed questions on the lab final.	75%	Target met
Assess student performance on selected questions on the lab final.	Direct & Internal	CHEM 1892	Use basic computational and graphical techniques to perform laboratory related calculations and data analysis.	Minimum score of 75% on each of the assessed questions on the lab final.	75%	Target met

Summary of Assessment Findings

The lowest scores that were obtained by the students were on the quantitative questions on the lab final, with 79.7% of the students properly interpreting a graph to obtain a pKa value. The highest scores were 98.5% of students properly making a direct reading of a volume from a graph.

Interpretation of Assessment Findings

One-step calculations or readings are done at a > 90% correct rate, but for two-step processes, the rate of correct responses falls 5 to 10%.

Action Plan in Support of Student Learning (Describe changes to be made that are based at least in part on the assessment interpretation. If the assessment did not yield useful information, describe changes to be made in the assessment methodology and/or criteria.)

Ask faculty to focus on multi-step processes in lecture, lab, quizzes, etc. Revise assessment methodology to better match targeted GLO's.

Please select all of the following that characterize the types of changes described in the above action plan:

- | | | |
|-------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Assessment criteria revision | <input checked="" type="checkbox"/> Assessment methodology revision | <input type="checkbox"/> Assignment revision |
| <input type="checkbox"/> Budgetary reallocation | <input checked="" type="checkbox"/> Change in teaching approach | <input type="checkbox"/> Course content revision |
| <input type="checkbox"/> Curricular Revision | <input checked="" type="checkbox"/> Faculty training/development | <input type="checkbox"/> Process revision |

Recommendations, Proposals, and/or Funding Requests	Budget Needed
N/A	

PART 4: REMAINING YEARS IN CURRENT ASSESSMENT CYCLE PLAN (including any revisions) – **OR -- UPCOMING ASSESSMENT CYCLE PLAN** (if this was the final year)

Years of Full Cycle	Next Year's Assessment Focus (Describe how the next planned assessment is expected to provide information that can be used toward improving student learning.)
2017-2022	For the 18/18 AY, we will continue to assess the same GLO's. We are considering a refinement of the questions on the final to better serve our interests in data collection and interpretation.

Graduate Learning Outcomes to Be Assessed	Years in which Assessment Is Planned	Population/Courses to Be Assessed	Planned Assessment Approach
Employ critical thinking skills to judge the validity of information from a scientific perspective.	Fall 2019-Spring 2021	CHEM 1710	Direct/Internal. Assess selected questions on lecture final.
Develop laboratory experimental models that support theoretical chemistry concepts and methodology.	Fall 2021-Spring 2022	CHEM 1792	Direct/Internal. Assess Beer's Law questions on lab final.
Demonstrate a mastery of basic chemistry laboratory operations and experimental procedures including laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).	Fall 2017-Spring 2019	CHEM 1892	Direct/Internal. Use lab report or re-written questions on final with provided data for pKa experiment.
Use basic computational and graphical techniques to perform laboratory related calculations and data analysis.	Fall 2017-Spring 2019	CHEM 1892	Direct/Internal. Assess pKa questions on lab final.
Contribute, as member of a team, to the successful accomplishment of organizational tasks, projects, and goals.	Fall 2019-Spring 2021	CHEM 2792	Direct/Internal. Students synthesize, characterize, and report their findings on a compound.
Collect, analyze, and report relevant chemistry/experimental information.	Fall 2021-Spring 2022	CHEM 1892	Direct/Internal. Assess kinetics questions on lab final.