2016-2017 Arizona Western College
Annual Assessment Report
2016-2017 Arizona Western College Assessment Report

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Introduction and Background

The Assessment Report is published annually by the Director of Assessment, Program Review, Curriculum and Articulation under the guidance of the Vice President of Learning Services at Arizona Western College. The Director of Assessment, Program Review, Curriculum and Articulation also serves as a member on the Curriculum Committee and an ex-officio member on the General Education Curriculum Committee.

Faculty and staff have long sought to advance the academic achievement of students and the services provided at Arizona Western College (AWC) through a variety of programs, services, and activities. AWC’s student learning outcomes are defined by the faculty and the instruments used to measure student success are selected and/or developed by the faculty. Institutional departments define and analyze the results of their goals to improve services for students, faculty, staff, and the community. AWC promotes continual assessment to ensure the institution is providing quality services and preparing students to be successful in critical inquiry, communication, quantitative analysis, digital literacy, scientific literacy, and civic discourse.

The Assessment, Program Review, Curriculum and Articulation Office serves to help district-wide assessment efforts by sharing results among members of AWC and Yuma and La Paz County and encouraging new ways to improve teaching and learning and improving institutional services.

Organizational Structure for Assessment

As a standing committee, the General Education Curriculum Committee (GECC) is charged with making decisions and recommendations related to all aspects of general education outcomes assessment at Arizona Western College. The faculty driven committee is chaired by a faculty member. The Director of Assessment, Program Review, Curriculum and Articulation is an ex-officio member of the GECC. The committee holds regular monthly meetings and schedules additional ad hoc meetings as needed.

The success of course and program level assessment, as well as institutional assessment activities and initiatives, is dependent upon the participation and collaboration of faculty and administration.
2016-2017 Accomplishments

- Faculty continued to develop program learning outcomes increasing the number of programs and certificates with identified learning outcomes which are now available via links under the individual degrees and certificates on the AWC Degrees and Certificate webpage.

- Provided fourteen assessment workshops/Tk20 training sessions (group and individual).

- Twelve Excellence in Assessment Awards earned by administrators and staff and 12 by faculty.

- Seventy-four Writing Intensive (WI) essays were assessed for 2016-2017.

- Six 2015-2016 program reviews were completed; four academic programs and two administrative departments.

- Two institutional benchmarks were developed and approved and posted on the assessment website.

- The writing assessment webpage was revised to include changes in the writing assessment process and the assessment results for 2014-2015, 2015-2016 and 2016-2017.

- The creation of a Prior Learning Assessment (PLA) webpage, section in the 2017-2018 Academic Catalog, and clearly defined processes.

- The establishment of the Assessment Coalition.

Excellence in Assessment

The Assessment, Program Review, Curriculum and Articulation Office established an Excellence in Assessment Award as a way to publicly acknowledge the efforts of the faculty, administrators, and staff that have successfully completed a well-developed assessment plan to improve student learning and/or services. The 2016-2017 Excellence in Assessment recipients are:

**Faculty**
- Therese Dehne, Professor of Biology
- Joann Chang, Professor of Biology
- Monica Ketchum, Professor of History
- Robert Killin, Professor of Chemistry
- Scott Donnelly, Professor of Chemistry
- Rita Brown, Professor of Mathematics
- Sarah Berner, Professor of Agricultural Science/Manager of Land Lab
- Nick Hanhan, Professor of Orientation
- Cindy Marchant, Professor of Speech Communication
- Michelle Sims, Professor of Economics
- Anthony Gier, Professor of Economics
- Patrick Cunningham, Professor of Economics

**Administrators and Staff**
- Roasalia Delgado, Director of CAMP
- Rafael Encinas, Academic Adv/Transition Coordinator, CAMP
- Rigo Conde, Outreach & Activities Coordinator, CAMP
- Viviana Avila, Senior Secretary, CAMP
- Michelle Thomas, Director of TRIO Programs
- Angelica Gebhardt, Project Specialist, KEYS
- Laura Shepherd, Academic Success Advisor, KEYS
- Eva Aviles, Program Manager, KEYS
- Shara Roberts, Coordinator of Student Leadership and Activities
- Vanessa Natseway, Student Success Center Coordinator
- Cynthia Hummer, Administrative Assistant
- Sotero Alvarado, Professor of Mathematics/Mathematics Lab Coordinator
Excellence in Assessment- Program Review
The Excellence in Assessment Award was originally established to acknowledge the efforts of the faculty, administrators, and staff who successfully completed a well-developed assessment plan. In the fall of 2016, one administrative department completed and submitted an exemplary program review for 2015-2016 that was deserving of the 2016-2017 Excellence in Assessment award: Veteran Services

General Education Assessment
Each year the GECC assess critical inquiry, writing, and one additional general education focus area. This year the GECC selected digital literacy. Digital literacy is the ability to effectively and critically evaluate, navigate and create information using a range of digital technologies while adhering to the rules and laws governing said information and technologies. Digital literacy is a supplement to, not a replacement of, traditional forms of literacy, building upon the foundation of traditional forms of literacy.

A digitally literate person comprehends and can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share original content, and use the Internet and technology tools to achieve academic, professional, and personal goals.

Tools for Assessment and Measurement
Critical Inquiry-
The GECC assessed student’s critical inquiry by asking Student Showcase Scholarship applicants to write a 2-page essay or create an 8-10 minute video, that would thoroughly and thoughtfully explain how the project they were presenting for the Spring 2017 Student Showcase exemplified their understanding and expression of one of the five AWC General Education Focus Areas: Digital Literacy, Communication, Quantitative Analysis, Scientific Literacy, and Civic Discourse.

The GECC assessed 17 student applications and selected 9 for an interview and a chance to earn a scholarship. The rubric utilized to score the essays for an interview is listed in the appendix.

Writing-
Seventy-four student artifacts were assessed from fall 2016 WI classes. A panel of 17 jurors, all WI faculty, assessed the artifacts and held a consensus meeting to determine the final score for each artifact. The rubric and prompts utilized to score the artifacts are provided below in the Appendix. The jurors assigned a consensus score of developing, proficient, or advanced. Below are the results of the assessment.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Advanced</th>
<th>Proficient</th>
<th>Developing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>19.83%</td>
<td>45.7%</td>
<td>29.87%</td>
</tr>
<tr>
<td>Analysis/Critical Thinking</td>
<td>17.08%</td>
<td>39.17%</td>
<td>37.74%</td>
</tr>
<tr>
<td>Grammar/Mechanics</td>
<td>16.11%</td>
<td>45.29%</td>
<td>34.21%</td>
</tr>
<tr>
<td>Format</td>
<td>15.16%</td>
<td>40.91%</td>
<td>39.48%</td>
</tr>
<tr>
<td>Percentage Average</td>
<td>17.04%</td>
<td>42.76%</td>
<td>35.32%</td>
</tr>
</tbody>
</table>
In the spring of 2017, the Writing Curriculum Committee approved the following institutional benchmark and proposed a change of wording from ‘Writing Intensive’ to ‘Writing in the Discipline’. The change has been approved and will be implemented by fall 2018.

Writing Benchmark-

70% of AWC students in Writing in the Discipline (Writing Intensive) classes will demonstrate a writing proficiency of a level of “2”, or proficient, on a writing artifact evaluated by a blind juried assessment team comprised of disciplinary scholars. This percentage will be determined by a random sample of WI writing artifacts.

Digital Literacy-

Digital Literacy was assessed for the first time institutionally in 2016-2017. The GECC received 78 student artifacts of which approximately half were ‘assessed’. The assessment process itself revealed several issues that must be addressed before a valid assessment of digital literacy can be conducted on an institutional basis. To address the issues the GECC has agreed that:

- Digital Literacy SLOs need to be revisited
- All focus areas to greater explanation & context for faculty
- Focus area rubrics should be provided to faculty who will be submitting focus area artifacts
- Specific student artifacts must be requested
- Include students in the assessment request

The table below reflects how the artifacts received were scored:

<table>
<thead>
<tr>
<th>Digital Literacy assignment components and expectations</th>
<th>Exceeds</th>
<th>Meets</th>
<th>Needs Improvement</th>
<th>Unable to Determine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>27%</td>
<td>33%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Quantitative Analysis

The math department approved the following institutional benchmark for 2016-2017:

70% or more of students enrolled in GE courses designated Quantitative Analysis will be able to identify and extract relevant data from given mathematical or contextual situations; and/or select known models or develop appropriate models that organize the data into tables or spreadsheets; and/or obtain correct mathematical results and state those results with appropriate qualifiers. The table below reflects the results collected in MAT 151 sections:

<table>
<thead>
<tr>
<th>Competency</th>
<th>Measures</th>
<th>Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate a fundamental understanding of exponential and logarithmic functions</td>
<td>Set up and evaluate an exponential growth model</td>
<td>48%</td>
</tr>
<tr>
<td>Investigate linear functions and use them to model real world data</td>
<td>Finding the line of best fit</td>
<td>60.6%</td>
</tr>
<tr>
<td></td>
<td>Finding the correlation coefficient and interpreting</td>
<td>51.6%</td>
</tr>
<tr>
<td></td>
<td>Using the line to make a prediction</td>
<td>49.2%</td>
</tr>
<tr>
<td></td>
<td>Average rate of change</td>
<td>53.5%</td>
</tr>
</tbody>
</table>
Course, Academic Program, and Department Assessments

Assessment plans contain information on: Outcomes/Goals, Measures, Results, Analysis, Recommendations, and Actions and is entered in Tk20, AWC’s assessment system.

- Course plans completed: 48
- Academic program plans completed: 3 (certificates and programs)
- Course cluster plan completed: 1
- Institutional departments plans completed: 14

Several assessment plans have been included in the appendices to provide evidence of AWC’s ongoing efforts to improve teaching and learning.

Assessment Coalition

The Assessment Coalition has been established to encourage the assessment of teaching, learning, and services at AWC by creating opportunities for individuals to discuss, document, and share assessment results and the changes being implemented based on the results. The coalition was developed and approved late in the spring of 2016. One meeting was held in spring 2016 with the intent to hold more meetings and plan activities/outreach in fall 2017.

Mission Statement

The Assessment Coalition is dedicated to providing support, resources, and opportunities for faculty and administrators to discuss, conduct, and share thorough, thoughtful, critical analysis and reflection of student learning and services provided at Arizona Western College and to encouraging students to become agents in their own learning.

Goals

- Support and sustain a culture of assessment.
- Share information about assessment practices of curricular, co-curricular, and institutional services and develop a shared language and demonstrated understanding of assessment on campus.
- Survey faculty, administrators, staff, and students on their understanding of assessment and current assessment efforts.
- Provide opportunities for students to develop an understanding of the value of learning and assessment
- Encourage students to become agents of their learning.
- Solicit feedback about faculty, staff, administrator, and student needs related to assessment.
- Provide opportunities for professional development on departmental goals and learning outcomes assessment.
- Encourage the use of assessment plan data to improve student learning and services.
- Create and update Assessment Coalition webpage annually to demonstrate how institutional assessment results and surveys are used to improve learning and services at Arizona Western College.

Membership

Membership in the Coalition is voluntary and time limits are fluid to allow for diverse, creative, and innovative discussions and support of institutional assessment. Membership will include:

- The Director of Assessment, Program Review, Curriculum and Articulation
- Faculty
- Administrators
- Students
2016-2017 Assessment Summary

AWC faculty, administrators, and staff continue to attend assessment workshops and training sessions, develop program and departmental goals and learning outcomes, and increase the number and quality of completed program reviews and assessment plans.

Each year many of the assessment plans and program reviews have improved in quality. Many of the individuals and departments who have submitted assessment plans and program reviews are demonstrating greater levels of understanding of the assessment process, the value of assessment, and the benefits of on-going assessment. Sixteen of the submitted assessment plans were well written. The remaining assessment plans were lacking one or more of the following: benchmarks, standards, detailed findings, recommendations, and/or planned actions to improve teaching and learning or services but with support and encouragement, the goal is to improve the quality for all assessment plans in the future.

The faculty are also making great progress toward improving assessment as an institution. Their hard work was evidenced this year by their efforts to collect and assess student artifacts in digital literacy, writing, and quantitative analysis. The development and approval of two institutional benchmarks was also possible because of the great efforts of the faculty.

The establishment of the Prior Learning Assessment (PLA) process was another great achievement in 2016-2017 for AWC. PLA now has a clearly defined process as well as its own webpage and section in the catalog. This accomplishment would not have been possible without the combined efforts of the Director or Transfer Services, the Director of Assessment, Program Review, Curriculum and Articulation, and the faculty.

The goals for 2017-2018 align very closely with the newly established Assessment Coalition group. A group that hopes to play a large part in the change in culture toward assessment at AWC. The goals for 2017-2018 are:

- Support and sustain a culture of assessment.
- Share information about assessment practices of curricular, co-curricular, and institutional services and develop a shared language and demonstrated understanding of assessment on campus.
- Survey faculty, administrators, staff, and students on their understanding of assessment and current assessment efforts.
- Provide opportunities for students to develop an understanding of the value of learning and assessment.
- Encourage students to become agents of their learning.
- Solicit feedback about faculty, staff, administrator, and student needs related to assessment.
- Provide opportunities for professional development on departmental goals and learning outcomes assessment.
- Encourage the use of assessment plan data to improve student learning and services.
- Encourage faculty to continue to develop program level student learning outcomes for all of the associate degrees and certificates.
- Increase the general education student learning outcomes assessed at the institutional level.
$1000 Scholarship Opportunity!

Overview

AWC students participating in the Spring 2017 Student Showcase are eligible to apply for a scholarship in one of the following General Education Focus Areas: Digital Literacy, Communication, Quantitative Analysis, Scientific Literacy, and Civic Discourse. Scholarship recipients will be determined by the AWC General Education Curriculum Committee, which is comprised of faculty from across disciplines as well as the Director of Assessment. $5500 in scholarships will be awarded to successful applicants through the AWC Foundation and can be applied to AWC and/or a four-year transfer institution.

Process & Timeline

All scholarship applicants must complete the following and submit via email to: gened.committee@azwestern.edu:

- Application form (attached)
- 2-page essay OR 8-10 minute video (prompt and rubric attached)
- Copy of unofficial transcripts
- Picture/video of project to be presented at Showcase

All materials must be submitted by Friday, April 22nd at 12pm. Late submissions will not be considered.

Submissions will be reviewed and potential scholarship recipients will be asked to interview with members of the review committee on Friday, April 29th to determine the final scholarship recipient in each focus area. Scholarship awards will be presented during the Student Showcase.

Resources for Successful Applications

- In addition to the brief descriptions of General Education Focus areas below, please visit the General Education website for additional explanations and details about General Education at Arizona Western College: http://www.azwestern.edu/academic_services/instruction/assessment/general_education/

- The Writing Center will hold a Student Showcase Scholarship Workshop on Thursday, April 21st at 12pm to help students at all stages of the application process. Writing Center tutors are also available for additional support. Please contact the Writing Center to learn more: http://www.azwestern.edu/learning_services/student_success_center/writing_center.html
Appendix B

ESSAY PROMPT

Description: The purpose of AWC’s General Education curriculum is to give every student pursuing an undergraduate degree the basic skills and the familiarity with various branches of knowledge which are associated with college and university education and are useful in advanced study within the university and in life beyond the university. The ultimate goal of general education is to enable students to continue to participate with active, discerning commitment in the political, ethical, and aesthetic life of the community.

Critical Inquiry is at the heart of the general education curriculum. As you engage in courses in each of the General Education Focus Areas you are not simply laying the foundation for a degree program, you are exercising your curiosity, stretching your mind, and expanding your ability to understand, analyze, and apply what you learn in new ways that are unique to you and your inquiring mind.

Prompt: In a 2-page essay OR 8-10 minute video, thoroughly and thoughtfully explain how the project you are presenting for the Spring 2016 Student Showcase exemplifies your understanding and expression of one of the five AWC General Education Focus Areas:

- Digital Literacy
- Communication
- Quantitative Analysis
- Scientific Literacy
- Civic Discourse

For example, if you are presenting a science poster at the Showcase how does it demonstrate the outcomes identified for the Scientific Literacy Focus Area? Or is your presentation a better example of Digital Literacy or Communication? If you are presenting artwork or performing poetry or music, does your project align with Civic Discourse? Communication? How so and in what ways?

While you will need to identify one overall Focus Area with which your project most aligns and provide supporting details to explain why, you are encouraged to also identify any additional Focus Areas that your project may express. Making connections between, among, and across areas of knowledge and understanding is a hallmark of critical thinking and therefore valued as you describe your project’s merit within the General Education Focus Area(s).

Requirements: Effective essays/videos will:

- Briefly describe your project
- Identify the primary GE Focus Area expressed by your project
- Explain in detail how that focus area and its outcomes are expressed in your project
- Explore any additional Focus Areas/outcomes that may also be expressed in your project
- Describe what you discovered and learned as a result of this project
- Express what you are still curious about, even after completing the project

Descriptions of each Focus Area and their learning outcomes: (http://www.azwestern.edu/academic_services/instruction/assessment/general_education/focus_areas.html)
<table>
<thead>
<tr>
<th>Appendix C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appendix C</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content &amp; Analysis</th>
<th>Excellent (25-23 points)</th>
<th>Good (22-20 points)</th>
<th>Needs Improvement (19-below points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points _________</td>
<td>clearly describes project</td>
<td>identifies project</td>
<td>project unclear</td>
</tr>
<tr>
<td>Comments:</td>
<td>identifies GE Focus Area represented &amp; details how</td>
<td>identifies GE Focus Area represented</td>
<td>GE Focus Area relevance unclear</td>
</tr>
<tr>
<td></td>
<td>explores additional relevant Focus Areas</td>
<td>mentions other Focus Areas</td>
<td>other Focus areas not mentioned</td>
</tr>
<tr>
<td></td>
<td>describes what has been learned</td>
<td>discusses learning</td>
<td>learning process unclear</td>
</tr>
<tr>
<td></td>
<td>expresses remaining curiosity</td>
<td>remains curious</td>
<td>remaining curiosity unclear</td>
</tr>
</tbody>
</table>

| Organization & Flow | Points _________ | Comments: | | |
|---------------------|------------------|---------------|
| | utilizes transitions between and among ideas | might utilize some transitions between and among ideas | would benefit from transitions between and among ideas |
| | ideas are presented in a logical order | ideas may not be presented in a logical order | ideas not logically presented |
| | ideas are well-developed | ideas could be more fully developed | ideas undeveloped |

| Description | Points _________ | Comments: | | |
|-------------|-----------------|---------------|
| | uses appropriate language and interesting word choice | uses mostly appropriate language and some interesting word choice | appropriate and interesting language needed |
| | grabs the reader’s attention and maintains it throughout | grabs the reader’s attention but does not necessarily maintain it | does not effectively grab the reader’s attention |
| | illustrates ideas | illustrates some ideas | tells rather than illustrating ideas |

| Conventions | Points _________ | Comments: | | |
|-------------|-----------------|---------------|
| | meets all requisite guidelines | Mostly meets requisite guidelines | Does not meet requisite guidelines |
| | grammar does not impede clarity | Grammar might impede clarity | grammar likely impedes clarity |
| | presentation format (in writing or visual) is appropriate and appealing | Presentation format generally appropriate and appealing | presentation format may not be appropriate and/or appealing |

**Student Name:**        **Project:**

**Reviewer:**

**Total Points:** /100

**Recommend for Interview:**     ____Yes      ____No
## Rubric for Writing Intensive Course Assessment – 2016-2017

<table>
<thead>
<tr>
<th>Assessment Objectives</th>
<th>Performance Indicators</th>
<th>Advanced</th>
<th>Proficient</th>
<th>Developing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td>Uses organization &amp; development of controlling idea with specifics and transitions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analysis/Critical Thinking</strong></td>
<td>Demonstrates original, critical thinking and/or depth of analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grammar/Mechanics</strong></td>
<td>Demonstrates correct grammar and punctuation usage, accurate spelling and word choice, and sentence variety and clarity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>Uses correct format (MLA or APA) consistently and correctly</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Assessment Period(s): AY 2016-2017
Organization Type(s): College, Department, Division, Program, University
Organization(s): BCIS: Business ABUS
Display blank entries: No

AY 2016-2017

BCIS: Business ABUS

Quantitative Analysis
No Data

Demonstrate computer and internet literacy
No Data

Demonstrate understanding of the legal issues of business
No Data

Gather, interpret both graphically and numerically, business and economic data.
No Data

Ability to analyze the results of financial data
No Data
Demonstrate understanding of fundamental macro economic concepts

Measure 1:
In comprehensive final exams, students will successfully demonstrate an understanding of SUPPLY AND DEMAND. -80% of transfer Business students taking this assessment will achieve a minimum of 70% on related questions. -70% of non-business students taking this assessment will achieve a minimum of 70% on related questions.

Measure 1 Type: Direct
Measure 1 Results:
Of the 33 Business students, 15 students achieved a 70% or greater on the Measure 1 Supply and Demand questions. This represents approximately 45% of the 33 Business students. GOAL: 80% OUTCOME: 45% Of the 30 non-business students, 14 students achieved a 70% or greater on the M1 Supply and Demand questions. This represents approximately 47% of the 30 non-business students. GOAL: 70% OUTCOME: 47%

Measure 2:
In the comprehensive final exams, students demonstrated an understanding of the sources of UNEMPLOYMENT. -80% of transfer Business students taking this assessment will achieve a minimum of 70% on related questions. -70% of non-business students taking this assessment will achieve a minimum of 70% on related questions.

Measure 2 Type: Direct
Measure 2 Results:
Of the 33 Business students, 19 students achieved a 70% or greater on the Measure 2 Unemployment questions. This represents 58% of the Business students. GOAL: 80% OUTCOME: 58% Of the 30 non-business students, 22 students achieved a 70% or greater on the M2 Unemployment questions. This represents approximately 73% of the 30 non-business students. GOAL: 70% OUTCOME: 73%

Measure 3:
In comprehensive final exams, students demonstrate an understanding of INFLATION. -80% of transfer Business students taking this assessment will achieve a minimum of 70% on related multiple choice questions. -70% of non-business students taking this assessment will achieve a minimum of 70% on related questions.

Measure 3 Type: Direct
Measure 3 Results:
Of the 33 Business students, 23 students achieved a 70% or greater on the Measure 3 Inflation questions. This represents 70% of the Business students. GOAL: 80% OUTCOME: 70% Of the 30 non-business students, 23 students achieved a 70% or greater on the M3 Inflation questions. This represents approximately 77% of the 30 non-business students. GOAL: 70% OUTCOME: 77%

Measure 4:
In comprehensive final exams, students will demonstrate an understanding of FISCAL POLICY. -80% of transfer Business students taking this assessment will achieve a minimum of 70% on related multiple choice questions. -70% of non Business students taking this assessment will achieve a minimum of 70% on related multiple choice questions.

Measure 4 Type: Direct
Measure 4 Results:
Of the 33 Business students, 18 students achieved a 70% or greater on the Measure 4 Fiscal Policy questions. This represents 55% of the Business students. GOAL: 80% OUTCOME: 55% Of the 30 non-business students, 17 students achieved a 70% or greater on the M4 Fiscal Policy questions. This represents approximately 57% of the 30 non-business students. GOAL: 70% OUTCOME: 57%

Measure 5:
In comprehensive final exams, students demonstrate an understanding of MONETARY POLICY. -80% of transfer Business students taking this assessment will achieve a minimum of 70% on related multiple choice questions. -70% of non-business students taking this assessment will achieve a minimum of 70% on related questions.

Measure 5 Type: Direct
Measure 5 Results:
Of the 33 Business students, 10 students achieved a 70% or greater on the Measure 5 Monetary Policy questions. This represents approximately 30% of the Business students. GOAL: 80% OUTCOME: 30% Of the 30 non-business students, 10 students achieved a 70% or greater on the M5 Monetary Policy questions. This represents approximately 33% of the 30 non-business students. GOAL: 70% OUTCOME: 33%

Evidence Attachments:
2017 MACRO.xlsx

This Outcome was:
Partially Met

Findings:
Of the five measures, our business students partially met all 80% standards. M1 45% M2 58% M3 70% M4 55% M5 30% Of the five measures, our non-business students partially met all 70% standards. M1 47% M2 73% M3 77% M4 57% M5 33%

Target Level Achievement
Partially Met

*If less than Met, program should plan further action to improve performance.

Overall Summary of Findings (Optional entry: fill out after entering the results for the last outcome/goal being assessed if you would like to provide an overall summary of your findings for the course/program/department being assessed.)
Of the five measures, our business students partially met all 80% standards. M1 45% M2 58% M3 70% M4 55% M5 30% Of the five measures, our non-business students partially met all 70% standards. M1 47% M2 73% M3 77% M4 57% M5 33%

What strengths were displayed through the assessments of your measures?
A key strength that emerged from assessing these five measures is that our department-level consistent curriculum facilitates a collaborative department-wide assessment. Different from past assessment, the group of business students included both transfer and non-transfer business degrees. As reported last year, the writing intensive requirement will be phased out after this semester. Therefore, starting in Fall 2017, Macro students can focus on developing a more solid economic theory foundation.

What weaknesses were displayed through the assessments of your measures?
Using a new assessment measurement process, our students’ results fell short of some of our goals and clearly captured exact areas of opportunity within our division-level curriculum. In addition, the final exam for out next assessment cycle will be better organized to align with this new assessment measurement process. Given our new measurement process that combines both transfer and non-transfer business students, our non-business students performed at an equal or better level than our business students.

1.
The first recommendation is to align the final exam with the new assessment measures. This will expedite division-wide data collection.

2.
Based on the division-wide results, the Economics team will meet to review the outcomes and review teaching strategies for Measures 1, 4, and 5.

Revise Measurement Approach Planned Changes
Change Methods of Data Collection Planned Changes
Describe Changes The assessment measurement process will be refined this year and better aligned with the final exam assessment.
<table>
<thead>
<tr>
<th>Implement Additional Training</th>
<th>Planned Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe Changes</td>
<td>Beginning Fall 2017, the writing intensive requirement will no longer be in effect. Using three years of assessment data, the faculty team found that the extensive writing work load served as a barrier to students gaining a solid foundation in basic economic theory.</td>
</tr>
<tr>
<td>Person/ Group responsible for action</td>
<td>Economics Departmental Meeting</td>
</tr>
<tr>
<td>Target Date for implementation of the action</td>
<td>08/17/2017</td>
</tr>
<tr>
<td>Priority</td>
<td>High</td>
</tr>
<tr>
<td>Describe any additional resources needed (Leave blank if no additional resources are needed.)</td>
<td>The AWC Economics faculty team will meet August 16, 2017 to review the course-level assessment results in order to identify expanded teaching strategies for M1, M4, and M5.</td>
</tr>
</tbody>
</table>
Demonstrate understanding of fundamental microeconomic concepts

Measure 1:
In comprehensive final exams, students will respond to a comprehensive essay problem regarding SUPPLY AND DEMAND. - Business students taking this assessment will achieve a minimum of 70%. - 80% of students will achieve this level of success. In the comprehensive finals exam, essay responses are correlated with responses with multiple choice and matching questions. - Business students taking this assessment will achieve minimum of 70%. - 80% of students will achieve this level of success.

Measure 1 Type: Direct
Measure 1 Results: Of the 11 Business students, 4 students achieved a 70% or greater on the Measure 1 Supply and Demand questions. This represents approximately 36% of all Business students. GOAL: 80% OUTCOME: 36% Of the 43 non-business students, 28 students achieved a 70% or greater on the M1 Supply and Demand questions. This represents approximately 65% of the non-business students. GOAL: 70% OUTCOME: 65%

Measure 2:
In comprehensive final exams, students will respond to a comprehensive essay problem regarding ELASTICITY. - Business students taking this assessment will achieve a minimum of 70%. - 80% of students will achieve this level of success. In the comprehensive finals exam, essay responses are correlated with responses with multiple choice and matching questions. - Business students taking this assessment will achieve minimum of 70%. - 80% of students will achieve this level of success.

Measure 2 Results: Of all Business students, 6 of the 11 achieved a 70% or greater on the M2 Elasticity questions. This represents approximately 55% of the Business students. Of all non-business students, 32 of the 43 earned a 70% or greater on the M2 Elasticity questions. This represents approximately 74% of the non-business students.

Measure 3:
In comprehensive final exams, students will respond to a comprehensive essay problem regarding COST OF PRODUCTION. - Business students taking this assessment will achieve a minimum of 70%. - 80% of students will achieve this level of success. In the comprehensive finals exam, essay responses are correlated with responses with multiple choice and matching questions. - Business students taking this assessment will achieve minimum of 70%. - 80% of students will achieve this level of success.

Measure 3 Results: Of all Business students, 7 of the 11 achieved a 70% or greater on the M3 Cost of Production questions. This represents approximately 64% of the Business students. Of all non-business students, 31 of the 43 earned a 70% or greater on the M3 Cost of Production questions. This represents approximately 72% of the non-business students.

Measure 4:
In comprehensive final exams, students will respond to a comprehensive essay problem regarding MARKET STRUCTURES. - Business students taking this assessment will achieve a minimum of 70%. - 80% of students will achieve this level of success. In the comprehensive finals exam, essay responses are correlated with responses with multiple choice and matching questions. - Business students taking this assessment will achieve minimum of 70%. - 80% of students will achieve this level of success.

Measure 4 Results: Of all Business students, 7 of the 11 achieved a 70% or greater on the M4 Market Structures questions. This represents approximately 64% of the Business students. Of all non-business students, 31 of the 43 earned a 70% or greater on the M4 Market Structures questions. This represents approximately 72% of the non-business students.

Measure 5:
In comprehensive final exams, students will respond to a comprehensive essay problem regarding RESOURCE MARKETS. - Business students taking this assessment will achieve a minimum of 70%. - 80% of students will achieve this level of success. In the comprehensive finals exam, essay responses are correlated with responses with multiple choice and matching questions. - Business students taking this assessment will achieve minimum of 70%. - 80% of students will achieve this level of success.

Measure 5 Results: Of all Business students, 7 of the 11 achieved a 70% or greater on the M5 Resource Market questions. This represents approximately 64% of the Business students. Of all non-business students, 32 of the 43 earned a 70% or greater on the M5 Resource Market questions. This represents approximately 74% of the non-business students.

Evidence Attachments:
2017 MICRO.xlsx

Findings
Of the five measures, our business students partially met all 70% standards. M1 36% M2 55% M3 64% M4 64% M5 64% Of the five measures, our non-business students partially met all 70% standards. M1 65% M2 74% M3 72% M4 86% M5 74%

Target Level Achievement
Partially Met

What strengths were displayed through the assessments of your measures?
Using a new assessment measurement process, we combined all business students into one group and then all non-business students into a second group. The business group included both transfer and non-transfer business degrees. Our consistent, department-wide curriculum makes assessment comprehensive of all sections of students.

1. As a department, we need to refine our assessment collection measurement process by aligning the final exam with the process.

2. Next academic year, we need to discuss the aggregate assessment of all business students, both transfer and non-transfer. In past year, the business transfer student outcomes were higher than the aggregate group.

Revise Measurement Approach
Planned Changes

Collect and Analyze Additional Data and Information
Planned Changes

Change Methods of Data Collection
Planned Changes

Describe Changes
At our August 16, 2017 departmental meeting, we need to make the measurement and data collection process more efficient. We also need to consider how we assess business students.

Person/ Group responsible for action
Michelle Sims

Target Date for implementation of the action
08/16/2017

Priority
High

Describe any additional resources needed
The Economics department will meet to discuss the results of this year's assessment data to resolve these identified issues.
BIO 201 Assessment Plan Data

Course Outcome
Describe the physiology of muscle and muscle groups, sliding-filament model, and the relationship between muscles and the nervous system.

AY 2016-2017

MEASURE 1:
Goal: 70% of students will answer this question correctly.

At a neuromuscular junction, _______ is to the electrical signals as___________ is to the chemical language.

a. Na+, K+ /acetylcholine
b. Neurotransmitter/ Ca++
c. Ca++/ Na+
d. Myosin/ actin
e. None of the above are correct

MEASURE 1 TYPE: Direct
MEASURE 1 RESULTS: Result: 41% of students answered question correctly.

MEASURE 2:
Goal: 70% of students will answer this question correctly.

During muscle contraction, myosin cross bridges attach to which active sites?

a. actin filaments
b. thick filaments
c. Z discs
d. myosin filaments

MEASURE 2 TYPE: Direct
MEASURE 2 RESULTS: Result: 58% of students answered question correctly.

MEASURE 3:
Goal: 70% of students will answer this question correctly.

The sliding filament model of contraction involves ________.

a. the Z discs sliding over the myofilaments
b. the shortening of thick filaments so that thin filaments slide past
  c. actin and myosin shortening but not sliding past each other
  d. actin and myosin sliding past each other and overlapping

MEASURE 3 TYPE: Direct
MEASURE 3 RESULTS: Result: 44% of students answered question correctly.

MEASURE 4 TYPE: Direct
MEASURE 5 TYPE: Direct

FINDINGS
Aggregate 48% (mean of the mean) of students were able to answer the questions regarding muscle anatomy and physiology correctly. Improvement needed.
TARGET LEVEL ACHIEVEMENT

Not Met

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

Further Action Planned, Further Action Planned

OVERALL SUMMARY OF FINDINGS

Not all students who completed BIO-201 were assessed. Faculty will meet to discuss collaboration on devising better data collection and how to improve instruction/emphasis.

(OPTIONAL ENTRY: FILL OUT AFTER ENTERING THE RESULTS FOR THE LAST OUTCOME/GOAL BEING ASSESSED IF YOU WOULD LIKE TO PROVIDE AN OVERALL SUMMARY OF YOUR FINDINGS FOR THE COURSE/PROGRAM/DEPARTMENT BEING ASSESSED.)

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Students did best on answering question regarding molecular participants and physiology of muscle contraction.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Goal not met. Match between instruction and knowledge of both physiology does NOT appear to exist.

1. Faculty who teach BIO-201 will meet and discuss data and devise direct plan of action to improve standards of instruction for activities at the neuromuscular junction.

2. Faculty who teach BIO-201 will meet and discuss data and devise direct plan of action to improve standards of instruction for activities during myosin cross bridge formation.

3. Faculty who teach BIO-201 will meet and discuss data and devise direct plan of action to improve standards of instruction for activities of sliding filament model.

COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION

Planned Changes

CHANGE METHODS OF DATA COLLECTION

Planned Changes

DESCRIBE CHANGES

With awareness of weaknesses, faculty will individually work to improve instruction in needed areas and will meet to discuss better means of data collection.

PERSON/GROUP RESPONSIBLE FOR ACTION

Biology Anatomy and Physiology Professors.

TARGET DATE FOR IMPLEMENTATION OF THE ACTION

08/14/2017

PRIORITY

High
Course Outcome

Identify the joint classification and potential movements at all skeletal articulations.

AY 2016-2017

MEASURE 1:
Goal: 70% of students queried will answer question correctly.
The more stable a joint is
a. the less mobility it has
b. the more mobility it has
c. Stability has little to do with mobility.

MEASURE 1 TYPE:
Direct

MEASURE 1 RESULTS:
Result: 67% of students answered question correctly.

MEASURE 2:
Goal: 70% of students queried will answer question correctly.
What is moving a limb away from the median plane of the body along the frontal plane called?
a. adduction
b. abduction
c. inversion
d. dorsiflexion

MEASURE 2 TYPE:
Direct

MEASURE 2 RESULTS:
Result: 73% of students answered question correctly.

MEASURE 3:
Goal: 70% of students queried will answer question correctly.
The gliding motion of the wrist is accomplished because of the ________ joint.
a) hinge
b) plane
c) pivot
d) condyloid

MEASURE 3 TYPE:
Direct

MEASURE 3 RESULTS:
Goal: 70% of students queried will answer question correctly.
Result: 47% of students answered correctly.

FINDINGS
Most students knew the names of the action at joints, less knew about joint stability. Fewer than 50% of students were able to identify type of joint at wrist.

TARGET LEVEL ACHIEVEMENT
Partially Met

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

OVERALL SUMMARY OF FINDINGS
Faculty will meet and discuss better methods of instruction and data collection.

(OPTIONAL ENTRY: FILL)
OUT AFTER ENTERING THE
RESULTS FOR THE LAST
OUTCOME/GOAL BEING
ASSESSED IF YOU WOULD
LIKE TO PROVIDE AN
OVERALL SUMMARY OF
YOUR FINDINGS FOR THE
COURSE/PROGRAM
/DEPARTMENT BEING
ASSESSED.)

WHAT STRENGTHS WERE
DISPLAYED THROUGH THE
ASSESSMENTS OF YOUR
MEASURES?

Students seem to have understanding of movement along planes of body.

WHAT WEAKNESSES WERE
DISPLAYED THROUGH THE
ASSESSMENTS OF YOUR
MEASURES?

Students need help identifying motion at complex joints.

ADDITIONAL COMMENTS:

Better data collection will improve reliability of results.

1. Work to improve student understanding of relationship between joint stability and joint mobility.

2. Goal met. Work on better data collection.


CHANGE METHODS OF DATA
COLLECTION

Planned Changes

DESCRIBE CHANGES

Faculty will meet and discuss methods of collaboration to improve instruction and data collection.

PERSON/ GROUP
RESPONSIBLE FOR ACTION

Biology Anatomy and Physiology Professors.

TARGET DATE FOR
IMPLEMENTATION OF THE
ACTION

08/14/2017

PRIORITY

High

Course Outcome

Identify the various tissues and structures of the integumentary system and describe the function of each.

AY 2016-2017

MEASURE 1:

Goal: 70% of students will answer this question correctly.

Regarding the integumentary system, the epidermis is ________________ tissue.
While the dermis mostly _________________ tissue.

a. Connective/muscular  
b. Muscular/ epithelial  
c. Epithelial/connective  
d. Connective/epithelial  
e. None of the above are correct

MEASURE 1 TYPE: Direct  
MEASURE 1 RESULTS: Result: 73% of students answered question correctly.

MEASURE 2:  
The epidermis consists of five layers of cells, each layer with a distinct role to play in the health, well-being, and functioning of the skin. Which of the following layers is responsible for cell division and replacement?  
a. stratum corneum  
b. stratum lucidum  
c. stratum granulosum  
d. stratum basale

MEASURE 2 TYPE: Direct  
MEASURE 2 RESULTS: Result: 73% of students answered question correctly.

MEASURE 3:  
Nutrients reach the surface of the skin (epidermis) through the process of ________.

a. absorbing materials applied to the surface layer of the skin  
b. utilizing the products of merocrine glands to nourish the epidermis  
c. filtration  
d. diffusing through the tissue fluid from blood vessels in the dermis

MEASURE 3 TYPE: Direct  
MEASURE 3 RESULTS: Result: 71% of students answered question correctly.

FINDINGS  
Goal met. Data collection not sufficient to assure accuracy of results.

TARGET LEVEL ACHIEVEMENT  
Met

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?  

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?  

ADDITIONAL COMMENTS:  

1. Better methods of data collection will result in more reliable data.  
2. Better methods of data collection will result in more reliable data.

Over 70% of students were able to answer all three questions correctly. Mean of the mean 72%

Least successful in answering physiology based question.

Not all students were queried.
3. Better methods of data collection will result in more reliable data.

<table>
<thead>
<tr>
<th><strong>COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION</strong></th>
<th>Planned Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHANGE METHODS OF DATA COLLECTION</strong></td>
<td>Planned Changes</td>
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<td><strong>DESCRIBE CHANGES</strong></td>
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<td>Better methods of data collection.</td>
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<tr>
<td><strong>PERSON/ GROUP RESPONSIBLE FOR ACTION</strong></td>
<td>Biology Anatomy and Physiology Professors.</td>
</tr>
<tr>
<td><strong>TARGET DATE FOR IMPLEMENTATION OF THE ACTION</strong></td>
<td>08/14/2017</td>
</tr>
<tr>
<td><strong>PRIORITY</strong></td>
<td>High</td>
</tr>
</tbody>
</table>
CHM 130 Assessment Plan Data

Course Outcome
Successful conversion of various measured units (length, mass, pressure, and energy).

AY 2016-2017

MEASURE 1:
The average student score (N ~ 55) on the following Sapling Learning online homework questions will be 75% or higher:

HW 1-17) A reaction produces 0.871 moles of H₂O. How many molecules are produced?

Number molecules

HW 1-18) Convert 1.81 \times 10^{21} \text{ atoms of carbon to moles of carbon.}

Number \text{ mol C}

HW 2-7) Convert 6.36 \text{ km to centimeters.}

Number \text{ cm}

HW 2-8) Convert the following volume to its equivalent in milliliters:

61.0 \mu \text{L} = \text{ mL}

HW 2-11) A certain hybrid car has a mileage rating of 53 miles per gallon. If the car makes a trip of 273 miles, how many gallons of gasoline will be used?

Number \text{ gallons}
MEASURE 1 TYPE: Direct
MEASURE 1 RESULTS:

Exam 1: 7) Convert 453.4 kg to pounds.
a. 453.4 pounds
b. 205.6 pounds
c. 1999 pounds
d. 999.7 pounds

Exam 1:8) Convert 4.138 fl oz to mL.
   a. 45.35 mL
   b. 122.4 mL
   c. 0.1399 mL
   d. 4.138 mL

Exam 1:14) If the pressure is 466 mm Hg, what is this in psi?
   a. 0.0486 psi
   b. 24093 psi
   c. 45.8 psi
   d. 9.01 psi

Exam 1: Short Answer 1b) Convert 2.25 ft to cm. (3 pts)

Exam 1: Short Answer 4d) Circle the best answer: If you're unit converting, the larger unit needs to be a larger / smaller number than the smaller unit. (1 pt)

Exam 2:2)
   a. 5.25x10^{14} \text{ s}^{-1}
   b. 9.23x10^{-13} \text{ s}^{-1}
   c. 1.91x10^{-15} \text{ s}^{-1}
   d. 5.25x10^5 \text{ s}^{-1}

Exam 3:17)
   a. 48.63 cal
   b. 0.08604 cal
   c. 203.5 cal
   d. 11.62 cal

MEASURE 2 TYPE: Direct

MEASURE 2 RESULTS:
MEASURE 3:

The average student score (N ~ 55) on the following final exam questions will be 60 % or higher:

Final: 9) Convert 180 pounds to grams.
   a. 180 grams
   b. 70.87 grams
   c. 0.3965 grams
   d. 81720 grams

Final: Short Answer 1c) Based on your answer in 1a (in grams), how many mg of mercury do you have? (3 pts)

MEASURE 3 TYPE: Direct

MEASURE 3 RESULTS:
EVIDENCE ATTACHMENTS:

CHM 130 Outcome 1 - Unit Conversion.xlsx

FINDINGS

<table>
<thead>
<tr>
<th>Question Number</th>
<th>% Score</th>
<th>Benchmark</th>
<th>Passed Benchmark?</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW 1-17</td>
<td>96.76</td>
<td>75</td>
<td>Y</td>
</tr>
<tr>
<td>HW 1-18</td>
<td>95.15</td>
<td>75</td>
<td>Y</td>
</tr>
<tr>
<td>HW 2-7</td>
<td>98.62</td>
<td>75</td>
<td>Y</td>
</tr>
<tr>
<td>HW 2-8</td>
<td>96.99</td>
<td>75</td>
<td>Y</td>
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<tr>
<td>HW 2-11</td>
<td>99.06</td>
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<tr>
<td>HW 2-18</td>
<td>99.47</td>
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<td>HW 6-1</td>
<td>98.09</td>
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<tr>
<td>Exam 1/7</td>
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<td>Exam 1/8</td>
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<td>Exam 1/14</td>
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<td>Exam 1/1b</td>
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<td>Exam 3/17</td>
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<tr>
<td>Final / 9</td>
<td>81.01</td>
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<tr>
<td>Final / 1c</td>
<td>57.90</td>
<td>60</td>
<td>N</td>
</tr>
</tbody>
</table>

TARGET LEVEL ACHIEVEMENT

Met

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Due to the % range (96.76% - 99.47% for Sapling Homework, 59.98% - 82.61% for exam questions, and 57.90% / 81.01% for final questions), the students seem to understand the process for converting between units, regardless for which units are given. Two of the questions in all of the measures fell below the benchmark (Exam 1 / 14, on converting pressure units; and Final / 1c, on metric conversion). The answer breakdown for the pressure conversion...
is as follows:

Answers to question 1-14  
9.01 (correct answer) 34
45.8 (madeup answer) 10
24093 (inverted answer) 9
0.0486 (madeup answer) 3

Interesting to note that the madeup answers (numbers the instructor madeup and are not calculatable through the problem) are essentially equal to the inverted answer (multiply instead of dividing). This tells the instructor that guessing may be involved (see weaknesses below). Despite this, and the fact that it was assessed multiple times (3 different exams and the final) and is a technique used throughout CHM 130 (with many different units), this is the one of the strongest (if not the actual strongest) measure of student success in CHM 130.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

In measure 1, even though the students scored high on the assessments (96.76% - 99.47%), this includes only the students who attempted the questions and were correct. If the total number of students were included, the %range drops to 81.53% - 93.95%. One reason for this drop is students finishing the homework right at the due date (see attached spreadsheet for exact numbers), meaning most of the higher number questions (ex. question 18 vs. question 5) are rushed through or skipped. Also, many of the students finished the exams in the Testing Center on the day they were due (anecdotally before the 1st due date about 50 exams out of 100 were finished during the last 10 hours the exams were opened). A lot of blank and/or guessed answers resulted. For both of these weaknesses, encouragement to avoid procrastination would be a good thing.

ADDITIONAL COMMENTS:

The benchmark for the Exam and Final questions was set at 60%, which is the lowest score a student can attain and achieve a passing score in CHM 130. The benchmark for the Sapling Learning homework questions was arbitrarily set at 75%, due to the assumption that the student would have more time and resources to correctly answer this assessment.

Sapling Homework results were downloaded directly from their website (saplinglearning.com) and compiled on a spreadsheet. The %correct are an average based on both the regular homework and the makeup homeworks (same questions and scoring for each). The % overall includes the entire class (students who are correct vs. total number of students, which I used 55).

Exam and final questions were a mixture of multiple choice (2 pts for correct, 0 for incorrect) and short answer (based on how correct the student was).

1. Encourage students to finish their assessments as early as possible.
2. As this is a hybrid class relying on online lectures, a reminder of this and the difficulty involved would be useful.
3. Despite the high %range, it is always a good idea to find ways to improve the teaching of this subject (unit conversion), especially placing them in context with the rest of chemistry.

DESCRIBE CHANGES

Encouragement to finish assessments as early as possible (more reminders of due dates, for example), a reminder / intro into hybrid classes, and placing unit conversion in context with the rest of chemistry.

PERSON/ GROUP RESPONSIBLE FOR ACTION

Robert Killin

TARGET DATE FOR IMPLEMENTATION OF THE ACTION

08/12/2017

PRIORITY

Medium

Course Outcome

Successful manipulation of chemical equations, specifically balancing them.
AY 2016-2017

MEASURE 1:

The average student score (N ~ 55) on the following Sapling Learning online homework questions will be 75% or higher:

Balance the following equations by inserting the appropriate coefficients.

\[ \text{P}_4 + \text{O}_4 \rightarrow \text{P}_2\text{O}_4 \]

Tip: If you need to click the button.

\[ \text{C}_2\text{H}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} \]

HW 5-4)

Balance the following equations by inserting coefficients as needed.

1. \[ \text{C}_2\text{H}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} \]

2. \[ \text{F}_2\text{O}_4 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{PO}_4 \]

HW 5-5)

Balance the following equations by inserting coefficients as needed.

1. \[ \text{CaCO}_3 + \text{HCl} \rightarrow \text{CaCl}_2 + \text{CO}_2 + \text{H}_2\text{O} \]

2. \[ \text{C}_4\text{H}_6\text{O}_3 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} \]

HW 5-6)

Balance the following equation by inserting coefficients as needed.

\[ \text{Al}_2\text{C}_3 + \text{HCl} \rightarrow \text{AlCl}_3 + \text{CH}_4 \]

HW 5-7)

Balance the following equations by inserting coefficients as needed.

1. \[ \text{H}_2\text{S} + \text{LiOH} \rightarrow \text{Li}_2\text{S} + \text{H}_2\text{O} \]

2. \[ \text{SO}_2 + \text{O}_3 \rightarrow \text{SO}_3 \]

HW 5-8)

Balance the following equations by inserting coefficients as needed.

1. \[ \text{FCl}_3 + \text{Cl}_2 \rightarrow \text{PCl}_3 \]

2. \[ \text{Mg}_2\text{N}_3 + \text{HCl} \rightarrow \text{MgCl}_2 + \text{NH}_3 \]

HW 5-9)

What is the daughter nucleus (nuclide) produced when \(^{208}\text{Bi}\) undergoes alpha decay?

HW 10-3)

Replace the question marks with the proper integers or symbols.

What is the daughter nucleus (nuclide) produced when \(^{90}\text{Sr}\) undergoes beta decay by emitting an electron?

HW 10-4)

Replace each question mark with the appropriate integer or symbol.
HW 10-5) What is the daughter nucleus produced when $^{83}$Sr undergoes positron emission?

Replace each question mark with the appropriate integer or symbol.

HW 10-8) How many neutrons are needed to initiate the fission reaction shown?

$^{235}_{92}$U + $\gamma$ $\rightarrow$ $^{239}_{90}$Sr + $^{137}_{56}$Xe + $\gamma$

Number

neutrons

HW 10-9) Complete these nuclear reactions.

$^1$H $\rightarrow$ $^1$H + $\gamma$

$^{64}_{29}$Cu $\rightarrow$ $^{64}_{29}$Cu + $\beta$

$^{238}_{92}$U $\rightarrow$ $^{234}_{90}$Pb + $\gamma$

MEASURE 1 TYPE: Direct

MEASURE 1 RESULTS:

% Score for All Attempts vs % Score for All Students (N ~ 55) - Outcome 4

% Score

0 15 30 45 60 75 90

HW 10-4 HW 10-5 HW 10-6 HW 10-7 HW 10-8 HW 10-9 HW 10-4 HW 10-5 HW 10-6 HW 10-7 HW 10-8 HW 10-9

% Correct 96.82 98.50 98.96 99.75 99.5 99.41 95.18 95.11 97.72 98.95 97.45

% Overall 70.15 70.23 78.15 76.25 74.98 76.85 83.57 84.89 95.33 94.12 102.18

MEASURE 2:
The average student score (N ~ 55) on the following exam questions will be 60 % or higher:

Exam 3:3) In the unbalanced equation Al + CuSO$_4$ $\rightarrow$ Al$_2$(SO$_4$)$_3$ + Cu, what is the coefficient of Cu when the equation is balanced?

a. 1

b. 2

c. 3

d. 4

Co$_2$O$_3$ + C $\rightarrow$ Co + CO$_2$

1a) Balance this equation. (2 pts)

MEASURE 2 TYPE: Direct
MEASURE 3:

The average student score (N ~ 55) on the following final exam questions will be 60 % or higher:

Final: 11) After you balance the equation Na₃PO₄ + Al₂(SO₄)₃ à AlPO₄ + Na₂SO₄, how many AlPO₄'s are there?
   a. 1
   b. 2
   c. 3
   d. 4

Final: Short Answer 2a) Balance the equation Ba(NO₃)₂ + BCl₃ à BaCl₂ + B(NO₃)₃ (2 pts)
Final / 32)

\[
\begin{align*}
235^{\text{92}}U & \rightarrow ? + 4_2^1\text{He} \\
\text{a.} & \quad 92^{\text{235}}\text{U} \\
\text{b.} & \quad 90^{\text{231}}\text{Th} \\
\text{c.} & \quad 90^{\text{233}}\text{Th} \\
\text{d.} & \quad 93^{\text{235}}\text{Np}
\end{align*}
\]

Final / 34)

Question

\[
\frac{200}{79}^{\text{79}}\text{Au} + ? \rightarrow \frac{200}{78}^{\text{78}}\text{Pt}
\]

Answer

0

\[\begin{align*}
\text{1} \text{e} \\
\text{2} \text{He} \\
\text{1} \text{p} \\
\text{0} \text{n}
\end{align*}\]

Outcome 4 % Scores on the Final (N~55)

![Bar chart showing scores for different tests](https://azwestern.tk20.com/campustoolshighered/jsp/k12/reports/_6efe57...)

EVIDENCE ATTACHMENTS:

CHM 130 Outcome 4 - Balancing.xlsx
### FINDINGS

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<thead>
<tr>
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<th>% Score</th>
<th>Benchmark</th>
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<td>Y</td>
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<td>Y</td>
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<tr>
<td>Final - 32</td>
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</tr>
<tr>
<td>Final - 34</td>
<td>52.23</td>
<td>60</td>
<td>N</td>
</tr>
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</table>

#### Answers to question Final-34
- electron (correct answer) #28
- proton (opposite answer) #22
- helium (another decay) #1
- neutron (another decay) #3

### TARGET LEVEL ACHIEVEMENT

#### WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Due to the % range (95.18% - 99.76% for Sapling Homework, 66.99% / 68.19% for exam questions, and 52.23% / 86.81% for final questions), the students seem to understand the process for balancing chemical equations. Only one of the questions in all of the measures (Measure 3, on balancing a nuclear reaction) fell below the benchmark of 60% (at 52.23%). The answer breakdown is in the “Findings” section above. An interesting note is that the students scored 86.81% on Final – 32, which is a similar question, but doesn’t involve a negative sign which confuses students. Despite this, and the fact that it was assessed multiple times (2 different exams and the final), this is a strong measure of student success in CHM 130.

#### WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

In measure 1, even though the students scored high on the assessments (95.18% - 99.76%), this includes only the students who attempted the questions and were correct. If the total number of students were included, the %range drops to 70.16% - 102.19%. One reason for this drop is students finishing the homework right at the due date (see attached spreadsheet for exact numbers), meaning the last of the homework questions (HW 10) are rushed through or skipped. Also, many of the students finished the exams in the Testing Center on the day they were due (anecdotally before the 1st due date about 50 exams out of 100 were finished during the last 10 hours the exams were opened). A lot of blank and/or guessed answers resulted. For both of these weaknesses, encouragement to avoid procrastination would be a good thing. On top of this, some of the students finished the questions multiple times for practice, so the actual number of students answering the questions is unclear. A final note is that the total number of assessed questions (2 on exam 3, 4 on the final) is smaller than the other outcomes. Part of the reason for this is the nuclear reactions is introduced in the last section of lecture and is not assessed until the final (due to the length of the previous sections assessed in Exam 4).
ADDITIONAL COMMENTS:
The benchmark for the Exam and Final questions was set at 60%, which is the lowest score a student can attain and achieve a passing score in CHM 130. The benchmark for the Sapling Learning homework questions was arbitrarily set at 75%, due to the assumption that the student would have more time and resources to correctly answer this assessment.

Sapling Homework results were downloaded directly from their website (saplinglearning.com) and compiled on a spreadsheet. The %correct are an average based on both the regular homework and the makeup homeworks (same questions and scoring for each). The % overall includes the entire class (students who are correct vs. total number of students, which I used 55).

Exam and final questions were a mixture of multiple choice (2 pts for correct, 0 for incorrect) and short answer (based on how correct the student was).

1. Encourage students to finish their assessments as early as possible.
2. As this is a hybrid class relying on online lectures, a reminder of this and the difficulty involved would be useful.
3. Despite the high %range, it is always a good idea to find ways to improve the teaching of this subject (unit conversion), especially placing them in context with the rest of chemistry.

DESCRIBE CHANGES
Encouragement to finish assessments as early as possible (more reminders of due dates, for example), a reminder / intro into hybrid classes, and placing unit conversion in context with the rest of chemistry.

PERSON/ GROUP RESPONSIBLE FOR ACTION
Robert Killin

TARGET DATE FOR IMPLEMENTATION OF THE ACTION
08/12/2017

PRIORITY
Medium

Course Outcome
Successful usage of the Periodic Table to determine the characteristics of atoms.

AY 2016-2017

MEASURE 1: The average student score (N ~ 55) on the following Sapling Learning online homework questions will be 75 % or higher:

The chemical symbol of several elements are given. Determine the atomic number of each element.

<table>
<thead>
<tr>
<th>Chemical Symbol</th>
<th>Atomic Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Li</td>
<td></td>
</tr>
<tr>
<td>Br</td>
<td>Number</td>
</tr>
<tr>
<td>Br</td>
<td>Number</td>
</tr>
<tr>
<td>I</td>
<td>Number</td>
</tr>
</tbody>
</table>

HW 3-9)
HW 3-11)

How many protons, neutrons, and electrons are there in a neutral atom of In (Indium-113)?

<table>
<thead>
<tr>
<th>Number</th>
<th>protons</th>
<th>Number</th>
<th>neutrons</th>
<th>Number</th>
<th>electrons</th>
</tr>
</thead>
</table>

Complete this table for neutral isotopes.

Element: Se  
Mass number: 85 65  
Number of neutrons: 56 47 24  
Number of protons:  
Number of electrons:  

HW 3-12)

Give the nuclear symbol for the isotope of gallium, Ga, that contains 40 neutrons per atom.

Ga

Replace the question marks with the proper integers.

HW 3-13)

Give the nuclear symbol (isotope symbol) for the isotope of bromine, Br, that contains 46 neutrons per atom.

Br

Replace question marks with the proper integers.

If necessary, use the button that looks like two red arrows to clear your changes and return the answer box to its original state.

HW 3-14)

Rank these elements according to atomic radius.

Largest radius: Sr, Ba, Br, Ca, Mg

Smallest radius: Sr, Ba, Br, Ca, Mg

HW 3-18)

Rank these elements according to atomic radius.

Largest radius: Br, Ba, Ca, Mg, Sr

Smallest radius: Br, Ba, Ca, Mg, Sr

HW 3-19)

Rank these elements according to first ionization energy.

Highest ionization energy: Br, Ba, Ca, Mg, Sr

Lowest ionization energy: Br, Ba, Ca, Mg, Sr

HW 3-20)

Rank these elements according to first ionization energy.

Highest ionization energy: Br, Ba, Ca, Mg, Sr

Lowest ionization energy: Br, Ba, Ca, Mg, Sr
Metals and nonmetals can react with each other to form ions. Complete these statements.

A potassium atom \[ \text{to form a } \boxed{\text{K}^+} \]

A sulfur atom \[ \text{to form a } \boxed{\text{S}^{2-}} \]

HW 4-1)

For each of the elements below, identify the charge of its most common ion.

<table>
<thead>
<tr>
<th>Element</th>
<th>Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>+1</td>
</tr>
<tr>
<td>Li</td>
<td>+1</td>
</tr>
<tr>
<td>Se</td>
<td>+2</td>
</tr>
<tr>
<td>Al</td>
<td>+3</td>
</tr>
</tbody>
</table>

HW 4-2)

Rank these elements according to electronegativity.

- Most electronegative: Al
- Least electronegative: F

HW 6-13)

Many hospitals and some doctor’s offices use radioactive isotope for diagnosis and treatment, or in palliative cancer/terminal symptoms such as pain. Some radioactive isotopes used in medicine are listed below.

Write the isotope symbol for each radioactive isotope. Replace the question mark with the proper integer. Replace the letter X with the proper element symbol.

c) Phosphorus-32: \[ \boxed{\text{P}^{32}} \]

d) Cobalt-60: \[ \boxed{\text{Co}^{60}} \]

e) Potassium-85: \[ \boxed{\text{K}^{85}} \]

HW 10-1)

Fill in the missing mass number and atomic number for each of these particles or types of radiation.

<table>
<thead>
<tr>
<th>Alpha ((\alpha))</th>
<th>Beta ((\beta))</th>
<th>Gamma ((\gamma))</th>
<th>Neutron ((\text{n}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ \text{He} ]</td>
<td>[ \text{e}^- ]</td>
<td>[ \gamma ]</td>
<td>[ \text{n} ]</td>
</tr>
</tbody>
</table>

Tip: To restore a module to its original state, click the button that looks like two red arrows.

HW 10-2)

MEASURE 1 TYPE:
Direct

MEASURE 1 RESULTS:
MEASURE 2:

The average student score (N ~ 55) on the following exam questions will be 60 % or higher:

Exam 2-7) How many electrons does rhenium have if it has a mass number of 166?
   a. 75
   b. 91
   c. 241
   d. 166

Exam 2-10) How many neutrons does 98Tc have?
   a. 98
   b. 55
   c. 43
   d. 131

Exam 2-11) Which of the following has the largest ionization energy?
   a. Li
   b. Be
   c. B
   d. C

Exam 2-12) Which of the following has the largest atomic radii?
   a. Li
   b. Be
   c. B
   d. C
Exam 2-13) To become similar to a noble gas, an cation will ___ electrons, which results in the cation having a ___ charge
   a. lose, positive
   b. lose, negative
   c. gain, negative
   d. gain, positive

Exam 2-16) Rb & P
   a. Rb⁺, P⁻³
   b. Rb⁻, P⁻³
   c. Rb⁺, P⁺³
   d. Rb⁻, P⁺³

Exam 2-2(short))
Fill out the following table for two neutral atoms. (1 pt each)

<table>
<thead>
<tr>
<th>Elemental Name</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Elemental Symbol</td>
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<tr>
<td>Atomic Number</td>
<td>51</td>
</tr>
<tr>
<td>Mass Number</td>
<td>122</td>
</tr>
<tr>
<td>number of neutrons</td>
<td>29</td>
</tr>
<tr>
<td>number of electrons</td>
<td>26</td>
</tr>
<tr>
<td>number of protons</td>
<td></td>
</tr>
</tbody>
</table>

Exam 2-4d) Which of the following atoms has the… (1 pt each)
   a. …larger atomic radii: Se or Br
   b. ... lower ionization energy: Se or Br

Exam 3-8) Thallium has ___ valence electrons.
   a. 3
   b. 4
   c. 5
   d. 6

Exam 3-2a) Draw the electron-dot structures for Bi, K, and Br. (3 pts)

MEASURE 2 TYPE:
Direct

MEASURE 2 RESULTS:
MEASURE 3:
The average student score (N ~ 55) on the following final exam questions will be 60 % or higher:

Final-5) How many neutrons does $^{195}$Pt have?
   a. 39
   b. 117
   c. 78
   d. 273

Final-6) A(n) ___ gains electrons, giving itself a ___ charge.
   a. cation, positive
   b. anion, positive
   c. cation, negative
   d. anion, negative

Final-6a) Draw the electron-dot structures for Si & Se. (2 pts)

MEASURE 3 TYPE: Direct

MEASURE 3 RESULTS:

Outcome 2 % Scores on the Final (N ~ 55)

EVIDENCE ATTACHMENTS: CHM 130 Outcome 2 - Atoms.xlsx
<table>
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<th>Benchmark</th>
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<td>Y</td>
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<td>Final / 6a</td>
<td>80.17</td>
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**TARGET LEVEL ACHIEVEMENT**  
Met

**WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?**  
Due to the % range (95.37% - 99.63% for Sapling Homework, 45.74% - 75.29% for exam questions, and 61.88% - 80.17% for final questions), the students seem to understand the general process for using the Periodic Table to determine the characteristics of atoms. In particular, HW 3-11 (filling a table for unknown atoms), which has an exam equivalent in Exam 2-2 (short). Both passed the benchmark (98.29% for HW 3-11 and 75.29% for 2-2(short)).

**WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?**  
In measure 1, even though the students scored high on the assessments (95.37% - 99.63% this includes only the students who attempted the questions and were correct. If the total number of students were included, the %range drops to 62.03% - 98.94%. One reason for this drop is students finishing the homework right at the due date (see attached spreadsheet for exact numbers), meaning the last of the homework questions (especially HW 10) are rushed through or skipped. Also, many of the students finished the exams in the Testing Center on the day they were due (anecdotally before the 1st due date about 50 exams out of 100 were finished during the last 10 hours the exams were opened). A lot of blank and/or guessed answers resulted. For both of these weaknesses, encouragement to avoid procrastination would be a good thing.

**ADDITIONAL COMMENTS:**  
The benchmark for the Exam and Final questions was set at 60%, which is the lowest score a student can attain and achieve a passing score in CHM 130. The benchmark for the Sapling Learning homework questions was arbitrarily set at 75%, due to the assumption that the student would have more time and resources to correctly answer this assessment.

Sapling Homework results were downloaded directly from their website (saplinglearning.com) and compiled on a spreadsheet. The %correct are an average based on both the regular homework and the makeup homeworks (same questions and scoring for each). The % overall includes the entire class (students who are correct vs. total number of students, which I used
Exam and final questions were a mixture of multiple choice (2 pts for correct, 0 for incorrect) and short answer (based on how correct the student was).

1. Encourage students to finish their assessments as early as possible.
2. As this is a hybrid class relying on online lectures, a reminder of this and the difficulty involved would be useful.
3. Since this outcome had several measures below the benchmark, increased focus on certain topics would be helpful. For example, spending more time on the Periodic Table and showing all the different parts of it would be helpful.

**Course Outcome**: Successful usage of the Periodic Table to determine the characteristics of multiple atoms / molecules.

**AY 2016-2017**

**MEASURE 1**: The average student score (N ~ 55) on the following Sapling Learning online homework questions will be 75 % or higher:

- HW 1-20)
  - Calculate the molar mass of each compound given below. Keep at least one decimal place in atomic masses from the periodic table.
  - a) $\text{K}_2\text{Sr}$
  - b) $\text{K}_2\text{N}$
- HW 4-7)
  - Determine the formula for potassium oxide.
HW 4-8)

What is the chemical formula for the compound formed between calcium and chlorine?

 What is the chemical formula for the compound formed between calcium and oxygen?

HW 4-15)

Name the following compounds. Spelling counts!

PCl₅

N₂O₅

HW 4-16)

Write the formula for phosphorus pentachloride.

HW 5-1)

Calculate the percent composition by mass of each element in Al(CH₃)₃. Use at least three significant figures.

% Al =  

% C =  

% H =  

HW 6-7)

Draw the Lewis structure of the following molecule. Include lone pairs, if necessary.

SiH₄

HW 6-9)

Draw the Lewis structure of the following molecule. Include lone pairs.

NC₃

HW 6-14)

For each compound below, click in the box to toggle the direction of bond polarity (leave the box blank for a nonpolar bond).

Br–Br

H–Cl

F–CH₃
MEASURE 1 TYPE:
Direct

MEASURE 1 RESULTS:

% Score for All Attempts vs % Score for All Students (N~55) - Outcome 3

The average student score (N ~ 55) on the following exam questions will be 60 % or higher:

Exam 2-19) C\textsubscript{4}O\textsubscript{10}
   a. carbon oxide
   b. carbon decaoxide
   c. tetracarbon decaoxide
   d. tetracarbon oxide

Exam 3-2) What is the mass % of carbon in C\textsubscript{2}H\textsubscript{5}O?
   a. 52.2 %
   b. 47.8 %
   c. 34.8 %
   d. 100 %

Exam 3-10) What is the correct Lewis structure of NCl\textsubscript{3}?
Exam 3-14) O-C
a. polar covalent
b. nonpolar covalent
c. ionic
d. ionic covalent

Exam 3-16) Which of the following has dipole – dipole as its intermolecular force?
a. CH₃CH₃
b. CH₃CH₂Br
c. CH₃CH₂H
d. CH₃CH₂OH

Exam 3-1c) What is the molar mass of Co₂O₃? (2 pts)

Exam 3-2b) Draw the complete Lewis structures for both BiBr₃ and H₂Te. (4 pts)

Outcome 3 % Scores on the Exams (N ~ 55)

The average student score (N ~ 55) on the following final exam questions will be 60 % or higher:

Final-14)
a. 52.5 %
b. 85.7 %
c. 1.91 %
d. 47.5 %

Final-17)
a. ionic
b. polar covalent
c. nonpolar covalent

Final-25) Which of the following would be the most likely to dissolve in water?
a. oil
b. CH₃CH₂CH₂CH₃
c. CH₃CH₂CH₃
d. CH₃CH₂OH

Final-6b) Draw the Lewis structure of NF₃, showing all of the lone pairs. (2 pts)

MEASURE 3 TYPE:
Direct
MEASURE 3 RESULTS:

EVIDENCE ATTACHMENTS:
CHM 130 Outcome 3 - Molecules.xlsx

FINDINGS

<table>
<thead>
<tr>
<th>Question Number</th>
<th>% Score</th>
<th>Benchmark</th>
<th>Passed Benchmark?</th>
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<tr>
<td>HW 4-7</td>
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<tr>
<td>HW 6-16</td>
<td>98.11</td>
<td>75</td>
<td>Y</td>
</tr>
</tbody>
</table>
TARGET LEVEL ACHIEVEMENT
*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Due to the % range (86.91% - 99.45% for Sapling Homework, 36.05% - 87.82% for exam questions, and 52.11% - 77.15% for final questions), the students seem to understand the process for using the Periodic Table to determine the characteristics of molecules. As this outcome was assessed multiple times (2 different exams and the final), this is a strong measure of student success in CHM 130.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

In measure 1, even though the students scored high on the assessments (86.91% - 99.45%), this includes only the students who attempted the questions and were correct. If the total number of students were included, the %range drops to 62.03% - 102.36%. One reason for this drop is students finishing the homework right at the due date (see attached spreadsheet for exact numbers), meaning the last of the homework questions (HW 6-20 for example, which is on the same topic that students had difficulties with in Exam 3-16) are rushed through or skipped. A point to mention here is that it is difficult to estimate the total number of students due to the student's opportunity to do some of the questions more than once for practice. Also, many of the students finished the exams in the Testing Center on the day they were due (anecdotally before the 1st due date about 50 exams out of 100 were finished during the last 10 hours the exams were opened). A lot of blank and/or guessed answers resulted. For both of these weaknesses, encouragement to avoid procrastination would be a good thing.

An important overall point is that this outcome had the most questions below the benchmark (4), meaning it would be a good idea of reinforce student learning about the Periodic Table throughout the semester.

ADDITIONAL COMMENTS:

The benchmark for the Exam and Final questions was set at 60%, which is the lowest score a student can attain and achieve a passing score in CHM 130. The benchmark for the Sapling Learning homework questions was arbitrarily set at 75%, due to the assumption that the student would have more time and resources to correctly answer this assessment.

Sapling Homework results were downloaded directly from their website (saplinglearning.com) and compiled on a spreadsheet. The %correct are an average based on both the regular homework and the makeup homeworks (same questions and scoring for each). The % overall includes the entire class (students who are correct vs. total number of students, which I used 55).

Exam and final questions were a mixture of multiple choice (2 pts for correct, 0 for incorrect) and short answer (based on how correct the student was).

Encourage students to finish their assessments as early as possible.

As this is a hybrid class relying on online lectures, a reminder of this and the difficulty involved would be useful.
3. Despite the high %range, it is always a good idea to find ways to improve the teaching of this subject (using the Periodic Table to determine the characteristics of molecules), especially placing them in context with the rest of chemistry.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encouragement to finish assessments as early as possible (more reminders of due dates, for example), a reminder / intro into hybrid classes, and placing the Periodic Table to determine the characteristics of molecules in context with the rest of chemistry.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERSON/GROUP RESPONSIBLE FOR ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Killin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TARGET DATE FOR IMPLEMENTATION OF ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/12/2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
</tr>
</tbody>
</table>
CHM 151 Assessment Plan Data

Course Outcome

Summarizing numerical data in graphs is commonplace in science. Upon satisfactory completion of the course, students are expected to successfully interpret graphs.

AY 2016-2017

MEASURE 1:

To a beaker containing 175g water at 25°C are added 21g of potassium chlorate. Is the aqueous salt solution saturated (S), unsaturated (US), supersaturated (SS), or none of the three choices (NTC)?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmark Actual</td>
</tr>
<tr>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

Results for O3, M1: 22/35 = 63% correct; N = 35

<table>
<thead>
<tr>
<th>Choices</th>
<th>S</th>
<th>US</th>
<th>SS</th>
<th>NTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7</td>
<td>6</td>
<td>22</td>
<td>0</td>
</tr>
</tbody>
</table>

MEASURE 2:
TRUE/FALSE  Write the word, not T or F, otherwise you will receive zero points.
Equal masses of TATP and RDX are placed in separate but identical (in both shape and volume) glass Erlenmeyer flasks. The two flasks are located in the same room. Attached to the mouth of the Erlenmeyer flask is a deflated (initially) rubber balloon. The drawings below correctly describe the expected results based on the information found in the chart above.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>75</td>
<td>43</td>
</tr>
</tbody>
</table>

Results for O3, M2: 15/35 = 43% correct; N = 35
Outcome 3, Measure 3
Use the phase diagram below.

![Phase Diagram](https://azwestern.tk20.com/campus/shighered/jsp/k12/reports/_6efe57...)

If $P_i = 1.25\text{ atm}$, $T_i = 303K$ and $P_f = 0.75\text{ atm}$, $T_f = 289K$, then no phase change has occurred when under the conditions described $\Delta P = (-)$ and $\Delta T = (-)$.

**TRUE** or **FALSE**: ______________

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>75</td>
<td>94</td>
</tr>
</tbody>
</table>

**MEASURE 3 TYPE:** Direct

**MEASURE 3 RESULTS:**

Results for O3, M3: 33/35 = 94% correct; N = 35

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>33</td>
<td>2</td>
</tr>
</tbody>
</table>
**Outcome 3, Measure 4**

Use the phase diagram below.

![Phase Diagram](https://azwestern.tk20.com/campustoolshighered/jsp/k12/reports/_6efe57...) 

approx. = approximate

Suppose a sample of the substance in an open container is located in Flagstaff, AZ (i.e., 7,100 ft) in a non-air conditioned room at $T = 308K$. $P_{room} = 600 \text{ mm Hg}$ (lit). The substance be a liquid and it also would be boiling.

**TRUE or FALSE:**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td><strong>Benchmark</strong></td>
</tr>
<tr>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

**MEASURE 4 TYPE:**
Direct

**MEASURE 4 RESULTS:**

Results for O3, M4: $28/35 = 80\%$ correct; $N = 35$

<table>
<thead>
<tr>
<th>Total</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28</td>
<td>7</td>
</tr>
</tbody>
</table>
Outcome 3, Measure 5

In order to live fish require molecular oxygen gas. Coldwater fish like trout and salmon affected by low dissolved oxygen (DO) levels. For salmon and trout eggs, DO levels: ppm delay hatching, and below 8 ppm impairs their growth and lowers eggs’ survival. When DO levels fall below 6 ppm (considered normal for most other fish), the vast majority of trout and salmon eggs die. The graph below represents aqueous DO levels as a function of water temperature for a lake in northern Arizona populated with trout. The water temperature for:

<table>
<thead>
<tr>
<th>Event</th>
<th>Water Temperature, °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>delayed hatching of eggs</td>
<td></td>
</tr>
<tr>
<td>eggs die</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>y-axis: DO(g), ppm</th>
<th>x-axis: Water Temperature, °C</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Benchmark</td>
</tr>
<tr>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

MEASURE 5 TYPE: Direct

MEASURE 5 RESULTS:

Results for O3, M5: 18/35 = 51% correct; N = 35
For: Delayed Hatching of Eggs

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>17</td>
</tr>
</tbody>
</table>

Results for O3, M5: 24/35 = 69% correct; N = 35
For: Eggs Die

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>11</td>
</tr>
</tbody>
</table>

Aggregate Results for O3, M5: 42/70 = 60% correct; N = 70

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>28</td>
</tr>
</tbody>
</table>

FINDINGS
Results for Outcome 3:
Benchmark and Actual success rates for all five measures for Outcome 3 are found below. The Target Level Achievement (TLA), aka Benchmark Success Rate, was met for two measures (see column 4).

### Fall 2016 Summary of Successes for Outcome 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, % for Outcome 3</th>
<th>TLA Mat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>63</td>
</tr>
<tr>
<td>2</td>
<td>75</td>
<td>43</td>
</tr>
<tr>
<td>3</td>
<td>75</td>
<td>94</td>
</tr>
<tr>
<td>4</td>
<td>75</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td>60</td>
</tr>
</tbody>
</table>

**TARGET LEVEL ACHIEVEMENT**

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.*

**WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?**

**WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?**

Overall, the instructor is dissatisfied with the Target Level Achievement (TLA) for performance. Strengths:
- seems that the questions were challenging (as they should be for academic work) based on the poor results,
- failure is an opportunity to improve (sounds hokey-pokey but can I put a positive spin on such a dismal overall performance?).

The instructor believes that there is always room for improvement whether it is in instructor preparation, or teaching strategies, or student performance. The poor performance is a puzzle to the instructor because students had numerous graph-related questions on exams and in labs throughout the semester. And with math a prerequisite students have seen graphs before taking a chemistry course.

Students were given a ruler to draw straight lines for intersecting the x-y values. The instructor noted a number of students did not use the ruler but instead drew the x-y values freehand. Obviously this resulted in ‘drifting’ lines, which on the scale drawn, leads to errors. In many instances students knew to draw two intersecting lines between the x-y values but got the question wrong nevertheless because their freehand lines were resulting in a larger enough ‘drift’ to give a wrong answer. This was especially true for 5. Can’t force students to use the ruler given. But the instructor is at a loss why a good student refuses to use a ruler to draw intersecting lines. Beats me.

**Recommendations for Outcome 3:**
None. Stay the course.

**COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION**

**DESCRIBE CHANGES**

Planned Changes

See recommendations.

**PERSON/ GROUP RESPONSIBLE FOR ACTION**
Scott Donnelly

**TARGET DATE FOR IMPLEMENTATION OF THE ACTION**
02/06/2017

**PRIORITY**
Low
Course Outcome

Upon satisfactory completion of the course, students are expected to:

a. predict either the daughter or parent radionuclide of a nuclear decay reaction, and
b. determine the type of nuclear decay based on a radioisotope’s neutron-to-proton ratio.

AY 2016-2017

MEASURE 1:

Outcome 4, Measure 1

A possible way to detect TNT and RDX is to measure the amount of radioactivity emitted by nitrogen radioisotopes. Nitrogen-16 is a neutron rich, proton poor radionuclide. What is the identity of the radioactive particle emitted?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>71</td>
</tr>
</tbody>
</table>

MEASURE 1 TYPE: Direct
MEASURE 1 RESULTS:

Results for O4, M1: 25/35 = 71% correct; N = 35

<table>
<thead>
<tr>
<th></th>
<th>alpha</th>
<th>beta</th>
<th>other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4</td>
<td>25</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>25</td>
<td>10</td>
</tr>
</tbody>
</table>

MEASURE 2:

Outcome 4, Measure 2

A possible way to detect TNT and RDX is to measure the amount of radioactivity emitted by nitrogen radioisotopes. Nitrogen-16 is a neutron rich, proton poor radionuclide. What is the mass number of the radioactive particle emitted?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>75</td>
<td>23</td>
</tr>
</tbody>
</table>

MEASURE 2 TYPE: Direct
MEASURE 2 RESULTS:

Results for O4, M2: 8/35 = 23% correct; N = 35

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>8</td>
<td>27</td>
</tr>
</tbody>
</table>

MEASURE 3:

Outcome 4, Measure 3

A possible way to detect TNT and RDX is to measure the amount of radioactivity emitted by nitrogen radioisotopes. Nitrogen-16 is a neutron rich, proton poor radionuclide. What is the identity of the daughter nuclide produced from nitrogen-16 decay?

Daughter nuclide: ________________

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>75</td>
<td>43</td>
</tr>
</tbody>
</table>

MEASURE 3 TYPE: Direct
MEASURE 3 RESULTS:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, % for Outcome 2</th>
<th>TLA Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmark: 75, Actual: 71</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Benchmark: 75, Actual: 23</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Benchmark: 75, Actual: 43</td>
<td>X</td>
</tr>
</tbody>
</table>

FINDINGS

Results for Outcome 4:
Benchmark and Actual success rates for the three measures for Outcome 4 are found in the table below. The Target Level Achievement (TLA), aka Benchmark Success Rate, was not met for any of the three measures (see column 4).

Overall, the instructor is dissatisfied with the Target Level Achievement (TLA) for performance. Strengths:
- Seems that the questions were challenging (as they should be for academic work) based on the poor results,
- Failure is an opportunity to improve (sounds hokey-pokey but can I put a positive spin on such a dismal overall performance?).

Measure 1 was almost met, missing by only four percentage points.

The three Measures were questions that challenged students' foundational understanding of the key ideas associated with radioisotopes and modes of radioactive decay.

The instructor believes that there is always room for improvement, whether it is in instructor preparation, teaching strategies, or student performance.

The poor performance is a puzzle to the instructor because nuclear chemistry is the first topic addressed in General Chemistry 1. Hence, students had more or less 14 weeks to learn the basics. And since all my semester quizzes and exams are comprehensive, students have exposure to foundational nuclear chemistry principles. The nuclear chemistry question on the Final Comprehensive Exam was not the first time they had seen such questions.

Recommendations for Outcome 4:
None really. Stay the course. Students have plenty of chances to learn the material.

COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION

Planned Changes

PERSON/ GROUP RESPONSIBLE FOR ACTION

Scott Donnelly
TARGET DATE FOR IMPLEMENTATION OF THE ACTION
01/23/2017

PRIORITY
Low

Course Outcome
Upon satisfactory completion of the course, students are expected to have a conceptual understanding of gas laws in addition to being able to apply the gas laws’ mathematical relationships (= calculations) in theoretical situations.

AY 2016-2017

MEASURE 1:

O1, M1 Question where O = Outcome and M = Measure
Outcome 1, Measure 1
How does the volume of 1 mole of an ideal gas change if the temperature and the pressure of the ideal gas are both decreased by a factor of four?

a. decreases by four times  
   b. decreases by sixteen times  
   c. increases by four times  
   d. increases by sixteen times  
   e. remains unchanged  
   f. none of the choices

<table>
<thead>
<tr>
<th></th>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>O1</td>
<td>1</td>
<td>75</td>
<td>56</td>
</tr>
</tbody>
</table>

Results for O1, M1: 20/35 = 57% correct; N = 35

<table>
<thead>
<tr>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>20</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>20</td>
<td>15</td>
</tr>
</tbody>
</table>

MEASURE 2:

Outcome 1, Measure 2
We’ve all seen or done what’s described in the drawing below. What gas law describes the relationship between the number of breaths exhaled into the balloon and the volume of the balloon?

(1) Charles’  
(2) Boyle’s  
(3) Amonton’s  
(4) Avogadro’s  
(5) Dalton’s  
(6) none of the choices

<table>
<thead>
<tr>
<th></th>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>O2</td>
<td>2</td>
<td>75</td>
<td>66</td>
</tr>
</tbody>
</table>
MEASURE 2 RESULTS:

Results for Outcome 1:

Benchmark and Actual success rates for the two measures for Outcome 1 are found in below. The Target Level Achievement (TLA), aka Benchmark Success Rate, for performance was not met for either measure (see column 4).

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 1</th>
<th>TLA Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>YES (√)</td>
</tr>
<tr>
<td>2</td>
<td>75</td>
<td>NO (X)</td>
</tr>
</tbody>
</table>

TARGET LEVEL ACHIEVEMENT

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

Overall, the instructor is dissatisfied with the Target Level Achievement (TLA) for performance. Strengths:
- seems that the questions were challenging (as they should be for academic work) based on the poor results,
- failure is an opportunity to improve (sounds hokey-pokey but how else a positive spin on such a dismal overall performance?).

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

The instructor believes that there is always room for improvement whether it is in instructor preparation, or teaching strategies, or student performance. TLA's were not for both measures, though for Measure 2 the percentage point difference is 9%. Neither required a foundational mathematical understanding of the ideal gas law or individual. Measure 1 is conceptual in nature while Measure 2 is nothing more than just common memory which gas law explains what physical variables.

1. Have a good cry.
2. In lecture continue emphasizing the conceptual (= non-mathematical) description of behavior.
3. Add more gas law practice problems to weekly labs.
4. Perhaps create 'dry' lab where students spend the lab period working gas law conceptual (= mathematical) problems.

COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION

Planned Changes

DESCRIBE CHANGES

See recommendations.

PERSON/ GROUP RESPONSIBLE FOR ACTION

Scott Donnelly

TARGET DATE FOR IMPLEMENTATION OF THE ACTION

03/06/2017

PRIORITY

Medium
Course Outcome

Upon satisfactory completion of the course, students are expected to have a conceptual understanding of thermochemistry in addition to being able to use the seminal thermochemical equation $q = mC\Delta T$ in theoretical situations.

AY 2016-2017

MEASURE 1:

Outcome 2, Measure 1

The U.S. is relying increasingly on liquefied natural gas (LNG) to satisfy its appetite for natural gas. How is LNG ‘made’? Gaseous methane or natural gas is piped from an oil and/or gas field via pipeline to a port-side liquefaction storage facility where it is cooled to an incredibly cold temperature, -261°F (brrrrr). The gaseous methane condenses.

Is the physical change accompanying the condensation of gaseous methane exothermic or endothermic?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>71</td>
</tr>
</tbody>
</table>

MEASURE 1 TYPE: Direct

MEASURE 1 RESULTS:

Results for O2, M1: 25/35 = 71% correct; N = 35

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>10</td>
</tr>
</tbody>
</table>

MEASURE 2:

Outcome 2, Measure 2

The U.S. is relying increasingly on liquefied natural gas (LNG) to satisfy its appetite for natural gas. How is LNG ‘made’? Gaseous methane or natural gas is piped from an oil and/or gas field via pipeline to a port-side liquefaction storage facility where it is cooled to an incredibly cold temperature, -261°F (brrrrr). The gaseous methane condenses.

Which choice is correct about the density comparison between LNG and NG?

a. LNG > NG  
b. LNG = NG  
c. LNG < NG  
d. None of the choice

<table>
<thead>
<tr>
<th>Measure</th>
<th>Benchmark</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>75</td>
<td>60</td>
</tr>
</tbody>
</table>

MEASURE 2 TYPE: Direct

MEASURE 2 RESULTS:

Results for O2, M2: 21/35 = 60% correct; N = 35

<table>
<thead>
<tr>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>21</td>
</tr>
</tbody>
</table>

MEASURE 3:
Outcome 2, Measure 3
Which choice, if any, is correct with respect to the specific enthalpy comparison between NG and LN?

a. LNG > NG  
b. LNG = NG  
c. LNG < NG  
d. None of the choice

MEASURE 3 TYPE: Direct
MEASURE 3 RESULTS:

Results for O2, M3: 11/35 = 31% correct; N = 35

<table>
<thead>
<tr>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>11</td>
<td>11</td>
<td>13</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

Outcome 2, Measure 4
Which choice, if any, is correct with respect to the enthalpic density comparison between NG and LN?

a. LNG > NG  
b. LNG = NG  
c. LNG < NG  
d. None of the choice

MEASURE 4 TYPE: Direct
MEASURE 4 RESULTS:

Results for O2, M4: 22/35 = 63% correct; N = 35

<table>
<thead>
<tr>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>22</td>
<td>4</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

Outcome 2, Measure 5
The specific heat capacity of silver is 0.06 cal/g°C, whereas gold has a specific heat of 0.03 cal/g°C, where cal = calorie (1 cal = 4.18 Joules). If equivalent masses of silver and gold absorb the same amount of heat energy over a 10 minute time period, silver will have a higher temperature.

TRUE or FALSE: _______________

MEASURE 5 TYPE: Direct
MEASURE 5 RESULTS:
FINDINGS

Results for Outcome 2:
Benchmark and Actual success rates for five measures for Outcome 2 are found in below. The Target Level Achievement (TLA) for student performance was not met for five measures (see column 4).

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 2</th>
<th>TLA Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmark 75, Actual 71</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Benchmark 75, Actual 60</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Benchmark 75, Actual 31</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Benchmark 75, Actual 63</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>Benchmark 75, Actual 40</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Success Rates, %, for Outcome 2</th>
<th>TLA Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmark 75, Actual 71</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Benchmark 75, Actual 60</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Benchmark 75, Actual 31</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Benchmark 75, Actual 63</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>Benchmark 75, Actual 40</td>
<td>X</td>
</tr>
</tbody>
</table>

Overall, the instructor is dissatisfied with the Target Level Achievement (TLA) for performance. Strengths:

- seems that the questions were challenging (as they should be for academic work) based on the poor results,
- failure is an opportunity to improve (sounds hokey-pokey but can I put a positive spin on such a dismal overall performance?).

Measures 1-4 are conceptual in nature, meaning that students can answer the question resorting to mathematics. Measure 5 required at best a basic understanding of the equation for thermochemistry, \( \pm q = mc\Delta T \). But even then being a TRUE/FALSE question could guess it correctly.

The instructor believes that there is always room for improvement whether it is in instructor preparation, or teaching strategies, or student performance. The poor performance is a puzzle to the instructor because students had similar questions on preceding quizzes and End-of-Lab practice problems. And in addition two labs were dedicated to thermochemistry and the use of \( \pm q = mc\Delta T \).

Weaknesses presumed include:
- students continuing struggles with questions that do not involve mind and chug’ mathematics, and
- students misunderstanding of units likely lead to incorrect answers for 1, 3 & 4
Recommendations for Outcome 2:
1. Have a good cry.
2. Continue emphasizing the conceptual (= non-mathematical) description of thermo principles.
3. In lecture work more numerical problems using \( \Delta q = m \Delta T \).
4. Possibly revamp the two thermochemistry labs to include more conceptual problems.

<table>
<thead>
<tr>
<th>COLLECT AND ANALYZE ADDITIONAL DATA AND INFORMATION</th>
<th>Planned Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIBE CHANGES</td>
<td>See Recommendations.</td>
</tr>
<tr>
<td>PERSON/ GROUP RESPONSIBLE FOR ACTION</td>
<td>Scott Donnelly</td>
</tr>
<tr>
<td>TARGET DATE FOR IMPLEMENTATION OF THE ACTION</td>
<td>03/20/2017</td>
</tr>
<tr>
<td>PRIORITY</td>
<td>Medium</td>
</tr>
</tbody>
</table>
SPC 110 Marchant Assessment Plan Data

Course Outcome
Demonstrate analytical and critical understanding by achieving passing scores/grades on exams.

AY 2016-2017

MEASURE 1:
80% of students pass the first exam with a score of 70% or better.
MEASURE 1 TYPE:
Direct
MEASURE 2:
80% of students pass the second exam with a score of 70% or better.
MEASURE 2 TYPE:
Direct
MEASURE 3:
80% of students pass the second exam with a score of 70% or better.
MEASURE 3 TYPE:
Direct

FINDINGS
Data was collected in two course sections of SPC-110, Introduction to Speech Communication. Three exams were analyzed for this outcome. The outcome was partially met in both courses.

TARGET LEVEL ACHIEVEMENT
Partially Met

*IF LESS THAN MET, PROGRAM SHOULD PLAN FURTHER ACTION TO IMPROVE PERFORMANCE.

OVERALL SUMMARY OF FINDINGS

(OPTIONAL ENTRY: FILL OUT AFTER ENTERING THE RESULTS FOR THE LAST OUTCOME/GOAL BEING ASSESSED IF YOU WOULD LIKE TO PROVIDE AN OVERALL SUMMARY OF YOUR FINDINGS FOR THE COURSE/PROGRAM /DEPARTMENT BEING ASSESSED.)

<table>
<thead>
<tr>
<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC-110-001</td>
<td>Of 21 students who took the exam, grades ranged from 54 to 94%. The average grade was 74%. 14 students passed the exam with a score of 70% or better (67%). The student scores did not meet the desired outcome of 80%.</td>
<td>Of 21 students who took the exam, grades ranged from 66 to 96%. The average grade was 84%. 19 students passed the exam with a score of 70% or better (90%). The student scores met the desired outcome of 80%.</td>
</tr>
<tr>
<td>SPC-110-002</td>
<td>Of 23 students who took the exam, grades ranged from 52 to 94%. The average grade was 75%. 16 students passed the exam with a score of 70% or better (72%). The student scores did not meet the desired outcome of 80%.</td>
<td>Of 23 students who took the exam, grades ranged from 68 to 100%. The average grade was 84%. 22 students passed the exam with a score of 70% or better (96%). The student scores met the desired outcome of 80%.</td>
</tr>
</tbody>
</table>

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?
This outcome was measured through three exams, each 50 questions in length. The exam questions were multiple choice and true/false, and were recorded on scantrons. A strength in such an exam is that the answers are standardized, and only one answer is correct. There is no room for interpretation or subjective grading.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?
As with any type of exam assessment measure, students might have misinterpreted a test question. This would lead to a missed question, even if the student did understand the concept.
I feel that an 80% passing rate of an exam grade of 70% or better is an attainable goal. I give out an exam review one week in advance of every exam. I ask if there are questions on the exam review, but that is the only class time I take during class. Maybe I will take some class time to discuss the review, and have the students go over the topics in small groups. Perhaps this would lead to a better success rate.

I plan on looking at each individual question, and see if there is a pattern among the students' answers. For example, if a high percentage of students missed a question, or a few questions, from a specific chapter, I will make sure I am covering that particular material well in class, which may include presenting the information differently.

### AY 2016-2017

**Course Outcome**
Demonstrate skills in analyzing their own communication effectiveness.

**AY 2016-2017**

**MEASURE 1:**
85% of students complete 85% of their chapter reflection assignments throughout the course of the semester (a total of 13 reflections).

**MEASURE 2:**
85% of students receive a 70% or better on the Communication Analysis Paper Assignment

**FINDINGS**
Data was collected in two course sections of SPC-110, Introduction to Speech Communication. 13 chapter reflections, and a Communication Analysis Paper assignment were analyzed for this outcome. The outcome was partially met in one course.

**TARGET LEVEL ACHIEVEMENT**
Partially Met

**OVERALL SUMMARY OF FINDINGS**

(OF\_OPTIONAL ENTRY: FILL OUT AFTER ENTERING THE RESULTS FOR THE LAST OUTCOME/GOAL BEING ASSESSED IF YOU WOULD LIKE TO PROVIDE AN OVERALL SUMMARY OF YOUR FINDINGS FOR THE COURSE/PROGRAM /DEPARTMENT BEING ASSESSED.)

<table>
<thead>
<tr>
<th></th>
<th>Number of chapter reflections completed</th>
<th>Communication Analysis Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC-110-001</td>
<td>The class has 13 chapter reflections during the semester. Of the class of 22 students, 1 student did not submit any reflections, and 5 students submitted all 13. To meet the desired outcome of 85% completion of all reflections, students must have completed at least 11 reflections. Only 11 students, 50%, submitted at least 11 reflections. The student scores did not meet the desired outcome of 85% completion by 85% or students.</td>
<td>Of 20 students who submitted the analysis paper assignment, grades ranged from 50 to 100. The average grade was 90%. 18 students passed the assignment with a score of 7 or better (90%). The student score was above the desired outcome of 85%.</td>
</tr>
<tr>
<td>SPC-110-002</td>
<td>The class has 13 chapter reflections during the semester. Of the class of 25 students, 3 students did not submit any reflections, and 6 students submitted all 13. To meet the desired outcome of 85% completion of all reflections, students must have completed at least 11 reflections. Only 11 students, 44%, submitted at least 11 reflections. The student scores did not meet the desired outcome of 85% completion by 85% or better.</td>
<td>Of 21 students who submitted the analysis paper assignment, grades ranged from 60 to 100. The average grade was 85%. 17 students passed the assignment with a score of 7 or better (81%). The student score was above the desired outcome of 85% or better.</td>
</tr>
</tbody>
</table>
WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

In chapter reflections, the assignment is to reflect on the chapter that the student has read, and apply the material to their own life. When completed, I feel this is a good assessment of the student’s communication effectiveness.

The Communication Analysis Paper is an assignment that gives students a chance to take an in-depth look at one of their own individual relationships. Often times in this assignment, students comment on how their communication skills have developed and grown throughout the course, and how they now view communication differently. Another strength of the analysis paper, is that each requirement is clearly detailed, so students know exactly what is expected from the assignment.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

In regard to chapter reflections, it is a homework assignment that is worth 10 points each chapter. I feel that many students did not take this part of the class “seriously” and simply did not turn in their homework. It is hard to assess a student’s analysis of their own communication effectiveness if they do not complete assignments.

For the analysis paper, several students reflected on their relationship, but did not address the requirements of the assignment. For example, key terms were not defined in their own words. Some students simply wrote a narrative of an event in their relationship, but did not analyze their relationship.

I will reiterate (even more) the importance of completing homework assignments for class. I will relay to the students that to get the most they can out of this course, they need to complete chapter reflections, which apply directly to their own lives (see attached). I will also reiterate that the Communication Analysis Paper assignment requirements must be followed (see attached).

UPLOAD ANY SUPPORTING DOCUMENTS TO FURTHER ELABORATE ON THE RECOMMENDATIONS LISTED ABOVE.

SPC 110 Communication Analysis Paper.pdf

Course Outcome

Prepare, outline, and present an organized speech.

AY 2016-2017

MEASURE 1:
80% of students use 4 resources to meet the speech requirement through citations of references throughout speech delivery and submit a reference page.

MEASURE 2:
95% of students submit an outline for their speech, as per assignment requirements.

MEASURE 3:
90% of students receive a passing grade of 70% or better on their speech assignment.

FINDINGS

Data was collected in two course sections of SPC-110, Introduction to Speech Communication. The persuasive speech assignment was analyzed for this outcome. The outcome was partially met in one course.

TARGET LEVEL ACHIEVEMENT

Partially Met

OVERALL SUMMARY OF FINDINGS

Further Action Planned

<table>
<thead>
<tr>
<th></th>
<th>Persuasive Speech Grade</th>
<th>Used 4 resources</th>
<th>Submitted Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC-110-001</td>
<td>Of 19 students who</td>
<td>Of 19 students</td>
<td>Of 19 students</td>
</tr>
<tr>
<td></td>
<td>presented a persuasive</td>
<td>who presented a</td>
<td>who presented a</td>
</tr>
<tr>
<td></td>
<td>speech, grades ranged</td>
<td>persuasive speech,</td>
<td>persuasive speech,</td>
</tr>
<tr>
<td></td>
<td>from 35 to 97%. Average</td>
<td>only 11 (58%)</td>
<td>only 11 (58%)</td>
</tr>
<tr>
<td></td>
<td>grade was</td>
<td>cited 4 resources</td>
<td>cited 4 resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>during speech</td>
<td>during speech</td>
</tr>
<tr>
<td></td>
<td></td>
<td>delivery. 12</td>
<td>delivery. This had</td>
</tr>
</tbody>
</table>
|                |                         |                   | not
OVERALL SUMMARY OF YOUR FINDINGS FOR THE COURSE/PROGRAM/DEPARTMENT BEING ASSESSED.

| 80%. 15 students passed the speech assignment with a score of 70% or better (79%). The student scores did not meet the desired outcome of 90%. | (63%) submitted a reference page. This did not meet the desired outcome of 80% of students meeting assignment requirements. | met the desired outcome of 90% of student submission of an outline. |

| SPC-110-002 | Of 21 students who presented a persuasive speech, grades ranged from 60 to 100%. The average grade was 82%. 17 students passed the speech assignment with a score of 70% or better (81%). The student scores did not meet the desired outcome of 90%. | Of 21 students who presented a persuasive speech, only 6 (29%) cited 4 resources during speech delivery. 15 (71%) submitted a reference page. This did not meet the desired outcome of 80% of students meeting assignment requirements. | Of 21 students who presented a persuasive speech, 20 (95%) submitted an outline for their speech. This met the desired outcome of 90% of student submission of an outline. |

WHAT STRENGTHS WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

A strength of this assessment, is that each requirement of the speech assignment is clearly detailed, so students know exactly what is expected from the assignment. This is also the second speech assignment given in this course, building upon the first informative speech assignment.

WHAT WEAKNESSES WERE DISPLAYED THROUGH THE ASSESSMENTS OF YOUR MEASURES?

The rubric for the persuasive speech assignment is on a scale of 1 to 5 for each item. A weakness in this assignment is that some of the areas are subjective. Another professor viewing the same speech may give a different grade on the assignment.

1. When I broke up this assignment into the different data areas for assessment, I was incredibly surprised by the poor percentage of scores that met desired outcome. Many students delivered the speech well, fulfilling part of the assignment requirements, but did not show proper citations and references for the assignment.

2. In the future, I plan to discuss the importance of credible sources within a speech more in-depth.

3. After considering the rubric, and the idea that another professor viewing the same speech may give a different grade on the assignment, I plan on specifying what will lead to a score of “1” or “3”, etc. (see attached)

UPLOAD ANY SUPPORTING DOCUMENTS TO FURTHER ELABORATE ON THE RECOMMENDATIONS LISTED ABOVE.

SPC 110 Persuasive Speech.pdf

REVISE MEASUREMENT APPROACH

Planned Changes

(see above)

PERSON/ GROUP RESPONSIBLE FOR ACTION

Cindy Marchant

TARGET DATE FOR IMPLEMENTATION OF THE ACTION

12/15/2017

PRIORITY

Medium
Assessment Period(s): AY 2016-2017
Organization Type(s): College, Department, Division, Program, University
Organization(s): CAMP
Display blank entries: No

AWC

AY 2016-2017

CAMP
To provide outreach and identify 100 potential participants and recruit/enroll 40 eligible farmworker students in need of CAMP services annually.

Measure 1: Outreach to high school districts and migrant education programs
Measure 1 Type: Direct
Measure 1 Results: Conducted the CAMP Survey and/or CAMP Workshop for Yuma, Kofa, Cibola, Gila Ridge, San Luis, Antelope, PPEP Tec High Schools and Harvest Prep Academy. CAMP informational booth during the YUHSD Migrant Education Program Annual Family Night. CAMP informational booth during the YUHSD Migrant Education Program Annual Family Picnic. AWC Campus tour presentation for Crane Migrant Middle School students and Migrant High School Seniors from PPEP Tec. PPEP Tec Migrant Parent Meetings. CAMP Information Booth during the YUHSD College Career Military Day.

Measure 2: Outreach to community organizations serving farm workers including Health Clinics, WIA 167 Employment & Training Program & Even Start.
Measure 2 Type: Direct
Measure 2 Results: PPEP NFJP WIA 167. National Farmworker Jobs Program. Including Youthbuild. Sunset Community Health Clinic. CAMP informational Booth during 8th National Health Center Week and opening of their new center. CAMP presentation all Chicanos Por la Causa Headstart Centers during their parent meetings. During El Dia Del Campesino, CAMP Coolaborts with Chicanos por la causa, Campesinos Sin Fronteras, Sunset Health Clinic, PPEP Inc, Food Bank, YRMC and other community organizations.

Measure 3: Outreach to migrant and farm worker parents one-on-one and in groups.
Measure 3 Type: Direct

Measure 4: Screen and certify eligibility of CAMP applicants.
Measure 4 Type: Direct
Measure 4 Results: 97 students applied to the CAMP program, each application was screened for eligibility and a copy of the eligibility check list was attached to each student file.

Measure 5: Select and enroll 40 eligible CAMP students.
Measure 5 Type: Direct
Measure 5 Results: Once eligibility was verified, students were interviewed and 40 new students were selected, and 3 students continued as persisters. for a total of 43 students served.

This Goal was: Partially Met

Findings

1489 students were outreached. 538 students were identified as potential CAMP participants. 97 students applied for the CAMP program. 56 eligible students completed CAMP application process. 40 eligible students were selected and enrolled in CAMP.

Target Level Achievement

Overall Summary of Findings (Optional entry: fill out after entering the results for the last outcome/goal being assessed if you would like to provide an overall summary of your findings for the course/program/department being assessed.)

100 completed applications goal was not met. Recruitment efforts worked and more students were reached compared to previous year. However, more rigorous follow up needs to be implemented to ensure that students are completing the program application.

What strengths were displayed through the assessments of your measures?

Outreach efforts worked to reach more students, but a small number of students completed all of the CAMP application.

1. Continue to work with High School Counselors to ensure an accurate and complete CAMP survey in all local High Schools in order to identify a greater number of potential students.

2. Continue to have constant contact with potential students, through workshops, small group meetings, or one-on-one meetings at the High Schools, to ensure a greater number of completed applications. And create a tracking system to follow-up with students that started with the application process or that requested an application and did not provide any contact information.

3. Continue to work with community partners and work to make new partners, to be able to outreach to more potential students and their parents.

Change Methods of Data Collection

Planned Changes

Describe Changes

Outreach efforts were successful. However, in order to increase the number of completed applications there needs to be a tracking mechanism to follow up on students that take applications but do not leave any contact information to follow up with.

Person/ Group responsible for action

CAMP Outreach & Activities Coordinator

Target Date for implementation of the action

07/03/2017

Priority

High

Describe any additional resources needed (Leave blank if no additional resources are needed.)

Revise CAMP Application and create a tracking system to collect information from students that take CAMP applications during presentations or outreach events.
To annually provide (100%) 40 students with admissions, academic support services and cultural activities through a Living/Learning Community to successfully complete their first year of college and continue in postsecondary education.

Measure 1: Provide 100% of the students with academic support services including tutoring, cultural activities, academic advising, and other comprehensive social and academic programming in order to increase classroom attendance, completion, and retention, measured through programming attendance tracking.

Measure 1 Type: Direct
Measure 1 Results: 100% (43) students were provided with 100% of student support services and programming activities. Please see Participation Report 2016-17 attachment.

Measure 2: Comparison of grades of CAMP students and the general student population in English and math courses.

Measure 2 Type: Direct
Measure 2 Results: Measurable percent increase for CAMP students vs. the general student population and other residential students. Overall, CAMP students had a higher percentage of A and B scores as well as a higher pass and completion rate in English and math courses compared to general population and residential students. Please see attachments: Fall 2016 CAMP vs All vs Residence Comparison Spring 2017 CAMP vs All vs Residence Comparison

Measure 3: Collection of CAMP Meeting surveys for sample CAMP Meeting topic presentations (variety of topics: speakers, activities, and workshops) to see which programming activities were useful and should be revisited.

Measure 3 Type: Direct
Measure 3 Results: The CAMP meeting surveys showcased that all seven sample topic presentations (which varied from cultural activity, to career and financial presentations, to CAMP alumni guest speakers) were all favorably received with the vast majority of students recommending these topics for future cohorts. For greater detail and specific comments, please see attachment: CAMP Meeting Survey Results.

Evidence Attachments: CAMP Meeting Survey Results.xlsx Fall 2016 CAMP vs All vs Residence Comparison.xlsx Participation Report 2016-17.xlsx Spring 2017 CAMP vs All vs Residence Comparison.xlsx

This Goal was: Met

Findings

43 students (100%) were provided with CAMP services. These findings were tracked within the comprehensive Programming Report. Consistent attendance and support was reinforced by higher percentage student grades for cohort English and math classes compared to the general population, and through surveying student interest and engagement in CAMP Meeting programming.

*If less than Met, program should plan further action to improve performance.

Further Action Unnecessary

What strengths were displayed through the assessments of your measures?

The method of service delivery is strong. Mandatory attendance of activities that is documented through sign-in sheets works. 100% of students received advising, cultural opportunities, and more. Though attendance and participation to the majority of student service programming is mandatory, surveying the students' thoughts and reflection on CAMP meeting events was helpful because the results were overwhelmingly positive. The majority of students surveyed found these selected events enjoyable, found the quality of the content as excellent, and found the events themselves useful. Students also recommended that said events should be presented again. This gives the program a good idea of the events being not only useful but helpful for freshman students. As seen in previous cohorts, students in the program generally were more successful in their English and math courses than the general student population because of mandatory tutoring attendance. Compared to other residential students on campus, CAMP students had a higher percentage in retained and passed students in English and math courses. This further shows that cohort English and math classes with mandatory tutoring is helpful.

What weaknesses were displayed through the assessments of your measures?

Though 100% of student academic support services were provided to all 43 students, not all events had 100% participation or attendance. Students that were considered persisters for the 2016-17 semester did not consistently or frequently attend programming events like cultural activities, tutoring, or CAMP meetings because some did not make the time or did not live on campus. Being able to encourage persister participation would provide better opportunity to the student's success.

1. Desired goal met. The program will continue to use this delivery method but continue to look for areas of improvement. The recommendation from the last assessment plan of surveying the students about the usefulness of certain activities was implemented, and the results showed that students found CAMP Meeting topics useful.

2. Surveying more programming events throughout the semester would be a good way of getting more information on which events are the most engaging or useful to students, which may affect their motivation and willingness to connect and participate future programming events.

Other

Improve survey and survey a greater number of programming activities

Describe Changes

Find ways to improve the survey currently being used to assess CAMP Meeting activities and increase the number of activities surveyed to get a better idea of which events students find the most useful or not useful.

Person/ Group responsible for action

CAMP Academic Advisor and Transition Coordinator

Target Date for implementation of the action

08/21/2017

Priority

High
Retaining at least 36 students (90%) through the first year of college.

Measure 1: 36 students (90%) will be retained through their first year of college.
Measure 1 Type: Direct
Measure 1 Results: 38 of the 43 students were retained during the 2016/17 academic year. 1 Student will persist to 2017/18. See attachment.
Evidence Attachments: CAMP Objectives 3 Data 2016 17.xlsx
This Goal was: Not Met
Findings The goal of retaining 90% of the students for year 2016/17 was not met. We retained 89%. Retention efforts included tutoring attendance and grade checks which helped with student completion of courses.
*If less than Met, program should plan further action to improve performance.
Further Action Planned
What strengths were displayed through the assessments of your measures? Retention efforts included tutoring attendance and grade checks which helped with student completion of courses.
What weaknesses were displayed through the assessments of your measures? None identified. All services were provided as in past years; however, student apathy and an increase in lack of student motivation made it difficult and challenging to provide support to students that didn't feel they needed help.

Describe Changes
The CAMP Academic Advisor and Transitional Coordinator
Target Date for implementation of the action 08/21/2017
Priority High

To enroll at least 32 of the 36 retained students (89%) in a second year of college.

Measure 1: Enroll at least 89% (32 students) in a second year of college. Achieved through academic advising sessions and follow-up services.
Measure 1 Type: Direct
Measure 1 Results: All 34 completers enrolled in a second year of college (100%), and 1 persister enrolled in a second year of college.
This Goal was: Met
Findings Desired outcome was met and exceeded. 100% of completers and persisters that were retained enrolled in a second year of college.
*If less than Met, program should plan further action to improve performance.
Further Action Unnecessary
What strengths were displayed through the assessments of your measures? Current retention efforts continue to work for students that attend and participate in program mandatory activities and responsibilities. Three formal and mandatory advising meetings a semester (a total of six throughout the academic year) were important in giving the students time and support in planning their educational academic plans and registering for classes. This semester, the program attempted to implement more engaging programming events, specifically in the weekly CAMP Meetings. By providing an assortment of different speakers, presentations, team building activities, and cultural events in the meeting, it was our hope that students would have a greater connection to the campus community. This greater connection would then in turn lead to greater investment in continuing to pursue their degrees at Arizona Western College.
What weaknesses were displayed through the assessments of your measures? In general, students still continue to perform better in the Fall semester because their grades and participation continued to decrease in the Spring semester. This cohort's students did well academically during their first semester. This can be attributed to being new to how the program works and so attending as many activities and mandatory tutoring as possible. However, with the Fall semester, on average, going pretty well for most students, they may create a sense of security and therefore put less effort into the Spring semester. This can lead to some students feeling a sense of apathy, an area that needs further research.

I. Considering that students continue to become less motivated in the Spring semester, especially toward Midterms, the CAMP program will need to continue to find creative ways to hold student attention and engagement within the program. One way is to continue to provide engaging, interactive CAMP meetings like the ones we provided this academic year. Students seemed very receptive to guest speakers, especially when the information was useful beyond the cohort (ie. Healthy Relationships, Job Preparedness, Financial Literacy). We will need to continue to invite guests and provide activities in the weekly CAMP meetings, and then surveying students to see which events/speakers were most effective.

Other No change required
Describe Changes No change required
To offer 100% (40 students) follow-up services.

**Measure 1:** Offer 100% follow-up services to previous CAMP students by tracking the amount of times these students came into the CAMP office throughout the Fall 2016 and Spring 2017 semesters. We utilized a specific "follow-up services" sign-in sheet that tracked the amount of times students came into the office, as well as tracking the type of service required by visiting students.

**Measure 1 Type:** Direct

**Measure 1 Results:** 100% of previous cohort students were offered follow-up services. 68 students came into the office for follow-up services which was tracked by "Follow-Up Services" sign-in sheets. Results showed that even though 68 students came into the office for follow-up services (which is an increase of ten students from last year's assessment), there was a total of 680 separate follow-up service sessions provided. Please See Attachment.

**Evidence Attachments:** Follow Up Services 2016-17.xlsx

**This Goal was:** Met

**Findings**

- 100% of previous cohort students were offered follow-up services. Students from previous CAMP cohorts visited the CAMP office frequently throughout the semester and needed help in many different areas such as academic advising, financial aid and FAFSA, and/or to use the computer or find a sense of community/social support. The sign-in sheets tracked what type of follow-up services students needed, and these were some of the main reasons students came into the office. From the amount of students that signed in, one can see that students felt comfortable coming into the CAMP office and asking for continued assistance. Their first year experience with the program had many students return because they felt comfortable with the staff.

*If less than Met, program should plan further action to improve performance. Further Action Unnecessary

**What strengths were displayed through the assessments of your measures?**

As seen in previous years, students that worked for the program during this academic year, whether it be in work study or part-time positions, were more likely to visit the office more frequently. These students would come to the office in-between work hours and classes because the space was available. Students that worked for other departments on campus like the Residence Halls or Ambassadors would also visit frequently. If the students were on campus already, many would take the time to stop by the office. Utilizing social media, specifically CAMP's Facebook page, was another efficient way to keep past cohorts connected by providing important updates and information like scholarship and campus activity information.

**What weaknesses were displayed through the assessments of your measures?**

- 100% follow-up services were offered but not 100% of past cohort CAMP students came to the office for these services. The ones that did come in, however, continued to attend as necessary. For most students, it wasn’t a one time visit.

1. Desired goal met. In order to provide greater attention to detail and best practices, students that come into the office for follow-up services should continue to be encouraged to attend programming activities throughout the semester; a practice staff already incorporates. In this way, past students can still be connected to the living learning environment and attend helpful workshops like "Cash For Scholarships" or "Transfer Events"

2. CAMP staff should also continue to utilize social media, specifically CAMP's Facebook page, to send important updates alongside student emails, especially considering how many students are inconsistent with checking and responding to emails. Creating helpful “CAMP Program” videos or video testimonials with past cohort students can be another interesting and creative way to provide support whilst using social media to further connect students to the program.

**Other**

- No change required

**Describe Changes**

- No change required
Students will be able to demonstrate the skills necessary to use a variety of information tools to locate and retrieve information in various formats for a variety of academic, financial, personal, professional or vocational purposes.

Measure 1: 
GPS: 80% of 2016-17 cohort will participate in the KEYS Peer Mentoring program.
Measure 1 Type: 
Direct
Measure 1 Results: 
34/47=72% of 2016-2017 GPS students participated in Peer Mentoring program

Measure 2: 
80% of 2016-17 cohort will attend study sessions, tutoring, or meet with professors.
Measure 2 Type: 
Direct
Measure 2 Results: 
28/51=55% of 2016-2017 cohort attended study sessions, tutoring, or met with professors.

Measure 3: 
80% of 2016-17 cohort registered for ORI 101 will complete Showcase Presentation as part of the ORI 101 class.
Measure 3 Type: 
Direct
Measure 3 Results: 
25/26= 96% completed showcase presentation as part of ORI 101 class

Measure 4: 
80% of 2016-17 cohort registered for ORI 105 will complete Portfolio projects as part of the ORI 105 class
Measure 4 Type: 
Direct
Measure 4 Results: 
14/22=64% completed Portfolio project as part of ORI 105 class

This Outcome was: 
Partially Met

Findings
This outcome was partially met. Only one out of the four measures (completion of Showcase Presentation) utilized was successfully met.

Target Level Achievement
Partially Met

*If less than Met, program should plan further action to improve performance.
Further Action Planned

What strengths were displayed through the assessments of your measures?
Data was collected and readily available through contact logs and classroom projects.

I. Establish a reminder system that will routinely provide information regarding available services and/or upcoming deadlines to students. This can be done using various modes such as texting and/or social media.

Revise Measurement Approach
Planned Changes

Describe Changes
Focus on the same cohort for data collection of all measures. For example all 2016-2017 cohort or only the GPS students of that cohort.

Revamp Services
Planned Changes

Make Technology Related Improvements
Planned Changes

Describe Changes
Establish a structured reminder system that will utilize texting and/or social media to periodically and continuously remind students of available services and/or upcoming deadlines.

Person/ Group responsible for action
KEYS Program Staff

Target Date for implementation of the action
08/21/2017

Priority
High
Students will be able to apply quantitative methods to problem solving and decision making for school, work, and home life.

Measure 1: 50% of program participants will be able to demonstrate money skills management by creating a detailed budget of their monthly expenses.

Measure 1 Type: Direct
Measure 1 Results: 28/201=14% of participants created a detailed budget of their monthly expenses

Measure 2: 15% of active program participants will complete a financial literacy workshop or online module.

Measure 2 Type: Direct
Measure 2 Results: 20/201=9% of program participants completed a financial literacy workshop online

Measure 3: 60% of students who received a grade check will return at least one completed grade check.

Measure 3 Type: Direct
Measure 3 Results: 95/201=47% of students who received a grade check completed at least one grade check

Findings
None of the three measures utilized were met.

Target Level Achievement
Not Met

*If less than Met, program should plan further action to improve performance.

Further Action Planned

What strengths were displayed through the assessments of your measures?

1. Establish a reminder system that utilizes texting and/or social media to periodically and continuously remind students of upcoming deadlines.
2. Potentially implement new Financial Literacy curriculum (Cash Course)
3. Include grade check "etiquette instructions" on grade check cards to provide students with pointers on different ways grade checks can be completed and the appropriate manner to approach faculty.

Revamp Services
Planned Changes

Add New Service(s) or Program(s)
Planned Changes

Describe Changes
Implement use of text and/or social media reminder system to periodically and continuously remind students of upcoming deadlines. Consider changing Financial Literacy curriculum to Cash Course. Create and include grade check "etiquette instructions" on grade check cards.

Person/ Group responsible for action
KEYS Program Staff

Target Date for implementation of the action
08/21/2017

Priority
Medium

Students will be able to develop personal and group communication, decision-making conflict resolution, and leadership skills for successful transition and adjustment into work world or the university.

Measure 1: 70% of program participants will complete at least one of the following activities: Focus Session, Peer Mentoring, or Advising appointment.

Measure 1 Type: Direct
Measure 1 Results: 151/201=75% of program participants completed a focus session

Measure 2: Group Communication: 80% of GPS will participate in Club SOTE activities.

Measure 2 Type: Direct
Measure 2 Results: 30/47=64% of GPS students participated in Club SOTE activities

Measure 3: 100% of KEYS Peer Mentors will participate in two or more professional development trainings

Measure 3 Type: Direct
Measure 3 Results: 0% participated in two or more 75% participated in at least one professional development training

Measure 4 Type: Direct
This Outcome was: Partially Met

Findings
Only one (Focus Sessions) of the three measures utilized was met.

Target Level Achievement
Partially Met

*If less than Met, program should plan further action to improve performance.

Further Action Planned

What strengths were displayed through the assessments of your measures?

1. Identify more professional development opportunities for peer mentors, perhaps through partnerships with other campus programs/departments.
2. Include advisory council of continuing students as part of Club SOTE.

Revamp Services
Planned Changes

Add New Service(s) or Program(s)
Planned Changes

Describe Changes
Consider offering more professional development opportunities for peer mentors. This could be done through partnerships with other campus programs/departments. Expanding Club SOTE through the addition of a continuing student advisory council will in turn increase the number of potential Club run events and activities.

Person/ Group responsible for action
KEYS Program Staff

Target Date for implementation of the action
08/21/2017

Priority
Medium
Student will develop an awareness, appreciation, and acceptance for multicultural differences and experiences.

Measure 1: 50% of active participants will participate in a leadership, community service, or cultural enrichment activity.

Measure 1 Type: Direct

Measure 1 Results: 18/201 = 9% of active participants participated in a community service activity 27/201 = 13% of active participants participated in a cultural enrichment activity

This Outcome was: Not Met

Findings None of the two measures utilized were met.

Target Level Achievement Not Met

*If less than Met, program should plan further action to improve performance.

Further Action Planned

What strengths were displayed through the assessments of your measures? No strengths were displayed.

1. Continue utilizing Campus Activities Board calendar. Use texting and social media to systematically send reminders with upcoming event/activity information.

2. Encourage students to complete activity forms by making them part of their student handbook so that they will be readily available.

Revamp Services Planned Changes

Make Technology Related Improvements Planned Changes

Describe Changes Continue CAB partnership, use texting/social media to systematically send reminders with upcoming event information. Include activity form as part of student handbook, making it readily available to students attending events.

Person/ Group responsible for action KEYS Program Staff

Target Date for implementation of the action 08/21/2017

Priority High
Assessment Period(s): AY 2016-2017

Organization Type(s): College, Department, Division, Program, University

Organization(s): Student Success Center

Display blank entries: No

AWC

AY 2016-2017

Student Success Center

Students who participate in Student Success Center services will demonstrate the ability to persist, successfully complete coursework and graduate

Measure 1: Over a three-year period, students who participate in SSC services will persist at a rate of 5% higher than students who do not use SSC services.

Measure 1 Type: Indirect

Measure 1 Results: Results from data submitted to IERG are still pending.

Measure 2: Over a three-year period, students who participate in SSC services will graduate and/or transfer at a rate of 5% higher than students who do not use SSC services.

Measure 2 Type: Indirect

Measure 2 Results: Results from data submitted to IERG are still pending.

Measure 3: Over a five-year period, students who participate in SSC services will show a course pass rate of 5% higher than that of students who do not receive SSC services.

Measure 3 Type: Indirect

Measure 3 Results: Results from data submitted to IERG are still pending.

Findings

Information not yet available.

*If less than Met, program should plan further action to improve performance.

Further Action Planned

Additional Comments: Information will be input as it becomes available.

Collect and Analyze Additional Data and Information

Planned Changes

Describe Changes

At this time, changes are planned pending results of the data.

Describe Changes

At this time, no changes are planned pending results of the data.

Person/Group responsible for action

Student Success Center Coordinator/IERG

Target Date for implementation of the action

08/01/2017

Priority

Medium
Students will pass their tutored math or English course at a higher rate than non-tutored students

Measure 1:
Students who receive SSC tutoring will pass their tutored course at a rate that is statistically significant over their peers who do not receive tutoring for the same course in 50% of tutored math and English courses.

Measure 1 Type:
Indirect

Measure 1 Results:
Data is not yet available.

Measure 2:
70% of students who attend at least one Supplemental Instruction (SI) Session will perform at the national benchmark of .5 higher GPA than students who do not attend any SI sessions.

Measure 2 Type:
Indirect

Measure 2 Results:
Supplemental Instruction Leaders were used in 13 STEM course sections during the academic year. Eight sections showed a positive increase on grade point average. Three sections showed a positive impact to GPA but less than the targeted 0.5 benchmark. Five sections showed a positive impact of 0.5 or greater to GPA.

Evidence Attachments:
SI Summary Fall 2016.pdf SI Summary Spring 2017.pdf

This Goal was:
Partially Met

Findings
Data from the math and English tutoring centers is incomplete pending results from IERG. However, for the math sections that were supported by supplemental instruction, the intervention appears to have mostly positive results.

Target Level Achievement
Partially Met

*If less than Met, program should plan further action to improve performance.

Further Action Planned

What strengths were displayed through the assessments of your measures?
Not all information is available at this point, but with the information we do have we can see that SI appears to

What weaknesses were displayed through the assessments of your measures?
In using the template provided by the UMKC national website to track our SI statistics, we are not necessarily looking at information that may be helpful internally. Whereas the information we are reporting does help us measure if we are meeting the overall goal of reducing the number of D, W, and/or F in certain targeted courses, it is for the current semester only. It also does not capture any qualitative information from the professors, students, or SI Leaders. Due to the number of possible uncontrollable variables, it may be more meaningful to compare classes with the same professor before the intervention and current.

Additional Comments:
It also may be more helpful to separate out SI with its own goals and measures instead of lumping it together with tutoring. Although we are still trying to see whether or not it made a difference for the students who received the intervention, SI is different than tutoring, and we also service more than just math or English courses. This would allow us to use additional and different assessments to measure success specifically for SI.

1. Make goals for the coming year that are more specific to Supplemental Instruction.
2. Provide current data to IERG and request comparative previous year data to control for professor variable.

Restructure Outcome Statement
Planned Changes

Revise Measurement Approach
Planned Changes

Collect and Analyze Additional Data and Information
Planned Changes

Change Methods of Data Collection
Planned Changes

Describe Changes
Will create outcome statement for SI and separate this out from the tutoring information. Plan to create measures that allow for qualitative data collection. Will request information from IERG to compare success results before the implementation of the SI in targeted courses. Upon interpretation of tutoring data received from IERG, further analysis will be conducted by Math Center Coordinator.

Describe Changes
Any changes pending data interpretation.

Person/ Group responsible for action
Student Success Center Coordinator/IERG/Math Center Coordinator

Target Date for implementation of the action
08/01/2017

Priority
High
Students will report a high level of satisfaction with SSC tutorial services in helping them meet their academic goals

Measure 1: As a result of participation in the SSC tutorial services, 90% of survey respondents will agree or strongly agree that the SSC is helping them reach their academic goals.

Measure 1 Type: Indirect

Measure 1 Results: 94% of respondents indicated that the SSC is helping them meet their academic goals.

Measure 2: As a result of participation in the SSC tutorial services, 90% of survey respondents will agree or strongly agree they feel more prepared and confident in their academic abilities.

Measure 2 Type: Indirect

Measure 2 Results: 92% of survey respondents indicated that they feel more prepared and confident in their academic abilities as a result of using the SSC services.

Evidence Attachments: Copy of AY 16-17 Paper Survey Results (003).xlsx

This Goal was: Met

Findings Of the 121 students who participated in the feedback survey, 12 (10%) agree and 101 (84%) strongly agree that the SSC is helping them meet their academic goals. In addition, 12 (10%) agree and 99 (82%) strongly agree that they feel more prepared and confident in their academic abilities as a result of participating in SSC services.

Target Level Achievement Met

What strengths were displayed through the assessments of your measures? The SSC continues to provide a high level of customer satisfaction. In addition to asking only for responses on a likert scale as in the past, we asked and received more specific feedback from students. This information can be used to improve services and continue current practices that are working well.

What weaknesses were displayed through the assessments of your measures? Results are obtained through student self-reporting and are not directly measured. Results were only captured during the spring semester.

1. Continue to capture both qualitative and quantitative data to measure customer satisfaction.

2. Implement the survey during the fall and spring semesters.

Collect and Analyze Additional Data and Information Implemented Changes, Planned Changes

Describe Changes Made improvements to the Student Satisfaction Survey to capture more specific feedback. Will conduct the survey during both academic semesters.

Person/ Group responsible for action Student Success Center Coordinator

Target Date for implementation of the action 12/01/2017

Priority High

Increase percentage of student population served by 1% per year

No Data