Winter 2021 – Winter 2022

General Education Task Force Report

Submitted by
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- Maria Ballester, *Chair*
- Meline Kevorkian
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- Gregory Simco
- Hyungkee Baek
- Yvette Fuentes, *Arts and Humanities domain representative*.
- Eric Samansky, *Mathematics domain representative*.
- Victor Castro, *Science domain representative*.
- Aya Shigeto, *Social and Behavioral Sciences domain representative*.
- Kelly Anne Concannon Mannise, *Written Composition domain representative*.

B. Introduction

In 2021, a new General Education (Gen Ed) Task Force was established with members from different academic colleges across the NSU. This group was initially charged with developing and recommending an assessment process as evidence of student learning for the Gen Ed's learning outcomes. During our short tenure (Winter 2021 – Winter 2022), the task force not only accomplished all the original goals we established at the beginning of our term, but we were able to introduce a set of clear and practical rules will help us in future cycles.

1. Summary of Achievements

This is a short summary of our achievements, please refer to the sections below for a more detailed description:

- The chair proposed a transitional plan, that was successfully implemented from Winter 2021 until Winter 2022.
- Faculty selected by the chair served as domain representatives. They were responsible for overseeing the assessment process in their domain and helping faculty and chairs.
- We reviewed and performed a data analysis of the data obtained during previous assessment rounds (Fall 2014 – Winter 2018). The purpose was to identify any type of commonality between the different domains in terms of criteria of success and methodology. Additionally, we wanted to detect trends within the data. Our conclusion is that there were no clear standards within the different domains.
- We communicated with Deans and Chairs to help us identify the methodology used in previous assessments. With the help of department chairs, we identified the course(s) to be assessed and the participating faculty. We had a broad selection that included daytime, evening, online, and some honors courses. We also wanted to assess at least 25% of the student population per course.
- We discussed and agreed to have standard criteria for expectation targets on student performance.
    - An *average individual proficiency threshold* (AIPT) of 2.5 points was established. Thus, successful students should have an *average individual proficiency* (AIP) of 2.5 points or better.
    - A *learning outcome proficiency target* (LOPT) was set at 70%. Thus, our goal was to have a *learning outcome proficiency* (LOP) of 70% or better. In other words, we expected that at least 70% our students scored at or above the AIPT (2.5 points).
- We identified the data to collect and how to analyze it. We also reviewed and updated the domain rubrics used for the assessment.
- Additionally, we set up specific rules and rubrics for the different types of artifacts used. We wanted to involve faculty in the creation of the artifacts as they are an important part of the process. We also involved faculty and department chairs in the Gen Ed course review process by asking them to complete a course mapping feedback document.

- We created a standard report document (Excel file) to facilitate data gathering, report writing, and course mapping.
- We successfully completed the assessment round for Fall 2021.
- Another major undertaking was the process of establish clear rules for the Gen Ed program in general. For example, reviewing/cleaning up the Gen Ed courses list, discussing the domain changes, and evaluated the benefits and consequences of assessing senior students.
- Perhaps the most important change was to establish a new set of learning outcomes, and their respective assessment rubrics.
- The task force also discussed and approved the next "Three-year Plan" proposed by the chair.

2. Assessment Overview

NSU uses multiple measures to assess the effectiveness of its General Education program. Central to the process is a course-based assessment in which participating faculty assess the effectiveness of general education courses in meeting stated general education learning outcomes.

- The Fall 2021 General Education assessment process yields very positive results overall.
- We also took this opportunity to have an idea of the performance of our students after the pandemic.
- Faculty members from 17 courses, divided into 53 sections, assessed 803 students in 5 domains representing between25% to 30% of their courses.
- We used 23 artifacts, divided into 80 items, selected/created by faculty of each domain, and standardized through each of the assessed courses.
- Overall, the learning outcome proficiency (LOP) was 74%, with an average individual proficiency (AIP) of 2.93 points.
- This assessment has generated a considerable body of evidence that our students are meeting successfully all ten General Education learning outcomes.
- We can confidently say that our goal for the Fall 2021 assessment was met.

C. Background

The goal of the General Education Program at NSU is to help our students develop effective skills in speaking, listening, writing, reading, critical interpretation, and to appreciate the role of different cultural traditions. The program's curriculum represents the core knowledge expected of all individuals who graduate from NSU. The current Gen Ed framework expects all students to complete the programs requirements by the end of their junior year through a series of courses in 5 domains: Arts and Humanities, Mathematics, Science, Social and Behavioral Sciences, and Written Composition.

1. New Mission Statement*

The NSU undergraduate General Education Program prepares students to be responsible citizens in a dynamic, global environment and fosters intellectual curiosity, and knowledge about diverse ideas and cultures by helping students develop the ability to solve problems effectively, think analytically, and communicate clearly. The program provides a common connection among all NSU undergraduates through a rigorous set of writing; mathematics; arts and humanities; social and behavioral science, and biological, and physical science requirements.

*Proposed by the previous General Education Task Force.

2. Learning Outcomes*

The General Education curriculum is designed to ensure breadth of knowledge and intellectual inquiry with student learning outcomes consistent with the University's mission and vision. The General Education curriculum was designed with ten learning outcomes, detailed below:

Upon successful completion of the General Education Program, students are expected to:

1. Demonstrate an understanding of and appreciation for the various methods utilized in a variety of arts and humanities disciplines.
2. Delineate the means by which different scholarly fields reflect, interact with, and influence human thought, culture, and values.
3. Demonstrate knowledge of fundamental mathematical principles and concepts.
4. Achieve basic quantitative literacy to interpret quantitative data into meaningful terms and understand relationships between sets of quantitative data.
5. Apply methods of scientific inquiry.
6. Achieve basic scientific literacy to make informed decisions on contemporary consumer or social issues.
7. Understand and appreciate the role of the individual in a group.
8. Understand the major concepts and methods used by social or behavioral scientists to investigate, analyze, or predict human or group behavior.
9. Express ideas clearly and coherently.
10. Use the English language effectively to construct logical and persuasive arguments.

* General Education Learning Outcomes, in place since 2014.

3. Gen Ed Domains

NSU requires that undergraduate students complete 30 credit hours as part of the General Education Program in the following domains:

Written Composition	6 COMP credits at or above COMP 1500.
Mathematics	6 MATH credits at or above MATH 1040
Arts and Humanities	6 credits in any courses with a prefix of ARTS, DANC, FILM, HIST, HUMN, LITR, MUSC, PHIL, SPCH, THEA, or WRIT, or in a Foreign Language.
Social and Behavioral Sciences	6 credits in any courses with a prefix of ANTH, COMM, ECN, GEOG, GEST, INST, POLS, PSYC, or SOCL.
Science	6 credits in any courses with a prefix of BIOL, CHEM, ENVS, MBIO, NEUR, SCIE, or PHYS.

Table 1. General Education Requirements and Domains.

D. Fall 2021 Assessment Analysis and Report

Please see Annex–1 for a complete analysis and report document.

- The performance of NSU students was assessed in each of the Gen Ed learning outcomes.
- Our LOPT was set at 70%. In other words, we expected that at least 70% of our students will score at or above 2.5 points (AIPT).
- We also took this opportunity to have an idea of the performance of our students after the pandemic.
- Faculty assessed:
    - 803 students in 5 domains. The largest number ever assessed at NSU.
    - 17 courses, divided into 53 sections. A 25% to 30% of the chosen courses' available sections.
    - 23 artifacts, divided into 80 items, selected/created by faculty of each domain, and standardized through each course.

- Overall, the LOP was 74%, with an AIP of 2.93 points. We can confidently say that our goal for the Fall 2021 assessment was met.

Domain	# Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	56	56%	2.60	3	3	6	12
Mathematics	270	68%	2.88	4	20	5	22
Sciences	293	88%	3.28	4	17	5	22
Social and Behavioral Sciences	161	93%	3.23	5	8	5	18
Written Composition	23	64%	2.64	1	5	2	6
Overall Results	803	74%	2.93	17	53	23	80

Table 2. Results for the Learning Outcome Proficiency (LOP) and Average Individual Proficiency (AIP) for all domains

Table 3 contains a summary for each domain between Fall 2014 and Fall 2021 assessment rounds. During this time, 9 assessments were performed overall. As can be seen, during the Fall 2021 assessment period:

- We assessed close to 20% of the total number of undergraduate students (803).
- Our AIP of 2.93 improved by almost 6%, compared to our previous assessment round.
- All domains did relatively well, considering the effect the pandemic had on our students. For example, compared to our previous assessment round, Science and Mathematics had an AIP increase of 28% and 19% respectively.

	Art and Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition	AIP	# Students
2014 Fall	2.86	2.77	3.13	2.88	2.87	2.90	386
2015 Winter	2.89	2.25	3.02	2.56	3.16	2.78	180
2015 Fall	2.88	2.49	3.21	2.68	3.30	2.91	279
2016 Winter	N/A	2.17	3.03	N/A	N/A	2.60	102
2016 Fall	2.93	2.06	3.18	N/A	2.48	2.66	195
2017 Winter	2.70	2.83	3.17	2.65	2.71	2.81	242
2017 Fall	2.76	3.27	2.95	2.88	2.85	2.94	220
2018 Winter	2.77	2.43	2.56	3.20	2.88	2.77	275
2021 Fall	2.60	2.88	3.28	3.23	2.64	2.93	803

Table 3. Summary of the results of each domain from the Fall 2014 until Fall 2021.

Domain	Daytime	Evening	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference	Evening	Online	% Mean diff	Statistical difference
Arts and Humanities	2.75	2.09	27%	YES								
Mathematics	2.11	2.88	–31%	YES	2.11	2.98	–34%	YES	2.88	2.98	–4%	NO
Science	3.39	3.04	11%	YES	3.39	3.89	–14%	YES	3.04	3.89	–25%	YES
Social and Behavioral Sciences	3.29	3.37	–2%	NO	3.29	3.10	6%	NO	3.37	3.10	8%	NO
Written Composition	2.86	2.73	5%	NO	2.86	2.36	19%	YES	2.73	2.36	15%	NO

Table 4. The differences between the means of daytime, evening, or online courses.

- We also determined the difference between daytime, evening, or online courses achievements (Table 4).
    - *Daytime/Evening*: there is a statistically significant difference in the *Arts and Humanities*, *Mathematics* and *Science* domains, mostly in favor of the daytime students. However, *Mathematics* shows an unexpected difference in favor of the evening students. *Social and Behavioral Sciences* and *Written Composition* students did not have a statistically significant differences, and thus we can conclude that both groups performed equally well.
    - *Daytime/Online*: except for *Social and Behavioral Sciences* there was a statistically significant difference mostly in favor of the online students.
    - *Evening*/*Online*: we did not find any statistically significant difference, except for the *Science* domain for which there was a percentage mean difference of 25% in favor of online courses.

- Additionally, we wanted to see if students taking honor courses scored significantly better than regular courses' students. We expected to see a difference in favor of the honor courses.
    - Overall, students taking honor courses performed an average of 23% better than students taking the regular counterpart courses.

	Regular	Honors	% Diff
MATH 2020	2.14	3.60	51.0%
CHEM 1300	3.03	3.56	16.2%
PSYC 1020	3.36	3.33	0.8%

Table 5. Regular vs. Honor courses. Results for the Average Individual Proficiency (AIP) for all honor courses assessed.

- The difference is most markedly seen in MATH 2020 with a 51.0% difference in favor of the honor course.
- CHEM1300 is second, with a 16.2% difference.
- For PSYC1020, there were no statistically significant difference between the two groups, as the difference was less than 1%.

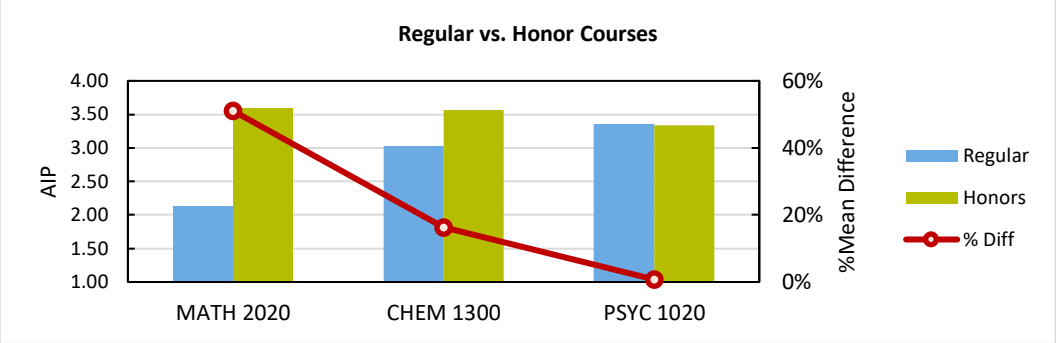

Figure 1. The differences between the means of students taking regular courses to those taking honor courses.

E. Goals reached

1. Transitional Period Plan

The General Education Task Force followed a transitional period plan (Winter 2021 –Winter 2022) with the main goal of having a student assessment round. The second goal was to use this transitional period to work on improvements and changes to the Gen Ed program, and to establish the foundations (rules and guidelines) for future assessment periods. Table 5 shows the transitional period agenda. After we completed this transitional stage, a new three-year plan was proposed and approved.

Winter 2021	Fall 2021	Winter 2022
• Began the process of reviewing/cleaning the Gen Ed courses and set a general guideline. • Involved faculty and department chairs in the course review process, following the guidelines created. • Evaluated benefits and consequences of changing the "Science" domain to "Natural Sciences". • Discussed ideas to educate the NSU community about Gen Ed.	• Continued the process of reviewing the Gen Ed courses. • Got feedback from faculty and department about the course review process. • Began the process of establishing clear rules for the Gen Ed program • Began the process of creating a web space for Gen Ed. Emphasis should be on educating our community about its importance.	• Review results of the course review process. Discuss possible changes and plan appropriately. • Review results of the Gen Ed web space. Discuss possible changes and plan appropriately. • Continue the process of establish clear rules for the Gen Ed program. • Write a final report for the transitional period. • Close the transitional period.

Table 6. Proposed agenda for the transitional period.

A central part of the General Education program is to assess whether students have been able to achieve the goals of the Gen Ed learning outcomes. This assessment does not evaluate courses or faculty teaching them, but rather looks at the performance of students. Currently, our assessment method is based on course embedded assignments, where students'

performance is measured on a 4.0 points scale (1.0 equals Ineffective, 2.0 equals Adequate, 3.0 equals Effective, and 4.0 equals Outstanding). The previous assessment round was held more than 3 years ago, during Winter 2018. Thus, it was imperative to have a new assessment round as soon as possible. That transitional assessment round was held during the Fall 2021 semester and covered all five domains. Table 6 shows the schedule we used to design, implement, and analyze the assessments.

Winter 2021	Fall 2021	Winter 2022
Design	*Implement*	*Analyze and Report*
• Identify course(s) to assess and review their syllabi. • Set tools and rubrics. • Identify data to collect. • Discuss criteria for expectation targets and set student performance metrics. • Faculty from each domain will start building the artifact/question bank.	• Utilize assessment rubric(s) to gather data on freshmen and sophomore student performance. • Gather results/raw data. • Organize and store data.	• Involve faculty in the analysis of the assessment collected. • Sort and tabulate data and compare findings to expectation targets. • Review assessment results and indicate whether to implement changes and plan appropriate revisions. • Engage department faculty in preparing a data results report. • Analyze data. • Review results and discuss possible changes and plan appropriately.

Table 7. 2021-2020 Transitional period plan for General Education assessments.

2. Review of previous assessments

To expedite the assessment plan, I summarized the information provided by every domain during the period of Fall 2014 to Winter 2018. I also did a preliminary analysis of all the data obtained during that period for each of the domains assessed (Annex–2). This summary also included a comparison between the different assessment cycles, and it was shared with the task force. Every document had comments that we discussed during our follow up meetings. Additionally, I began the process of contacting either the chair responsible for the assessed courses, or faculty that helped during the assessments, so we could better understand the information provided in those reports.

While writing the summary document, it was clear that we needed to have a standard, across the board, for every step of the assessment process. Not only the domain reports were different, but there were also diverse criteria for percentages of success, target scores, definitions of what an artifact is, what types of artifacts to use, etc. Likewise, essential data like student enrollment was also missing. Additionally, faculty were expecting feedback of the assessments results, that apparently was not provided. These findings reinforced my belief that in order to have a successful and meaningful assessment round, a transitional plan was necessary. It also made it clear that there is a need to improve the Gen Ed program in general.

3. Communicated with Deans and Chairs to identify course(s) assessed and methodology (per domain).

The General Education Task Force started by contacting the Deans and Chairs involved in some of the previous assessment rounds. I wanted to open the lines of communication between them and the new Gen Ed task force. But most importantly, we were interested in all relevant information obtained by their departments during the last assessment round (Winter 2018). Specifically, we were asking for Gen Ed reports, courses offered, faculty involved, methodology, and any other relevant information that they might think will help us during the assessment process. I also took the opportunity to introduce them to the domain representatives, as they were going to work directly with the chairs and faculty involved in the assessments. Most chairs answered immediately and sent us the information requested along with other documents and suggestions.

4. Identified course(s) to be assessed, including Honors courses.

Based on the review of previous assessment mentioned above, we made an initial list of courses for the Fall 2021 assessment round. The selection of courses followed these rules:

- For this transitional plan, assessed courses will be the same or similar to the ones used in the previous round.

- At the request of the Social and Behavioral Sciences domain representative, we included PSYC-1020. This course was assessed in a previous round.
- Some courses were not in the current catalog, so we chose the closest ones.

- To have a wider view of our student population, we
  - Included honors versions of the courses, when available.
  - Included daytime, evening, and online courses, so we can cover all NSU students.
  - The number of sections selected to assess a course covered between 25% to 35% of the course's student population.

I contacted department chairs (cc Deans) to inform them of our choice and to ask them to help us determine the faculty that will teach these courses. We suggested faculty that had assessed a Gen Ed course previously. We also gave them the choice to change the courses, if they thought there was better options, or the courses were no longer in the catalog. Most department chairs answered with their suggestions. For the ones that didn't answer, we kept our selection of courses and faculty. The following table has detail information about the courses assessed per domain, including the names of the participating faculty and reviewers.

Arts and Humanities	Domain representative: Yvette Fuentes			
Humanities and Politics	HIST 1050 The United States: From Settlement to Superpower			Reviewers
	HIST 1050	D02	Katy Doll	Teng Li Charles Zelden
Humanities and Politics	LITR 2010 British Literature I			
	LITR 2010	D01	Aileen Farrar	Marlisa Santos Yair Solan
Communication, Media, and the Arts	THEA 1000 The Theatre Arts			
	THEA 1000	L04	Alexandra Hernandez	Daniel M. Gelbmann Bill Adams
Mathematics	Domain representative: Eric Samansky			
Mathematics	MATH 1040 Algebra for College Students			
	MATH 1040	L02, L07	Iuliana Stanculescu	
	MATH 1040	L04, D01	Eric Samansky	
	MATH 1040	E01	Abushieba Ibrahim	
Mathematics	MATH 1200 Precalculus Algebra			
	MATH 1200	L03	Ricardo Carrera	
	MATH 1200	D02, D03	Edmond Lee	
	MATH 1200	E01	Olukayode Dare	
Mathematics	MATH 2020 Applied Statistics			
	MATH 2020	L03, L10	Lei Cao	
	MATH 2020	D10, E01	Yueting Wan	
Mathematics	MATH 2020H Applied Statistics Honors			
	MATH 2020H	D01	Jason Gershman	
Sciences	Domain representative: Victor Castro			
Biological Sciences	BIOL 1040 Environmental Studies			
	BIOL 1040	L01	Adriana Alegre	
	BIOL 1040	E01	Shawn McQuaid	
Biological Sciences	BIOL 1500 Biology I/Lab			
	BIOL 1500	E01, E05	Adriana Alegre	
	BIOL 1500	D01, D02, D03, D07, D08, D09	Andrew Ozga	
Chemistry and Physics	CHEM 1300 General Chemistry I/Lab			
	CHEM 1300	E03, E04, E05	Manuel Constantino	
	CHEM 1300	D16, D17	David Carnevale Jr	
Chemistry and Physics	CHEM 1300H General Chemistry I/Lab Honors			
	CHEM 1300H	D01, D02	Dimitri Giarikos	

Social and Behavioral Sciences	Domain representative: Aya Shigeto			
Humanities and Politics	INST 1500 Global Issues			
	INST 1500	D01	Ransford Edwards	Nelson Bass Yvette Fuentes
Conflict Resolution Studies	ANTH 1020 Introduction to Anthropology			
	ANTH 1020	L01	Jessie Johanson	Eileen Smith-Cavros
Conflict Resolution Studies	SOCL 1020 Introduction to Sociology			
	SOCL 1020	L01	Eileen Smith-Cavros	Jessie Johanson
	SOCL 1020	E01	Phyllis Baker	Mark Cavanaugh
Psychology and Neuroscience	PSYC 1020 Introduction to Psychology			
	PSYC 1020	L02	Matthew Murphy	
	PSYC 1020	D06, D10	Myron Burns	
	PSYC 1020	D14	Madhavi Menon	
	PSYC 1020	E01	Ashley Kniola	
Psychology and Neuroscience	PSYC 1020H Introduction to Psychology Honors			
	PSYC 1020H	D01	Leanne Boucher Gill	
Written Composition	Domain representative: Kelly Anne Concannon Mannise			
Communication, Media, and the Arts	COMP 2000 Advanced College Writing			
	COMP 2000	L01	Juliette Kitchens	Janine Morris Moly Scalon Mario D'Agostino
	COMP 2000	L02	Jennifer Booker (Eddings)	
	COMP 2000	E01	Billy Jones	
	COMP 2000	D06	Shoorangiz (Shoory) Rahimi	
	COMP 2000	D09	Kelly Anne Concannon	

Table 8. Courses assessed per domain, including participating faculty.

5. Identified criteria of performance, data to collect, artifacts and rubrics

a. Criteria of performance

We set the student's performance metrics as follows:

- *Average individual proficiency threshold* (AIPT) was established at 2.5 points (between adequate and effective). Successful students should have an *average individual proficiency* (AIP) of 2.5 points or better.
- *Learning outcome proficiency target* (LOPT) was set at 70%. The expectation is to have at least 70% our students score at or above the AIPT (2.5 points).

b. Data collected

Apart from the scores obtained for each student, we also collected information about:

- Student Average score per objective.
- The frequency distribution by objective for all artifacts:
  - how many students score a 1, 2, 3, or 4 in objectives A, B, C, etc.
  - percentage of students that scored a 1, 2, 3, or 4 in objectives A, B, C, etc.

c. Artifacts, Mapping, and Rubrics

Artifacts

We started with the idea that the assessment process needed to be standardized. Not only the scoring needed a set of rules, but the artifacts used needed it as well. We subsequently developed a guideline that every domain followed. The next step was to educate the participating faculty (please see Annex–3). I believe that faculty are a fundamental part of this process, as they oversee the assessment for each of the selected courses, gather the results, analyze the data, and deliver a brief report to us. With that in mind, the domain representatives and I scheduled a set of meetings with the participating faculty to review and answer any questions about the assessment process they might have. Department chairs were also invited. These meetings were very important, as everyone involved needed to agree on the type and number of artifacts each course had to use in the assessment.

A short summary of the proposed rules are as follows:

- We use the term artifact to name direct measures (assignments), divided into specific tasks/questions, referred as items.
- Artifacts are course embedded and designed/chosen to measure the Gen Ed learning outcomes though a series of assessment rubrics, divided into measurable objectives.
- Courses are allowed to use multiple measures to assess any individual Gen Ed learning outcome. However, no single item could be used to assess more than one rubric objective.
- Rubric's objectives were scored on a 1-to-4-point scale: Ineffective (1), Adequate (2), Effective (3), and Outstanding (4).
- The assessed student work should be part of the assignments that students are completing for the course and not an additional assignment meant only for the Gen Ed assessment process.
- *Question-type artifacts* (multiple choice): a minimum of 1 artifact may be used (e.g., a multiple-choice final exam). However, there must be at least 2 questions per assessment rubric objective. Each question used must have a specific rubric. (Please see Annex 4 for examples of rubrics created for this assessment round).
- *Essay-type artifacts*: a minimum of 2 artifacts (e.g., a midterm paper and a final paper, or two essay questions) are to be used. Generally, each artifact can be used to measure all the rubric's objectives. However, each objective is considered a question and must be scored separately.
- All sections of the same course must use the same assessment questions, embedded in a similar or different artifact. Thus, faculty teaching those sections should agree on them.

The table below summarizes the number and type of artifact used in this assessment round.

Domain	Course	# Sections	Artifacts			
			#	Type	Questions/Essays	Reviewers
Arts and Humanities	HIST 1050	1	2	Essay / Papers	2	2
Arts and Humanities	LITR 2010	1	2	Essay / Papers	2	2
Arts and Humanities	THEA 1000	1	2	Essay / Papers	2	2
Mathematics	MATH 1040	5	1	Essay	10	1
Mathematics	MATH 1200	4	1	Essay	10	1
Mathematics	MATH 2020 / 2020H	4	1	Essay	10	1
Sciences	BIOL 1040	1	1	Multiple Choice	6	1
Sciences	BIOL 1500	8	1	Multiple Choice	6	1
Sciences	CHEM 1300 / 1300H	7	2	Multiple Choice	12	1
Social and Behavioral Sciences	INST 1500	1	2	Essay / Papers	2	2
Social and Behavioral Sciences	ANTH 1020	1	1	Essay / Papers	2	1
Social and Behavioral Sciences	SOCL 1020	2	1	Essay / Papers	2	1
Social and Behavioral Sciences	PSYC 1020 / 1200 H	6	1	Multiple Choice	6	1
Written Composition	COMP 2000	5	2	Essay / Papers	2	3

Table 9. Types of Artifacts used in the courses assessed per domain.

Rubrics

We reviewed the assessment rubrics we have been using in previous assessment rounds (please see "Gen Ed Learning Outcomes and Assessment Rubrics" in Annex–4). One of our members (David Griffin), analyzed them and suggested using measurable language in all the domains, except for "Mathematics" and "Science". The "Arts and Humanities" representative consulted with members of her faculty and proposed a change in their assessment rubric that was approved by the task force. Questions used in multiple choice artifacts needed rubrics as well. Domain members joined participating faculty, and sometimes department chairs, to decide the questions to be used and build their assessment rubrics. Annex–5 has a couple of examples for two different domains.

Mapping

Additionally, based on an idea of one of our members (Ramina Benjamin), we used this opportunity to query faculty about their courses in the context of Gen Ed (Annex–6). We developed a mapping document (Fig. 2) to:

- Examine the current Gen Ed courses and verify that all identified Gen Ed learning outcomes are adequately addressed.
- Identify where and how student's learning is (or can be) assessed.
- Determine how well a course aligns with the Gen Ed learning outcomes.
- Help us structure the curricula for the Gen Ed program.

The information we gathered during the meetings helped us create Excel files tailored for each course. An example of an Excel file can be seen in Annex–8. These files were used by faculty for score gathering, data analysis, report writing, and mapping of each course. During the first couple of weeks of the Winter 2022 semester these files were sent to the domain representative to be analyzed and generate feedback. Every time a new course is assessed it should be mapped against the learning outcomes. If the learning outcomes are changed or updated, then all courses assessed should be mapped against the new ones.

General Education Mapping

Domain: Social and Behavioral Sciences **Course:** PSYC 1020 **Instructor:** 0

This form is designed to give the Gen Ed program feedback about your course. It will help us:
1. Examine current Gen Ed courses to verify that all identified Gen Ed learning outcomes are adequately addressed.
2. Identify where and how student's learning is, or can be, assessed.
3. Determine how well a course aligns with the Gen Ed learning outcomes.
4. Structure the curricula for the Gen Ed program.

Learning Outcomes
1) Gain an understanding of the nature of the field of psychology in general.
2) Develop the ability to analyze the etiology of human behavior.
3) Explore the various theories of psychological disorder and accompanying treatments.
4) Develop an understanding of how social processes impact human behavior.

Based on your experience with the course, please make a selection in the table below.

Gen Ed Learning Outcomes (LO)	Which of the course's LOs above, closely matches this Gen Ed LO? (You can select more				How is the course content aligned with this Gen Ed LO?	With what emphasis does the course content addresses this Gen Ed LO?
	1	2	3	4		
LO #1 Demonstrate an understanding of and appreciation for the various methods utilized in a variety of arts and humanities disciplines.	☐	☐	☐	☐		
LO #2 Delineate the means by which different scholarly fields reflect, interact with, and influence human thought, culture, and values.	☐	☐	☐	☐	Not Addressed Implied Explicitly Stated	None Introduced Significant
LO #3 Demonstrate knowledge of fundamental mathematical principles and concepts.	☐	☐	☐	☐		
LO #4 Achieve basic quantitative literacy to interpret quantitative data into meaningful terms and understand relationships between sets of quantitative data.	☐	☐	☐	☐		
LO #5 Apply methods of scientific inquiry.	☐	☐	☐	☐		
LO #6 Achieve basic scientific literacy to make informed decisions on contemporary consumer or social issues.	☐	☐	☐	☐		
LO #7 Understand and appreciate the role of the individual in a group.	☐	☐	☐	☐		
LO #8 Understand the major concepts and methods used by social or behavioral scientists to investigate, analyze, or predict human or group behavior.	☐	☐	☐	☐		
LO #9 Express ideas clearly and coherently.	☐	☐	☐	☐		
LO #10 Use the English language effectively to construct logical and persuasive arguments.	☐	☐	☐	☐		

Figure 2. Mapping document.

6. Program improvements and proposed changes

During these past seven years, the Gen Ed program has given us a basic framework to help our students succeed after their graduation, thus achieving its original mission and goals. However, I strongly believe that the Gen Ed program needs to grow. Therefore, we need to establish a strong foundation that will allow us to have consistency, and yet be flexible enough to evolve.

a. Learning Outcomes and Assessment Rubrics

One of the complaints the Gen Ed task force received from participating faculty, was the disconnection between the Gen Ed learning outcomes and some of the assessment rubric objectives. In fact, the assessment rubrics we currently use do not directly assess the learning outcomes. Thus, we agreed that we needed to revise the learning outcomes we currently use and their associated assessment rubrics. The current proposed changes (Annex–7) were consulted with deans, chairs, and faculty for their review and approval. The new learning outcomes are based on three pillars (categories), aligned with the mission of NSU and the Gen Ed program:

- Foundation: Knowledge and comprehension of the terminology, concepts, methodologies, and theories used within the subject area.
- Critical thinking: Analysis of problems, issues, ideas, and evidence before accepting or formulating an opinion or conclusion.
- Communication: Development and expression of ideas in different forms.

Each domain will have three learning objectives based on the new Gen Ed's LOs. Assessment rubrics were created to measure these learning objectives directly.

b. Selection of Gen Ed Courses and Core courses

The General Education curriculum is the *broadest* exposure to academic specializations upon which students go on to build their specialized knowledge in their chosen fields. Thus, the Gen Ed courses seeks to ensure students gain exposure to different fields of knowledge before embarking on their own specialized fields of study. The Gen Ed requirements are meant for all students, to provide the foundation for the education offered at NSU.

Sadly, the Gen Ed curriculum has used a review system that has resulted in a large and unwieldy set of courses that will only increase in size over the years, undermining its identity and its quality alike. As of 2022, more than 800 Gen Ed courses are offered at NSU, most of them at the 3000 – 4000 levels (over 480 courses). A number like this makes it impossible to manage and to assess properly.

I have proposed a few changes to narrow the list of Gen Ed courses available for assessment to less than 100. Additionally, for the next three-year cycle, we created a set of General Education core courses for assessment purposes (Table 9). This will not only facilitate the assessment process, but it will also have the potential to benefit transfer students.

Mathematics	Social and Behavioral Sciences	Art and Humanities	Written Composition	Sciences
MATH 1040	SOCL 1020	ARTS 1000		BIOL 1040
MATH 1200	INST 1500	HIST 1050	COMP 2000 /2000H	BIOL 1500
MATH 2020 / 2020H	PSYC 1020 / 1020H	PHIL 1010		CHEM 1300 / 1300H

Table 10. General Education core courses for assessment purposes.

We are proposing the following changes to update the current available list of Gen Ed courses. Implementing them must be a decision coming from the Provost's office.

1. Eliminate courses no longer offered in the Undergraduate Student Catalog. This will remove around 200 courses from every level and category.
2. General Education courses should be available every academic year. Eliminate courses that are offered out of sequence. This will remove over 280 additional courses.
3. Modify the review process for new and existing Gen Ed courses. We can, and probably should, follow SACSCOC requirements (pages 81–83 of the Resource Manual in Annex–8): *"… courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession*". These rules are similar to the ones in effect for state universities in Florida. Complying with these rules not only allow us to have a recognized standard, but it will facilitate transfer students' integration into NSU. Thus, we should remove all 3000-4000 level courses that, by definition, are very specific to each field of study.

c. Senior Students Assessment

For our next three-year cycle, we are going to implement a senior student assessment. The following are part of the basic plan:

- Senior students will participate in an assessment provided through a common test.
- A group of randomly selected students will take the assessment test.
- The test will be taken at the end of every three-year cycle.
- Tests could be purchased. One option is the *ETS Proficiency Profile* which has the advantage of no preset administration dates. Additionally, ETS offers an abbreviated (40-minute) test, which will be more convenient for us.

d. Promoting General Education

Despite its clear importance in the curriculum, General Education has not been given the attention it deserves. Currently, the university maintains a few and sparse websites that share the same basic information found in the student's catalog. This sole resource simply describes General Education as a set of requirements, and it does not clearly articulate why such requirements exist, or why they are set up the way they are. As a result of this minimal information, the NSU community does not understand or value the General Education program. Therefore, changes need to be made so that students and faculty are well informed about the program. I believe these changes will increase their understanding and interest and will benefit retention. To accomplish these changes, we need the willing participation of a variety of people that can be used to better advertise the values of General Education and the rationale behind its requirements.

Here are a few ways to communicate with the NSU community, especially with students:

- Admissions, advising offices, and faculty (requires training of the participants).
- Posters and flyers around campus.
- Dedicated website and social media.
- Alumni outreach.

e. Student catalog, and content requirements

All Gen Ed courses should be explicitly listed in the students' catalog. The following statement can be used:

> "*General Education (Gen Ed): Successful completion of this course satisfies the same number of credits in the* xyz *domain*".

Additionally, these courses must dedicate some class instructional time (maybe one lecture) to present an overview of the intellectual traditions associated with the domain their class is representing. I consider that this is a useful tool to encourage student engagement, and it's important for students to understand how a course fits within a broader domain.

f. General Education Committee

Although the Gen Ed task force has had many accomplishments during its different iterations, I strongly believe that the next step is the creation of a standing Committee on General Education. A standing Committee is essential in order to have continuity and fully achieve our mission. The committee should:

- Be directed by a member of the faculty.
- Be composed of faculty members who will serve as the domain representatives, responsible of one or more of the general education domains.
- It also must also include one or more members assigned by the Provost's office, and possibly a student member.
- Should work with department chairs to encourage their faculty to develop general education courses under specific set of rules. Departments should be actively involved in recommending courses for general education.

- The committee must be reviewed every three years.

F. Proposed 3-year Plan

Due to the importance Gen Ed has for SACS accreditation, the General Education Assessment should have a periodicity. A current goal of the General Education Task Force is to review the existing program and improve it by establishing a clear set of rules and guidelines. In this proposal, all domains must be assessed within a 3-year cycle (Fall 2022 to Fall 2025) to ensure optimum continuous quality improvements on our assessment methods and the Gen Ed program in general.

1. Program Plan

The improvements proposed will be carried through a three phases plan, as follows:

Phase 1 (Fall 2022 – Winter 2023)	Phase 2 (Fall 2023 – Winter 2024)	Phase 3 (Fall 2024 – Winter 2025)
• Revise the LOs and assessment rubrics. • Begin the process of reviewing/cleaning the Gen Ed courses and set a general guideline. • Discuss establishing core courses for assessment purposes. • Involve faculty and department chairs in the course review process, following the guideline created. • Discuss ideas to educate the NSU community about Gen Ed. • ETS Exam discussion.	• Continue the process of reviewing the Gen Ed courses. • Get feedback from faculty and department about the course review process. • Begin the process of establish clear rules for the Gen Ed program • Begin the process of creating a web space for Gen Ed. Emphasis should be focused on educating our community about its importance.	• Discuss results of the course review process. Implement possible changes and plan appropriately. • Review results of the Gen Ed web space. Discuss possible changes and plan appropriately. • Continue the process of establish clear rules for the Gen Ed program. • Write a final report for this cycle. • Close the cycle.

Table 11. General Education three-year program improvements plan.

2. Assessment Plan

Evidence that the General Education program has attained its goals is accomplished through an assessment plan. The plan focuses on finding whether students have attained the learning outcomes or not. This program level assessment does not evaluate courses or the performance of faculty.

Table 11 shows the general schedule we will follow to design, implement, and analyze the assessments. Assessments will cover all the domains and will follow a similar procedure as the one we established during the Fall 2021 assessment round. However, a few changes will be introduced:

- Two full assessment processes will be carried every cycle.

	Phase 1	Phase 2	Phase 3
Fall	*Design Assessments* • Identify the course(s) to assess during the 3-year plan and review their syllabi. • Set the tools and review the rubrics. • Validate selected assessment tool(s). • Identify data to collect, based on previous cycle. • Discuss criteria for expectation targets and set student performance metrics. *Perform First Assessment* A • Utilize the assessment rubrics to gather data on student performance and store data.	*Analyze First Assessment* B • Involve faculty in the analysis of the assessment collected. • Sort and tabulate data and compare findings to expectation targets. *Perform Second* Assessment A • Utilize the assessment rubrics to gather data on student performance and store data.	*Perform Senior Assessment* • Use ETS or another external tool. *Analyze Assessment* B *Results* • Involve faculty in the analysis of the assessment collected. • Sort and tabulate data and compare findings to expectation targets.
Wint	*Analyze First Assessment* A • Involve faculty in the analysis of the assessment collected.	*Analyze Second Assessment* A • Involve faculty in the analysis of the assessment collected.	*Analyze Senior Assessment* • Analyze and compare findings to expectation targets

	Phase 1	Phase 2	Phase 3
	• Sort and tabulate data and compare findings to expectation targets. *Perform First Assessment* B • Utilize the assessment rubrics to gather data on student performance and store data.	• Sort and tabulate data and compare findings to expectation targets *Perform Second Assessment* B • Utilize assessment rubric(s) to gather data on student performance and store data.	*Develop and Implement Action Plan* • Review assessment results and indicate whether to implement changes and plan appropriate revisions. • Act on the assessment findings. • Recognize challenges and recommend appropriate adjustments. • Identify areas for improvement and develop an action plan. • Determine recommended changes from assessment findings. • Document any changes and modifications. • Engage department faculty in preparing an assessment follow-up report. • Close the assessment cycle.

Table 12. Three-year plan for General Education assessments.

- Each assessment round will be divided in two parts as follows (Please see Table 12 for more detail):

  Assessment A (Fall semester): Mathematics, Science, first half of Social and Behavioral Science (Psychology).

  Assessment B (Winter semester): Arts and Humanities, second half of Social and Behavioral Science, and Written Composition.

- Senior Assessment. The assessment will be given during the Fall Semester of the third year. We will be using a standardized test, such as ETS, designed for General Education.

Domains		2022 – 2023		2023 – 2024		2024 – 2025	
		Fall	Winter	Fall	Winter	Fall	Winter
Arts & Humanities	Assessment		1B		2B		
	Analysis / Feedback			1B		2B	
Mathematics	Assessment	1A		2A			
	Analysis / Feedback		1A		2B		
Science	Assessment	1A		2A			
	Analysis / Feedback		1A		2A		
Social & Behavioral Science	Assessment	1A	1B	2A	2B		
	Analysis / Feedback		1A	1B	2A	2b	
Written Communication	Assessment		1B		2B		
	Analysis / Feedback			1B		2B	
Senior Assessment	Assessment					SA	
	Analysis / Feedback						SA

Table 13. General Education proposed assessment Schedule 2022-2025: 1 = 1st Assessment, 2 = 2nd Assessment.

3. Changes to the Gen Ed Program

a. Assessment Artifacts

- Assessment at the beginning of the students' college career:
  - Students in their freshmen or sophomore years will participate in an assessment in targeted courses.
  - Besides the assessment core courses, every assessment run will target extra courses per domain. These courses will align with General Education learning outcomes and mission, and SACS-COC requirements.

- Assessment at the end of the students' college career.
    - Senior students should participate in an assessment provided through a common exam (for example, ETS).
    - A group of randomly selected students will take the assessment test.

b. Course Number Reduction

The General Education list of available courses can be narrowed if we make some fundamental changes. Some of the changes should include eliminating courses that are: no longer offered, offered out of sequence, at the 3000-4000 level. Following these steps, the list can be narrowed dramatically.

c. Promoting the General Education Program

Changes to be made to assure that students, faculty, and advisors are informed about the program. We hope to increase their understanding and interest, and to increase student retention.

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Annex–1: Fall 2021 Assessment Analysis and Results

Maria Ballester

1. Introduction

The General Education Task Force is responsible for assessing the Gen Ed learning outcomes at the course level. NSU has identified ten student learning outcomes for its General Education program. During the Fall 2021, our goal was to measure the performance of students in each of the Gen Ed learning outcomes though a series of preestablished assessment rubrics. Additionally, we wanted to determine if the recent pandemic period had any effect on our students' performance. The assessment rubrics were divided into measurable objectives written for each of the 5 domains and their results were evaluated against two per-established benchmarks: a *Learning Outcome Proficiency Target* (LOPT) of 70% and an *Average Individual Proficiency Threshold* (AIPT) of 2.5 points out of 4. This means that we were expecting at least 70% of our students to have an average individual proficiency of 2.5 points or higher.

During this assessment round, participating faculty assessed

- 803 students. The largest number of students ever assessed at NSU in a single process.
- 5 domains, 17 courses, divided into 53 sections. That is 25% to 30% of the available sections for each chosen course.
- 23 artifacts, divided into 80 items. Selected/created by faculty of each domain and standardized for each course.

Overall, the *learning outcome proficiency* (LOP) was 74%, with an *average individual proficiency* (AIP) of 2.93 points. Individually, the domains fared very well, as can see on Table 1, thus we can confidently say that our goal for the Fall 2021 assessment was met.

Domain	Students	Learning Outcome Proficiency	Individual Proficiency	Courses	Section	Artifacts	Items
Arts and Humanities	56	56%	2.60	3	3	6	12
Mathematics	270	68%	2.88	4	20	5	22
Sciences	293	88%	3.28	4	17	5	22
Social and Behavioral Sciences	161	93%	3.23	5	8	5	18
Written Composition	23	64%	2.64	1	5	2	6
Overall Results	803	74%	2.93	17	53	23	80

Table 14. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains.

Semester	Art and Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition	AIP	# Students
2014 Fall	2.86	2.77	3.13	2.88	2.87	2.90	386
2015 Winter	2.89	2.25	3.02	2.56	3.16	2.78	180
2015 Fall	2.88	2.49	3.21	2.68	3.30	2.91	279
2016 Winter	N/A	2.17	3.03	N/A	N/A	2.60	102
2016 Fall	2.93	2.06	3.18	N/A	2.48	2.66	195
2017 Winter	2.70	2.83	3.17	2.65	2.71	2.81	242
2017 Fall	2.76	3.27	2.95	2.88	2.85	2.94	220
2018 Winter	2.77	2.43	2.56	3.20	2.88	2.77	275
2021 Fall	2.60	2.88	3.28	3.23	2.64	2.93	803

Table 15. Summary of the results of each domain from the Fall 2014 until Fall 2021.

Comparing to previous assessment periods, results are very promising, given that students were coming back to in-person attendance after a long pandemic period (Table 2):

- We assessed close to 20% of the total amount of undergraduate students (803). More than 2.5 times than ever before.

- Our AIP of 2.93 improved by almost 6% our previous assessment result and is the second highest.
- All domains did relatively well. For example, Science and Mathematics had an increase in AIP of 28% and 19% respectively.

There were two additional questions we wanted to answer with the data collected. First, we wanted to see if there was a difference between results students achieve in daytime, evening, or online courses. Second, we wanted to see if students taking honor courses scored significantly better than regular courses' students. To answer these questions, we used a two-sample Welch's approximate t-test to check the null hypothesis that the difference between the means is zero. We calculated the p-value to determine if difference between the two means is statistically significant ($p < 0.05$) or not ($p > 0.05$). We also determine the percentage difference between the means.

Domain	Daytime	Evening	% Mean diff	Statistical differenc e	Daytime	Online	% Mean diff	Statistical differenc e	Evening	Online	% Mean diff	Statistical differenc e
Arts and Humanities	2.75	2.09	27%	YES								
Mathematics	2.11	2.88	–31%	YES	2.11	2.98	–34%	YES	2.88	2.98	–4%	NO
Science	3.39	3.04	11%	YES	3.39	3.89	–14%	YES	3.04	3.89	–25%	YES
Social and Behavioral Sciences	3.29	3.37	–2%	NO	3.29	3.10	6%	NO	3.37	3.10	8%	NO
Written Composition	2.86	2.73	5%	NO	2.86	2.36	19%	YES	2.73	2.36	15%	NO

Table 16. The differences between the means of daytime, evening, or online courses.

Table 3 shows the differences between the means of daytime, evening, or online courses. The results were somewhat unexpected but not all surprising. Between daytime and evening students, there is a statistically significant difference in the *Arts and Humanities*, *Mathematics* and *Science* domains, mostly in favor of the daytime students. However, in *Mathematics* there is an unexpected difference in favor of the evening students. *Social and Behavioral Sciences* and *Written Composition* students did not have a statistically significant difference, and thus we can conclude that both groups performed equally well. Between daytime and online students, except for *Social and Behavioral Sciences* there was a statistically significant difference mostly in favor of the online students. Finally, we did not find any statistically significant difference between evening and online students, except for the *Science* domain for which there was a percentage mean difference of 25% in favor of online courses.

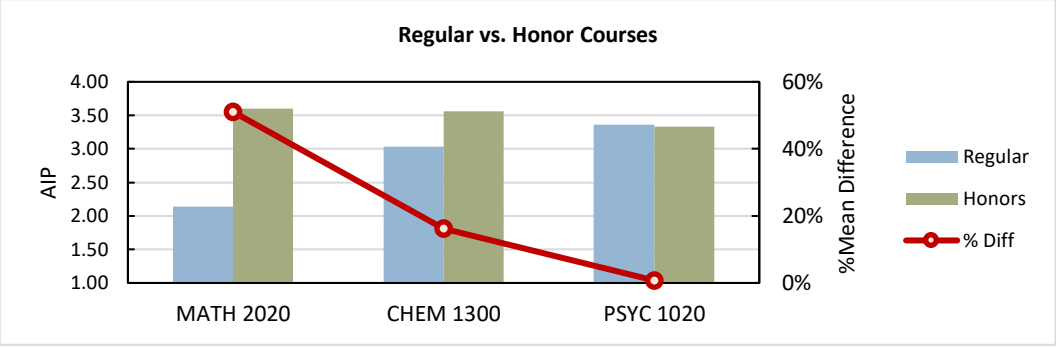


Figure 3. The differences between the means of students taking regular courses to those taking honor courses.

The difference between the AIPs for students taking regular courses and honor courses is most markedly seen in MATH 2020 (Fig. 1) and CHEM1300, as expected. For PSYC1020, there were no statistically significant difference between the two groups.

2 Procedure

a. Courses Assessed

For this assessment period, the General Education Task Force selected a set of courses per domain that not only met the Gen Ed learning outcomes, but to also included a large sample of students, to represent as much as possible the typical NSU student (Table 4). The number of sections of a particular course depended on the number of students enrolled in it. Gen Ed task force suggested a number between 25% and 35% of the course's student population to be assessed.

Domain	Courses Assessed
Arts and Humanities	HIST 1050, LITR 2010, THEA 1000
Mathematics	MATH 1040, MATH 1200, and MATH 2020 (and MATH 2020H).
Sciences	BIOL 1040, BIOL 1500, and CHEM 1300 (and CHEM 1300H).
Social and Behavioral Sciences	ANTH 1020, INST 1500, PSYC 1020 (and PSYC 1020H), and SOCL 1020
Written Composition	COMP 2000

Table 17. Courses assessed per domain.

b. Artifacts

We use the term artifact to name direct measures (assignments), divided into specific tasks/questions, referred as items. For example, a final exam is considered an artifact, while a question in it is an item. A midterm paper or a final project are also considered artifacts. The artifacts used during this assessment were course embedded and designed/chosen to measure the Gen Ed learning outcomes though a series of assessment rubrics, divided into measurable objectives. Courses were allowed to use multiple measures to assess any individual Gen Ed learning outcome. However, no single item could be used to assess more than one rubric objective. Rubric's objectives were scored on a 1-to-4-point scale: *Ineffective* (1), *Adequate* (2), *Effective* (3), and *Outstanding* (4).

c. Process

Faculty had an important role in deciding which artifact(s) to use. Faculty teaching different sections of the same course met and decided which assessment items to use. For items such as multiple-choice questions, a specific rubric was developed for each of them. Faculty also had the freedom to embed these questions in the artifact of their choice.

d. Analysis and Conclusions

The proficiency for each measure was established by the following two benchmarks:

- Average Individual Proficiency Threshold (AIPT): score which determines if an individual student has met the outcome. Our target score is 2.5 out of 4 points. This means a student's performance (*average individual proficiency* or AIP) must be between *adequate* and *effective*, or above, to be considered successful.
- Learning Outcomes Proficiency Target (LOPT): percentage of students expected to meet or exceed the average individual proficiency target (*learning outcomes proficiency* or LOP) that is at, or exceeds, 70%, i.e., our target is to have 70% of our students at or above an average individual proficiency of 2.5 points.

Faculty completed the Excel report file which included Individual students' scores, data analysis, and brief study of the course's learning outcomes alignment to those of Gen Ed. Faculty also included a brief conclusion based on their results and any observation relevant to the process. We consider this feedback an essential part of the Gen Ed program assessment, as it will helps us improve the process and ensure that our methods are working.

3 Domains Analysis and Results

a. Arts and Humanities

Courses Assessed: LITR-2010, HIST-1050, and THEA-1000

Departments involved: Department of Humanities and Politics and Department of Communication, Media, and the Arts

- 56 students were assessed using 6 artifacts, divided into 12 items. Overall, student's response was regular.
  - *Objectives A*: 39 students (70%) scored at the LOPT with an AIP score of 2.69 points.
  - *Objective B*: 32 students (57%) were above the 2.5 threshold, with an AIP of 2.53 points.
  - Overall, 32 students (57%) exceeded the percentage of success with an AIP of 2.61 ponts.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	6	A	2.69	39	70%	At or above LOPT	Between Effective and Outstanding
# Items	12	B	2.53	32	57%	Below LOPT	Between Adequate and Effective
# Students	56	Overall	2.61	32	57%	Below LOPT	Between Adequate and Effective

Table 18. Overall analysis for the *Arts and Humanities* domain.

This domain has participated in 8 assessments rounds (Table 6). In this assessment round, we can see that:

- 56 students assessed, 75% more than our two previous assessments for this domain.
- The overall AIP of 2.60 fell short of expectations. However, all objectives had an AIP above the 2.5 threshold.
- Although, the overall LOP was below our expected target, student's AIP were at the *effective* and *outstanding* levels.

	Objective A	Objective B	AIP	#Students
2014 Fall	2.88	2.84	2.86	59
2015 Winter	2.91	2.87	2.89	45
2015 Fall	2.97	2.80	2.88	87
2016 Fall	3.06	2.80	2.93	27
2017 Winter	2.68	2.72	2.70	46
2017 Fall	2.78	2.74	2.76	33
2018 Winter	2.69	2.85	2.77	32
2021 Fall	2.68	2.52	2.60	56

Table 19. Summary of the results of the *Arts and Humanities* domain from the Fall 2014 until Fall 2021.

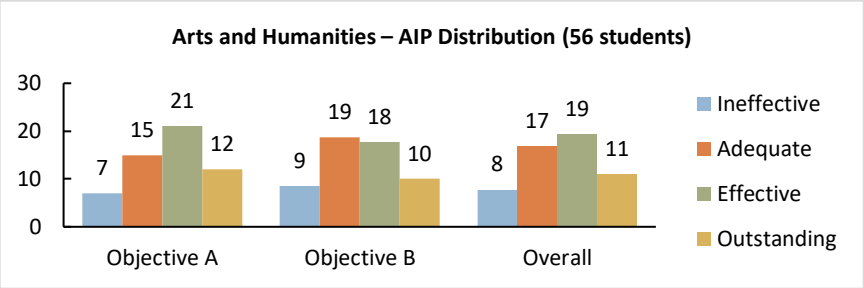


Figure 4. Total distribution of AIP scores per objective. There is a significant number of students at the *effective* and *outstanding* levels.

THEA 1000 – The Theatre Arts

Section (s)	# Students	Instructor
E01	12	Alexandra Hernandez
1 Section	12 Students	

Table 20. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Direct	Response paper
2.1	A	Direct	Response paper
1.2	B	Direct	Response paper
2.2	B	Direct	Response paper

Table 21. Artifacts for THEA-1000. Two papers were used to assess the 2 rubric objectives.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	2	5	6	0	2.3
2.1	A	1	5	7	0	2.5
1.2	B	7	5	1	0	1.5
2.2	B	3	6	4	0	2.1

Table 22. Results for each rubric objective. The Table shows the number of students scoring 1, 2, 3, or 4 points. The AIP for each item/objective is also given.

Data Analysis

The students had a weak outcome on all artifacts' items:

- Only item 2.1 was at the AIPT of 2.5 points. All other items were below this value.
- Overall (Table 10), the averages well below of the LOPT with an averaged a score of 2.1 points.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	2.4	7	58%	Below LOPT	Between Adequate and Effective
# Items	4	B	1.8	0	0%	Below LOPT	Ineffective
# Students	12	Overall	2.1	0	0%	Below LOPT	Ineffective

Table 23. Overall analysis for THEA-1000.

Conclusions

- Most of the students did relatively well in the first artifact, but their scores dropped significantly in their second one.
- In terms of *utilizing basic terminology to the discipline*, students scored below what was expected.
- For *applying different techniques to the human condition*, students scored a better overall average, however faculty thinks that the assignment needs to be tailored to more effectively to assess the objectives.

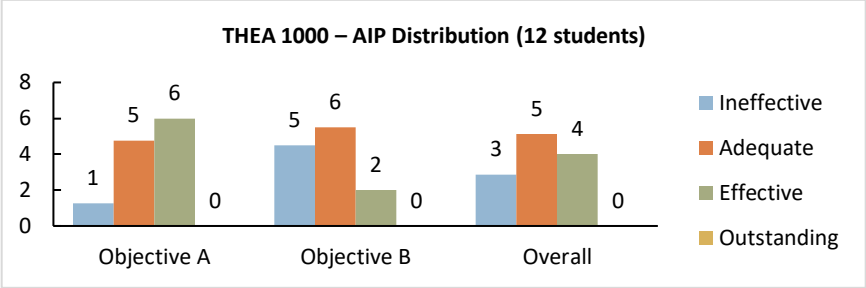


Figure 5. AIP distribution scores per objective. The number of students is shown on top of each bar.

HIST 1050 – The United States: From Settlement to Superpower

Section (s)	# Students	Instructor
D02	24	Kathleen Doll
1 Section	24 Students	

Table 24. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Paper	Students compared a digital history project (two projects were possible choices) to class discussion and textbook reading, demonstrating an understanding of key terms from various moments in history.
2.1	A	Paper	Students analyzed primary sources from a specific period in time using key terms to identify the sources and answer the assignment question.
1.2	B	Paper	Students compared digital approaches to textual approaches and how each engages with understanding history.
2.2	B	Paper	Students compared how two different world leaders engaged with ideas about peace and humanity.

Table 25. Artifacts for HIST-1050. Papers were used to assess objectives A and B.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	1	6	8	10	3.1
2.1	A	1	3	11	9	3.1
1.2	B	1	6	9	8	3.0
2.2	B	2	6	11	6	2.8

Table 26. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- All 2 objectives had a percentage of success above the goal of 70%.
- The highest success occurred with objective A, as both artifacts resulted in an average of 3.1 points and 22 (92%) students were between *effective* and *outstanding*.
- Objective B was also predominantly a success, but students had more trouble with it in artifact 2. Objective B had an LOP of 88% (21 students).
- Overall, 22 (92%) students were at or above LOPT with an averaged a score of 3.4 points.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	3.1	22	92%	At or above LOPT	Between Effective and Outstanding
# Items	4	B	2.9	21	88%	At or above LOPT	Between Effective and Outstanding
# Students	24	Overall	3.0	22	92%	At or above LOPT	Between Effective and Outstanding

Table 27. Overall analysis for HIST-1050.

Conclusions

- Overall students achieved the learning outcomes goals for the course. Students did well in understanding how their classwork relates to larger issues of the study of history and humanities.
- Artifact 1, asking them to clearly compare two different approaches, helped them make clear comparisons. In general, they were able to understand how different approaches can have valuable contributions to the study of history.
- Artifact 2 asked them to compare items more closely from a specific moment in history, which they did well. However, they could have expanded a bit beyond the narrow chronology of the two items examined. Faculty believes that some students found it challenging to understand how these issues relate to larger questions about humanity beyond the narrow topic of the text, affecting their scores for objective B.
- Future assessments might continue to ask how students can relate what they study not just to a historic moment but to larger questions about knowledge and humanity.

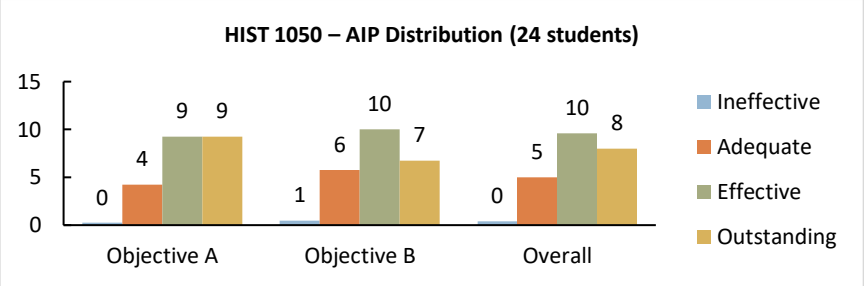


Figure 6. AIP distribution scores per objective. The number of students is shown on top of each bar.

LITR 2010 – British Literature I

Section (s)	# Students	Instructor
D01	20	Aileen Farrar
1 Section	20 Students	

Table 28. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Short Analysis Paper	Semester's first three-page argumentative paper with required appropriate secondary source material, to analyze a course text applying course content and methods. Twenty students.
2.1	A	Short Analysis Paper	Semester's first three-page argumentative paper with required appropriate secondary source material, to analyze a course text applying course content and methods. Twenty students.

Artifact	Objective	Assessment type	Comment
1.2	B	Short Analysis Paper	Semester's second three-page argumentative paper with required appropriate secondary source material, to analyze a course text applying course content and methods. Twenty students.
2.2	B	Short Analysis Paper	Semester's second three-page argumentative paper with required appropriate secondary source material, to analyze a course text applying course content and methods. Twenty students.

Table 29. Artifacts for LITR-2010. A short analysis paper was used to assess objectives A and B.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	5	6	6	3	2.35
2.1	A	6	6	6	3	2.20
1.2	B	2	9	6	3	2.50
2.2	B	5	6	6	4	2.35

Table 30. Results for each rubric objective. The Table shows the number of students per score points and the AIP score per objective/item.

Data Analysis

- Overall, objectives A and B had a percentage of success below the goal of 70%.
- On both objectives 9 (45%) students were between *ineffective and Adequate*, below the LOPT.
- All artifact items were close to the AIPT, in particular item 1.2 which had an AIP of 2.5 points.
- Overall, students averaged a score of 2.4 points, and 9 (45%) of them scored below the LOPT.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	2.3	9	45%	Below LOPT	Between ineffective and Adequate
# Items	4	B	2.4	9	45%	Below LOPT	Between ineffective and Adequate
# Students	20	Overall	2.4	9	45%	Below LOPT	Between ineffective and Adequate

Table 31. Overall analysis for LITR-2010.

Conclusions

- From the first to second artifacts, there is marked and consistent improvement in demonstration of skills. Whereas the first artifact suggests ineffective and adequate achievement, the second artifact exhibits a shift towards adequate achievement with a greater number of scores indicating effective and outstanding achievement of objectives. This consistent improvement suggests that the course is steadily covering content and methods outlined in the course objectives as the course proceeds.

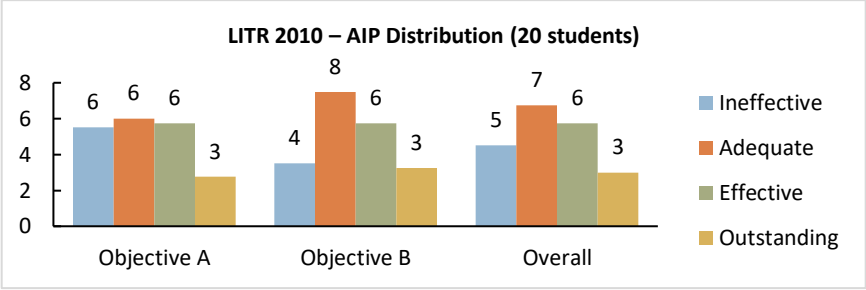


Figure 7. AIP distribution scores per objective. The number of students is shown on top of each bar.

- Assessment was completed using the first and second papers of the course out of three major papers, and thus demonstrate coverage of content and methods from the first half of the semester. Allowing adequate time in the assessment process to both collect, evaluate, and analyze artifacts from the end of the course would provide a more accurate picture of objectives achieved in the course.

b. Mathematics

Courses Assessed: MATH-1040, MATH-1200, MATH-2020, and MATH-2020H.

Departments involved: Department of Mathematics

- In a total of 14 sections, 293 students were assessed using 5 artifacts, divided into 22 items.
- Short essays and multiple-choice questions were embedded in different assignments as part of the required course assignments.
- The students assessed performed lower than expected. Faculty from this domain believe of some of the poor results were a consequence of NSU not requiring SAT and ACT results and any type of placement tests for mathematics. Faculty suggest requiring all new students to take a placement test as a possible solution. This will help us place students at the correct mathematical level.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	5	A	3.18	100	81%	At or above LOPT	Between Effective and Outstanding
# Items	22	B	2.76	56	60%	Below LOPT	Between Adequate and Effective
# Students	270	C	2.97	100	75%	At or above LOPT	Between Effective and Outstanding
		D	2.40	90	51%	Below LOPT	Between Adequate and Effective
		E	3.38	73	75%	At or above LOPT	Between Effective and Outstanding
		Overall	2.88	173	68%	Below LOPT	Between Adequate and Effective

Table 32. Overall analysis for the *Mathematics* domain.

- Overall, student response on this domain was strong in objectives A, C and E (Table 19).
- In objective A, 100 students (81%) were between *effective* and *outstanding*. The average score for this objective was 3.18 points.
- Students averaged a score of 2.76 for objective B with a LOP of 60% (56 students) between *adequate and effective*.
- An average score of 2.97 was found for Objective C, with 75% (100 students) above the of success, which sets it between *adequate* and *effective*.
- Objective's D values were 2.40 for the average score and 51% (90 students) of LOP.
- Finally, 68% (73) of students surpassed the LOPT with an AIP score of 3.38 points for objective E.
- Overall, 173 students (68%) had a percentage of success between *adequate and effective*. The students had an average score of 2.88. Clearly, objectives B and D need improvement.
- On average, most students scored at the outstanding level (Fig. 6). However, in objectives B and D the number of students at the ineffective is high which affects their overall AIP.

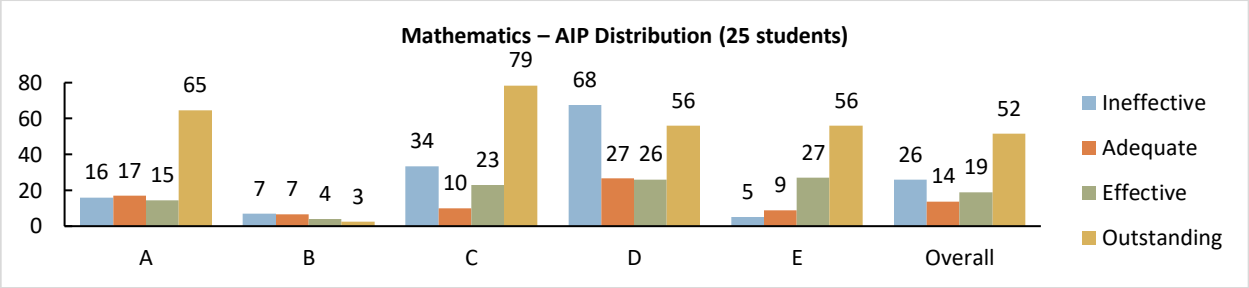


Figure 8. AIP distribution scores per objective. The number of students is shown on top of each bar.

Table 20 contains a summary of the *Mathematics* domain from Fall 2014 until our last assessment. During this time, 9 assessments rounds were performed. For this assessment round:

- We assessed 270 students much more than ever before. This is 500% more than all seven previous assessments, and almost 3 times as much as the previous highest number.
- Our overall average IP of 2.87 points is on par of previous high score values.
- All objectives consistently had an average IP above the 2.5 points threshold.

	Objective A	Objective B	Objective C	Objective D	Objective E	Average IP	#Students
2014 Fall	2.33	3.05	2.94	2.58	2.94	2.77	107
2015 Winter	1.61	0.00	3.00	1.56	2.83	2.25	18
2015 Fall	2.12	0.00	2.90	2.07	2.88	2.49	38
2016 Winter	2.56	0.00	2.33	1.57	2.21	2.17	35
2016 Fall	2.00	0.00	1.78	2.44	2.00	2.06	37
2017 Winter	2.32	0.00	3.07	2.44	3.50	2.83	27
2017 Fall	3.73	0.00	3.68	2.52	3.13	3.27	45
2018 Winter	2.55	0.00	2.73	1.58	2.87	2.43	34
2021 Fall	3.14	2.68	3.01	2.40	3.38	2.87	270

Table 33. Summary of the results of the *Mathematics* domain from the Fall 2014 until Fall 2021.

MATH 1040 – Algebra for College Students

Section (s)	# Students	Instructor
D01	23	Eric Samansky
E01	20	Abushieba Ibrahim
L02, L07	45	Iuliana Stanculescu
L04	24	Eric Samansky
5 Sections	112 Students	

Table 34. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Midterm #3, Final Exam #1, Exam 1, Midterm #4, Exam 1	Short Answer. Subtracting Rational Functions (Fractions), Multiple Choice+ Show work. Adding Rational Functions (Fractions), Short answer. Adding/Subtracting Fractions, Short Answer. Subtracting Rational Functions (Fractions), Short answer. Adding/Subtracting Fractions
1.2	A	Midterm #6, Exam1#8, Exam1, Midterm #7, Exam1	Short Answer. Solving a Rational Equation, Short answer. Solving Rational Equation, Short answer. Solving Rational Equations, Short Answer. Solving a Rational Equation, Short answer. Solving Rational Equations
3.1	C	Final #18, Final Exam #23, Exam 4, Final #13, Exam 4	Short Answer. Solving an Exponential Equation, Short answer. Solving an Exponential Equation, Short answer. Solving Equations with exponentials, Short Answer. Solving an Exponential Equation, Short answer. Solving Equations with exponentials
3.2	C	Final #19, Final Exam #16, Exam 4, Final #15, Exam 4	Short Answer. Solving a Logarithmic Equation, Multiple Choice+ Show work. Solving a Logarithmic Equation, Short answer. Solving Equations with logarithms, Short Answer. Solving a Logarithmic Equation, Short answer. Solving Equations with logarithms
4.1	D	Midterm #7, Final Exam #5, Exam 1, Midterm #8, Exam 1	Short Answer. Word problem about working together/apart, Multiple Choice+ Show work. Word Problem about working together/apart, short answer. Word problem, Short Answer. Word Problem about working together/apart, short answer Word problem
4.2	D	Final #12, Exam 3, Final #7, Exam 3	Short Answer. Word problem about optimization, short answer. Word problem, Short Answer. Word Problem about optimization, short answer. Word problem
5.1	E	Final Exam #4, Exam 3, Final #8, Exam 3	Multiple Choice+ Show work. Graph Logarithmic Equation, Short answer. Graphs of quadratics, Short Answer. Inputting values based on equation/graph, Graphs of quadratics

Table 35. Artifacts for MATH-1040. Various artifacts were used to assess 4 rubric objectives (A, C, D, and E).

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	15	16	12	69	3.21
1.2	A	17	18	17	60	3.07

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
3.1	C	7	6	18	75	3.52
3.2	C	16	11	23	56	3.12
4.1	D	40	13	16	43	2.55
4.2	D	29	11	15	35	2.62
5.1	E	5	8	25	49	3.36

Table 36. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	7	A	3.1	90	80%	At or above LOPT	Between Effective and Outstanding
# Items	20	C	3.3	93	88%	At or above LOPT	Between Effective and Outstanding
# Students	112	D	2.7	72	65%	Below LOPT	Between Adequate and Effective
		E	3.4	64	74%	At or above LOPT	Between Adequate and Effective
		Overall	3.1	85	76%	At or above LOPT	Between Effective and Outstanding

Table 37. Overall analysis for MATH-1040.

- The standard of success was met for 3 of the objectives, but not for objective D. This can probably be attributed partly to the switch from BlendFlex to in-person instruction. But mostly, the results can probably be attributed to the fact that many students are being placed in Math 1040 based entirely on their GPA (3.3 or higher) since NSU has stopped requiring SAT and ACT results and have not required any type of placement test for mathematics.
- The overall grades are in accord with expectations for a MATH 1040 class. Generally, the results in this course seem less than expect it. In some questions students were more successful than others.
- For the online class, students take 4-chapter tests. The results seem overwhelmingly positive; this may be due to the level of difficulty of the problems assessed or format of the class - online. Students were more successful in the online course compared to the in-person course, probably because of learning digitally due to the pandemic and due to the restrictions in proctoring for online courses.
- Overall, these results seem very successful in terms of the desired targets. The weakest outcomes were for objective D with a LOP of 65% (72 students) and an AIP of 2.7. For the other 3 objectives, the percentage of success was above the LOPT of 70%. On objective A, 80% of students (90 students) were between *effective* and *outstanding*, 88% (93 students) for objective C, and 74% (64 students) for objective E. Students averaged an AIP score of 3.1 overall.

Conclusions

- The assessment process seems adequate. Hopefully more students will meet the standard of success once we more effectively place them in the correct math class in terms of their ability.
- Faculty suggest considering some change for the coming courses, such as assigning the videos in MML as part of the homework.
- The areas of strength are in solving mathematical equations. Some weakness can be detected in solving applications and word problems.

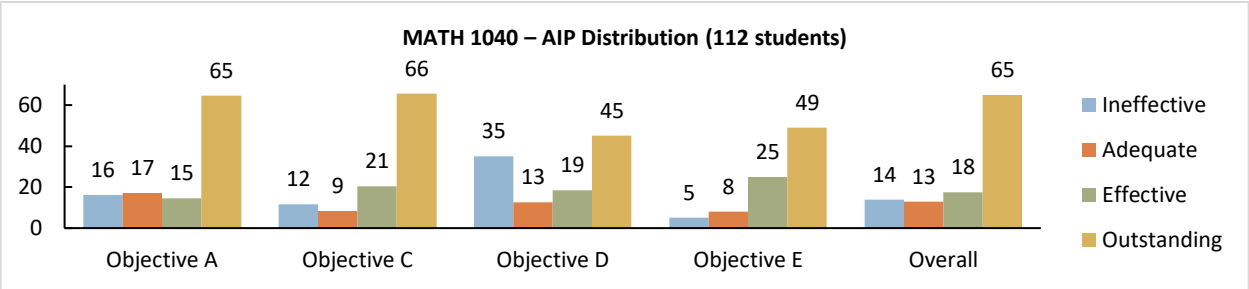


Figure 9. AIP distribution of scores per objective. The number of students is shown on top of each bar.

- The overall data seems acceptable, and the achievements seem in line with the learning outcomes.
- One faculty member was able to include one additional artifact in the online class as compared to the in-person class, due to the online format and the student's ability to view and interact with the content electronically.

MATH 1200 Precalculus Algebra

Section (s)	# Students	Instructor
D02, D03	38	Edmond W. H. Lee
E01	12	Olukayode Dare
L03	16	Ricardo Carrera, Ph.D.
8 Sections	149 Students	

Table 38. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
3.1	C	Quiz 12 #1, 8.6.15	Short answer. Solving an Exponential Equation
3.2	C	Final #12b, 8.6.53	Short answer. Solving a Logarithmic Equation
4.1	D	Midterm #8, 8.1.27	Short answer. Word problem about expressing some physical quantities as functions Short Answer. Solving applications involving compound interest
4.2	D	7.7.7	Short Answer. Solving maximum-minimum problems involving quadratic functions

Table 39. Artifacts for MATH-1200. Various artifacts were used to assess 2 rubric objectives (C and D).

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
3.1	C	18	1	5	13	2.35
3.2	C	26	2	0	13	2.00
4.1	D	32	14	9	10	1.95
4.2	D	5	1	1	5	2.50

Table 40. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- The course assessed 66 students using 8 items given in various artifacts (final exam, quiz, etc.). Overall, the course assessed two objectives, C and D.
- On objective D, 49% of students (19) were between ineffective and adequate.
- A similar result was obtained for objective D, in which 28% of students (18) were between ineffective and adequate.
- The overall average score was 2.0 points.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	5	C	2.2	19	49%	Below LOPT	Between ineffective and Adequate
# Items	8	D	2.0	18	28%	Below LOPT	Between ineffective and Adequate
# Students	66	Overall	2.0	20	30%	Below LOPT	Between ineffective and Adequate

Table 41. Overall analysis for MATH-1500.

Conclusions

- The assessment process is satisfactory and quite well rounded. However, the LOPT standard of success was not met for any of the objectives.
- All the artifact questions were from topics of the prerequisite course MATH 1040. The poor assessment results might indicate that the students did not have the prerequisite skills to take MATH 1200, even though they have the prerequisite requirement on their transcripts. The problem is made worse by NSU not requiring SAT and ACT results and any type of placement tests for mathematics. The problem could be solved by placing students at the correct level, which can be done most accurately by requiring all new students to take a placement test.

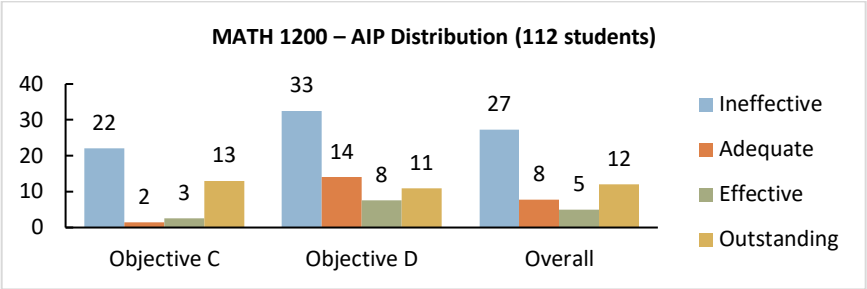


Figure 10. AIP distribution of scores per objective. The number of students is shown on top of each bar.

MATH 2020/2020H Applied Statistics

Section (s)	# Students	Instructor
D10, E01	33	Yueting Wan
L03, L10	49	Lei Cao
D01 / Honors	10	Jason Gershman
7 Sections	92 Students	

Table 42. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
2.1	B	Final Exam Midterm	This is designed for mid-term. However, it was too late when I got it. So I integrated it into the final exam. This question is testing the concepts of unlikely events. To answer the question, it requires student to understand and apply fractions and percentages, and the use of basic statistical data.
2.2	B	Final Exam Midterm	The format of this problem was very similar to a couple of exams I presented in the classroom. However, it is different than the ones in homework and chapter quizzes, which the students were more familiar with. This question is testing the concepts of random variables, probability distribution, mean and standard deviation
5.1	E	Final Exam #1	Exam Question. This question examined the basic use of statistical data in whether the Central Limit Theorem Applied or if the conditions were not met. If they were met, was the resulting distribution used correctly (z-score vs t-score.)

Table 43. Artifacts for MATH-2020. Various artifacts were used to assess 2 rubric objectives (B and E).

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
2.1	B	22	14	9	37	2.74
2.2	B	26	15	6	35	2.61
5.1	E	0	1	2	7	3.60

Table 44. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- 92 students, divided in two different groups were assessed: 82 on objective B and 10 on objective E. The LOP was 74% (68 students).
- On objective B, 47 students (57%) scored between *adequate and affective*.
    - The results were not as good as those of other problems in the final. In one section, the average of the final was 84% with a median of 89%, while the other had an average of 86% and a median was 87%.
    - In online classes items were given through *MyMathLab* (Pearson) so the work was not provided. There might be numerical calculation errors, still students appear to know how to find mean and standard deviation of a random variable.

- For objective E, 9 students (90%) scored between *effective* and *outstanding*. Only one item was used in the artifact chosen (final exam). Seven students got all 4 parts of the item correct, 2 students got 3 of the 4 parts, and 1 student got 2. Based on the data, most students understand all concepts tested by the items.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	3	B	2.7	47	57%	Below LOPT	Between Adequate and Effective
# Items	3	E	3.6	9	90%	At or above LOPT	Between Effective and Outstanding
# Students	92	Overall	2.8	68	74%	At or above LOPT	Between Adequate and Effective

Table 45. Overall analysis for MATH-2020.

Conclusions

- The format of the items used was very different than the ones in homework and chapter quizzes, composed of questions or problems from MML (*MyMathLab*/Pearson). As for the content and concepts, examples were provided in the classroom that were very similar to the items assessed. Students seemed to understand the concepts while discussing the same types of examples. However, the assessment results were not as good as those of the other problems in the same artifact. It is possible that student that understand the concepts but are not familiar with the format of the items used, could perform poorly. Faculty of the course questions the quantity of homework assignments, quizzes and tests that depend on MML, and where they could we find similar questions.

- A faculty member suggests to: 1) Embed the items in the homework assignments instead of exams. In the exams, the students should be facing the questions of familiar types since the testing times are always limited. 2) Identify four different types of items to assess each of the four objectives of the course specifically. Right now, with the comprehensiveness of the current items, it is almost impossible to make other testing problems equally comprehensive. Thus, the results may not reflect the real level of students' achievements.

- Another instructor thinks that overall, the data suggests that students can apply probability fundamentals and distributions correctly. He believes that these two items were chosen right before the Midterm in a little bit of a hurry, so they may not be the best choices for this assessment. He would like to pick item related to normal distribution and hypothesis test next time. Also, he thinks that items on a written exam are better than *MyMathLab* questions as it allows the reviewer to go through the work of students and tell if any calculation error was made.

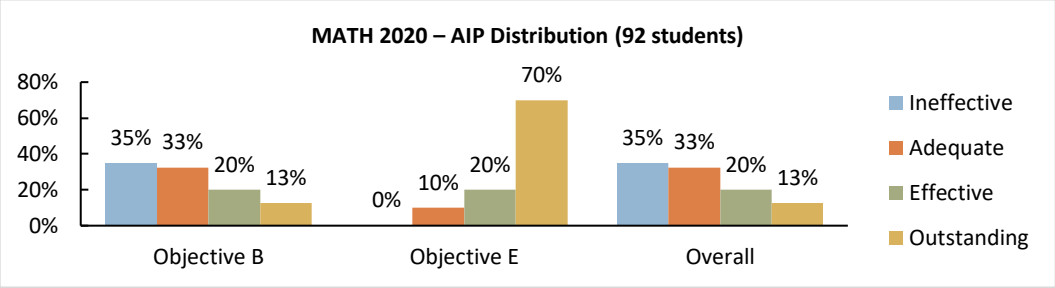


Figure 11. AIP distribution of scores per objective. The number of students is shown on top of each bar.

c. Science

Courses Assessed: BIOL-1040, BIOL-1500, CHEM-1300, and CHEM-1300H

Departments involved: Department of Biological Sciences and the Department of Chemistry and Physics

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	5	A	3.38	274	94%	At or above LOPT	Between Effective and Outstanding
# Items	22	B	3.47	267	91%	At or above LOPT	Between Effective and Outstanding
# Students	293	C	2.98	209	71%	At or above LOPT	Between Adequate and Effective
		Overall	3.28	259	88%	At or above LOPT	Between Effective and Outstanding

Table 46. Overall analysis for the Science domain.

- A total of 293 students were assessed in 17 sections spread through 2 departments.

- Students were assessed using 5 artifacts, divided into 22 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- In objective A, 274 students (94%) were between *effective* and *outstanding* with an AIP score of 3.38.
- Students had an AIP score of 3.47 for objective B. The LOP success was 91% (267) between *effective* and *outstanding*.
- The lowest AIP score was 2.98 for Objective C, with a LOP of 71%, which sets it between *adequate* and *effective*.
- Overall, 259 students (88%) exceeded the LOPT with an AIP score of 3.28 points. Faculty members were generally pleased with student performance on this assessment. However, objective C needs improvement.
- Figure 10 shows how students overwhelmingly scored at the outstanding level for all objectives.

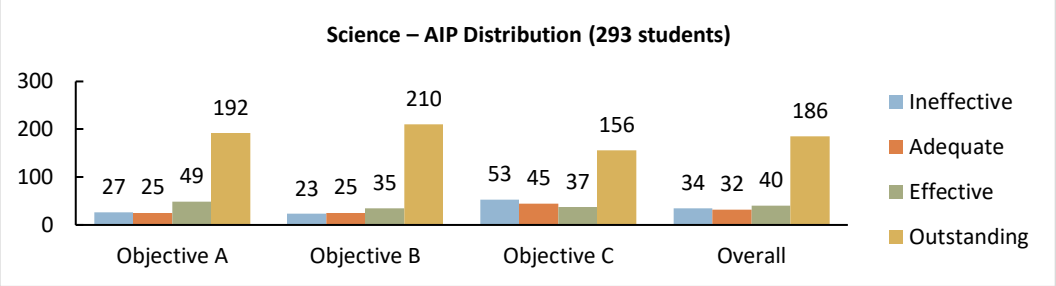


Figure 12. AIP distribution of scores per objective. The number of students is shown on top of each bar.

Table 34 contains a summary of the *Science* domain from Fall 2014 until our last assessment. During this time, 9 assessments rounds were performed. In this assessment round:

- We assessed 293 students, more than any other previous assessment period.
- Our overall average IP of 3.28 is the highest in *Science* so far.
- All objectives consistently were well above the average IP of the 2.5 threshold.

	Objective A	Objective B	Objective C	All	#Students
2014 Fall	3.39	3.08	2.91	3.13	94
2015 Winter	3.06	2.82	3.17	3.02	48
2015 Fall	3.16	3.15	3.30	3.21	111
2016 Winter	3.28	2.82	2.98	3.03	67
2016 Fall	3.19	3.21	3.13	3.18	89
2017 Winter	3.14	2.99	3.39	3.17	73
2017 Fall	2.93	3.10	2.81	2.95	62
2018 Winter	2.56	2.55	2.58	2.56	78
2021 Fall	3.38	3.47	2.98	3.28	293

Table 47. Summary of the results of the Science domain from the Fall 2014 until Fall 2021.

BIOL 1040 – Environmental Studies

Section (s)	# Students	Instructor
E01	20	Shawn McQuaid
L01	24	Adriana Alegre
2 Sections	44 Students	

Table 48. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Multiple Choice	
1.2	A	Multiple Choice	
1.3	B	Multiple Choice	

Artifact	Objective	Assessment type	Comment
1.4	B	Multiple Choice	
1.5	C	Multiple Choice	
1.6	C	Multiple Choice	

Table 49. Artifact for BIOL-1040. The Final exam used 6 items to assess the 3 rubric objectives.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	1	2	0	41	3.8
1.2	A	5	0	1	38	3.6
1.3	B	7	0	1	36	3.5
1.4	B	0	3	5	36	3.8
1.5	C	0	2	5	37	3.8
1.6	C	0	2	1	41	3.9

Table 50. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- The weakest outcomes were for items 1.3, mapped to objective B, followed by item 1.2, mapped for objective A.
- For the 3 objectives, the LOP was well above the goal of 70%. On objective A, 98% of students (43) were between *effective* and *outstanding*, for objective B, 93% (41 students) and for objective C 100% (all students).
- Students averaged a score of 3.7 overall with a 100% LOP.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	1	A	3.7	43	98%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	3.6	41	93%	At or above LOPT	Between Effective and Outstanding
# Students	44	C	3.8	44	100%	At or above LOPT	Outstanding
		Overall	3.7	44	100%	At or above LOPT	Outstanding

Table 51. Overall analysis for BIOL-1040.

Conclusions

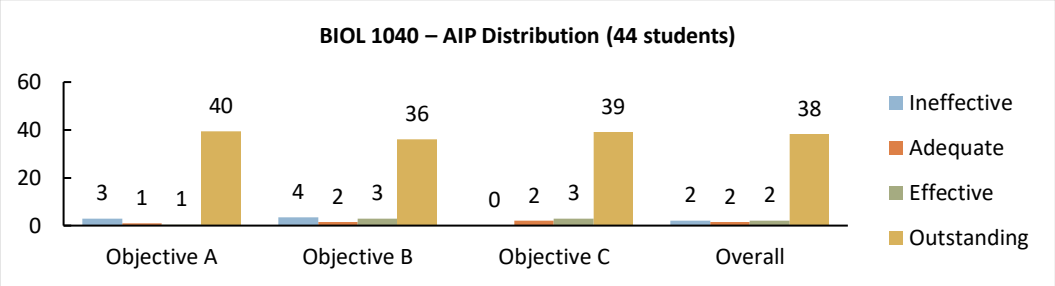


Figure 13. AIP distribution of scores per objective. The number of students is shown on top of each bar.

- Most of the students in BIOL-1040 were able to answer the questions correctly showing outstanding mastery of the subject material according to each of the science learning outcomes.
- Overall, the students performed well with outstanding results on each artifact. According to Fig. 11, almost all of them scored at the outstanding level.

BIOL 1500 Biology I with Lab

Section (s)	# Students	Instructor
E01, E05	33	Adriana Alegre
D01, D02, D03	58	Andrew Ozga
D01, D02, D03	58	Andrew Ozga
8 Sections	149 Students	

Table 52. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Multiple Choice	Question 30 on Final Exam
1.2	A	Multiple Choice	Question 31 on Final Exam
1.3	B	Multiple Choice	Question 10 on Final Exam
1.4	B	Multiple Choice	Question 11 on Final Exam
1.5	C	Multiple Choice	Question 41 on Final Exam
2.1	C	Lab Report	Hypothesis of Lab Report

Table 53. Artifacts for BIOL-1500. The Final exam assessed objectives A, B, and C using 5 items, while a lab report was used to assess objective C using 1 item.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	19	13	4	113	3.4
1.2	A	11	10	30	98	3.4
1.3	B	15	20	17	97	3.3
1.4	B	3	3	9	134	3.8
1.5	C	24	28	3	94	3.1
2.1	C	22	13	38	75	3.1

Table 54. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	3.4	140	94%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	3.6	142	95%	At or above LOPT	Between Effective and Outstanding
# Students	149	C	3.1	109	73%	At or above LOPT	Between Effective and Outstanding
		Overall	3.4	141	95%	At or above LOPT	Between Effective and Outstanding

Table 55. Overall analysis for BIOL-1500.

- This assessment included 5 items from the final exam and 1 item on the effectiveness of a hypothesis statement within a lab report.
- Item 1.5 asked students to examine a line graph and to interpret its results. This item had the lowest average score, suggesting that students have a difficult time extracting information from visually represented data.
- Overall, all 3 objectives had a percentage of success above the goal of 70%. The AIP was 3.4 with a LOP of 95% (141 students).
    - On objective A, 94% of students (140) were between *effective* and *outstanding*.
    - Objective B had an LOP of 95% (142 students).
    - Although objective C had a 73% success, it was significantly less than the other two objectives, suggesting that students have difficulty analyzing data or extracting information from it.

Conclusions

- Overall, the standard of success (LOPT) was met for each learning outcome assessed. Students had a tougher time this semester since it is the first time many of them have been back and taking exams in person post-covid. The stress and anxiety of in class test taking was evident. However, faculty is pleased at their performance despite those challenges.
- Students performed very well with most of them scoring at the *outstanding* level on each objective (Fig. 12).
- The artifacts used for the assessment covered a nice range of course material and the addition of the essay/hypothesis driven assessment (2.1) was an excellent supplementary analysis to include. The design and implementation of the artifacts facilitated the assessment for all the faculty involved in the process. Faculty recommends using the same artifact for future assessment rounds, as they accurately depict student learning.

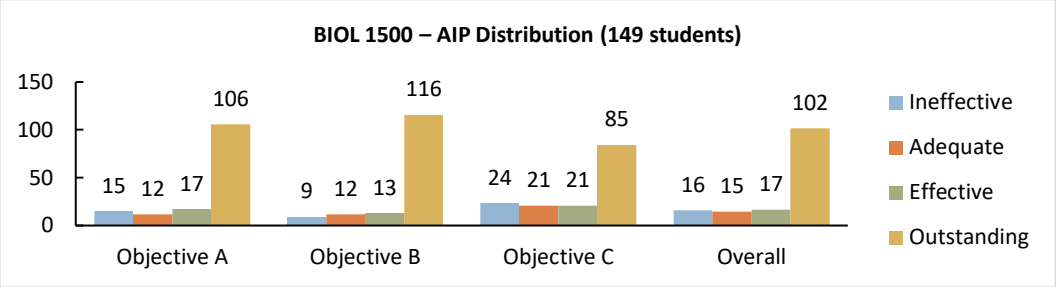


Figure 14. AIP distribution of scores per objective. The number of students is shown on top of each bar.

CHEM 1300/1300H General Chemistry I with Lab/Honors

Section (s)	# Students	Instructor
D16, D17	31	David Carnevale
E03, E04, E05	36	Manuel Constantino
D01, D02 / Honors	33	Dimitri Giarikos
7 Sections	100 Students	

Table 56. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	ACS Final Exam	Isotopes
1.2	A	ACS Final Exam	chemical formula
1.3	A	ACS Final Exam	ionic radius
1.4	A	ACS Final Exam	burette reading
1.5	B	ACS Final Exam	balancing equation
1.6	B	ACS Final Exam	gas graph interpretation
1.7	B	ACS Final Exam	calculating heat of reaction
1.8	B	ACS Final Exam	molecular geometry/VSEPR
2.1	C	Lab Report	Empirical Formula Lab Hypothesis
2.2	C	Lab Report	Molar Mass Lab Hypothesis

Table 57. Artifacts for Chem-1300. The Final exam was used to assess objectives A and B using 8 items. Additionally, a second artifact (2 items) was used to assess objective C.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	6	11	27	56	3.3
1.2	A	5	20	21	54	3.2
1.3	A	10	13	34	43	3.1
1.4	A	14	7	44	34	3.0
1.5	B	13	17	12	58	3.2
1.6	B	1	3	33	63	3.6
1.7	B	14	19	12	53	3.0
1.8	B	11	10	18	60	3.3
2.1	C	20	21	17	35	2.5
2.2	C	29	24	10	30	2.3

Table 58. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- Students did generally well with Objectives A and B, however there is noticeable room for improvement with interpreting atomic properties and chemical reactions (items 1.2, 1.3, 1.4, and 1.5).
- Objective C shows much room for improvement. Expression of ideas and construction of logical arguments were not topics focused on lecture or lab. Most of the material given to students was quantitative in nature. Thus, scores for items 1.7, 2.1, and 2.2 were lower than expected. The LOP of 56% is significantly less than the other two objectives.

- Objectives A and B had a LOP above the goal of 70%. On objective A, 91% of students (91) were between *effective* and *outstanding* and for objective B 85%. (85 students).Overall, students averaged a score of 2.93, and 70 (74%) of them scored at or above the 2.5 points goal (*between Adequate and Effective*).

Details		Rubric	AIP	Learning Outcome Proficiency			
		Objective		# Students	% Students		
# Artifacts	2	A	3.16	91	91%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	3.25	85	85%	At or above LOPT	Between Effective and Outstanding
# Students	100	C	2.40	56	56%	Below LOPT	Between Adequate and Effective
		Overall	2.93	74	74%	At or above LOPT	Between Effective and Outstanding

Table 59. Overall analysis for CHEM-1300.

Conclusions

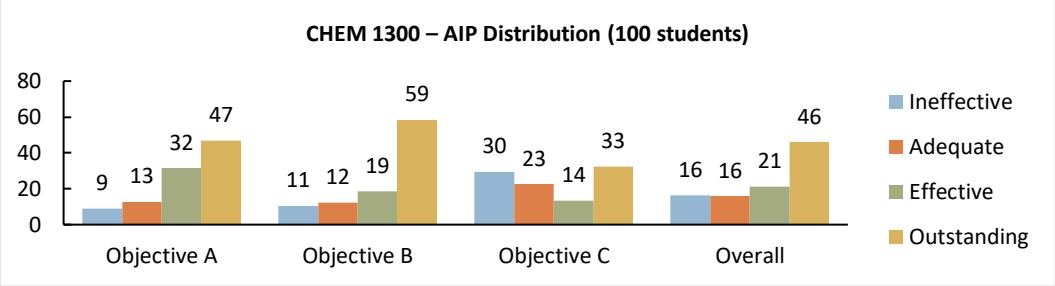


Figure 15. AIP distribution of scores per objective. The number of students is shown on top of each bar.

- Students did generally well within the quantitative aspects of the assessment, but there needs to be more emphasis on the conceptual aspects (Fig. 13).
- Objective C, in particular, showed that the students need to spend more time working on their understanding of the topics and how to convey that understanding into their writing.
- Students' success can improve by introducing broader topics or by having previous experience beyond chemistry such as logic from philosophy and English courses. Also, more emphasis should be placed in showing students in the lab how to read burettes and graduated cylinders.
- To improve as instructors, the focus can be to reduce the chapters' load, from 1-11 to 1-9, so important topics can be effectively introduced.

d. Social and Behavioral Sciences

Courses Assessed: PSYC-1020, PSYC-1020H, SOCL-1020, ANTH-1020, and INST-1500.

Departments involved: Department Psychology and Neuroscience, Department of Conflict Resolution Studies, and the Department of Humanities and Politics.

- 293 students were assessed in 17 sections using 5 artifacts, divided into 18 items.
- Multiple choice items and term papers were selected/created by faculty as part of required course assignments.
- Overall, student response on this domain was very strong (Table 47) for the 3 objectives assessed.
- In objective A, 133 students (85%) were between *effective* and *outstanding*. The AIP score for this objective was 3.00. Students had an AIP 3.27 for objective B with an LOP of 91% (140 students) between *effective* and *outstanding*. The highest AIP score was 3.46 for Objective C, with 91% of students (146) above the LOPT.
- Overall, 149 students (93%) exceeded the LOPT with an average score of 3.23. Faculty members were generally pleased with student performance on the assessment.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	5	A	3.00	133	85%	At or above LOPT	Between Effective and Outstanding
# Items	18	B	3.27	140	89%	At or above LOPT	Between Effective and Outstanding
# Students	161	C	3.46	146	91%	At or above LOPT	Between Effective and Outstanding
		Overall	3.23	149	93%	At or above LOPT	Between Effective and Outstanding

Table 60. Overall analysis for the Social and Behavioral Science domain.

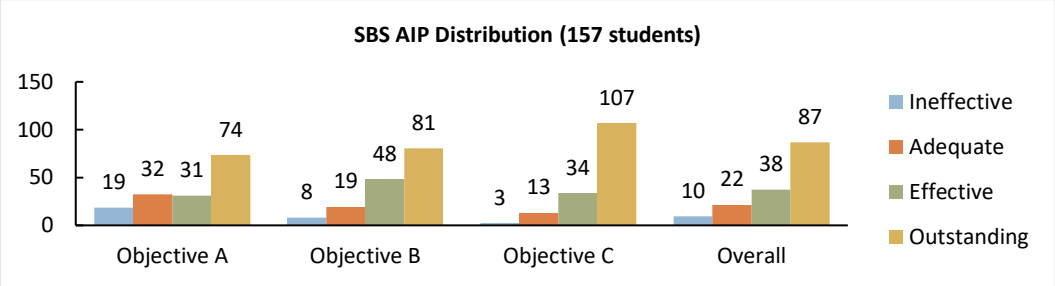


Figure 16. AIP distribution of scores per objective. The number of students is shown on top of each bar.

Table 48 contains a summary of the *Social and Behavioral Sciences* domain from Fall 2014 until our last assessment. During this time, 7 assessments rounds were performed. In this assessment round:

- We assessed 161 students, more than any other previous assessment periods.
- Our overall average IP of 3.23 is the highest in *Social and Behavioral Sciences* so far.
- All objectives consistently were well above the average IP of the 2.5 threshold.

	Objective A	Objective B	Objective C	All	#Students
2014 Fall	2.9	2.8	2.9	2.9	101
2015 Winter	2.6	2.5	2.6	2.6	41
2015 Fall	2.7	2.7	2.6	2.7	31
2017 Winter	2.6	2.7	2.7	2.6	59
2017 Fall	2.9	2.9	2.8	2.9	48
2018 Winter	3.2	3.2	3.1	3.2	59
2021 Fall	3.00	3.27	3.46	3.23	161

Table 61. Summary of the results of the *Social and Behavioral Sciences* ties domain from the Fall 2014 until Fall 2021.

PSYC 1020/1200H Introduction to Psychology/Honors

Section (s)	# Students	Instructor
E01	21	Ashley Kniola
D14	26	Madhavi Menon
L01	14	Matthew Murphy
D10	27	Myron Burns
D01 / Honors	15	Leanne Boucher
5 Sections	103 Students	

Table 62. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Multiple Choice	We did in-class assignments related to reinforcement. This type of question in usually hardest for students to grasp. This was covered in the first few weeks; students were tested for it in week 16. The timing could have affected the result.
1.2	A	Multiple Choice	We discussed examples in class. This chapter was discussed after the mid-term, so there could be a recency effect.
1.3	B	Multiple Choice	We discussed research methods often. Research methods are discussed often in class, to help students remember key concepts.
1.4	B	Multiple Choice	We talked about study design frequently. This specific method was discussed in week 1 of the class.

Artifact	Objective	Assessment type	Comment
1.5	C	Multiple Choice	We discussed multiple examples in class. This study was discussed in week 15, a few days before the students took the gen ed exam.
1.6	C	Multiple Choice	We discussed examples in class. The chapter covering social psychology was covered right before the gen ed exam; the recency effect could be at play here.

Table 63. Artifact for PSYC-1200. The Final exam used 6 items to assess the 3 rubric objectives.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	23	45	3	32	2.4
1.2	A	14	1	19	66	3.3
1.3	B	2	16	32	52	3.3
1.4	B	9	5	25	63	3.4
1.5	C	3	4	11	80	3.5
1.6	C	1	8	14	75	3.5

Table 64. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- Overall, 97 students (94%) scored between *effective and outstanding* on all learning objectives, with an AIP score of 3.2 points. It appears the standard of success was met.
- Some students did not complete some of the assessment questions. For the 3 objectives, the LOP were above the goal of 70%.
- On objective A, 84% of students (87) were between *effective* and *outstanding*, for objective B 93% of students (96), and 95 students (92%) for objective C.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	1	A	2.8	87	84%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	3.3	96	93%	At or above LOPT	Between Effective and Outstanding
# Students	103	C	3.5	95	92%	At or above LOPT	Between Effective and Outstanding
		Overall	3.2	97	94%	At or above LOPT	Between Effective and Outstanding

Table 65. Overall analysis for PSYC-1200 and PSYC-1200H.

Conclusions

- Students seemed to perform better on learning objectives that were taught closer to the date the items were administered. One way to improve this may be to continue to emphasize these core learning objectives throughout the semester. This could be done through additional testing or in-class discussions.
- Overall, students showed that they did well. All objectives show big numbers on the *outstanding* level, as can be seen from Fig. 15. The exception is item 1.1 (about "negative reinforcement"), a concept that is notoriously challenging for students to understand. Still, the result was adequate.
- In terms of the assessment process, the analysis is based only on students who responded (withdrawn students and students who skipped questions were excluded).
- In terms of strengths and weaknesses, items 1.5 and 1.6 showed the highest average, while item 1.1 showed the lowest one. Item 1.4 was either a question about linguistics or about research methods, which is promising in terms of focus on scientific preparedness. Item 1.5 focused on social psychology. In general, students did well in areas of Human Development, Research, and Social Psychology.

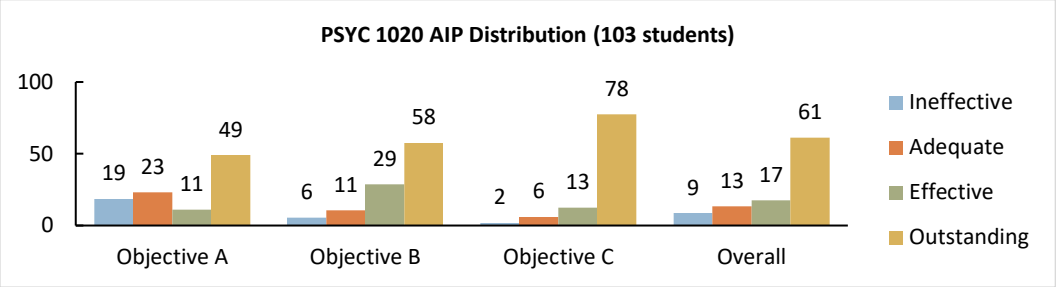


Figure 17. AIP distribution of scores per objective. The number of students is shown on top of each bar.

SOCL 1020 Introduction to Sociology

Section (s)	# Students	Instructor
L01	1	Eileen Smith-Cavros
1 Section	13 Students	

Table 66. Section assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	short answer essay	The short answer essay for each objective was a discussion posting that demonstrated how social forces could be analyzed using multiple sociological frameworks, examples, and original analysis.
1.2	B	short answer essay	
1.3	C	short answer essay	

Table 67. Artifacts for SOCL-1020. A short answer essay was used to assess objectives A, B, and C.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	0	3	5	5	3.2
1.2	B	1	2	5	5	3.1
1.3	C	0	0	5	8	3.6

Table 68. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- This assessment included 1 artifact divided in 3 items. The assessment results suggest effectiveness in all three Learning Objectives.
- The learning outcome proficiency was 85% (11 students) with an average of 3.3. A measure of between *effective and outstanding* was obtained for both objectives A and B, and *outstanding* for objective C.
- On objective A, 77% of students (10) were between *effective* and *outstanding* as well as for objective B. For objective C, the LOP shows a 100% success (13 students), suggesting that students were well prepared for this type of question.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	1	A	3.1	10	77%	At or above LOPT	Between Effective and Outstanding
# Items	3	B	3.3	10	77%	At or above LOPT	Between Effective and Outstanding
# Students	13	C	3.6	13	100%	At or above LOPT	Outstanding
		Overall	3.3	11	85%	At or above LOPT	Between Effective and Outstanding

Table 69. Overall analysis for SOCL-1020.

Conclusions

- While the students demonstrated a high degree of comprehension there is always room for improvement. The focus on improvement can be on objectives A and B, and at increasing detail of comprehension; the goal is to move students from effective toward outstanding.

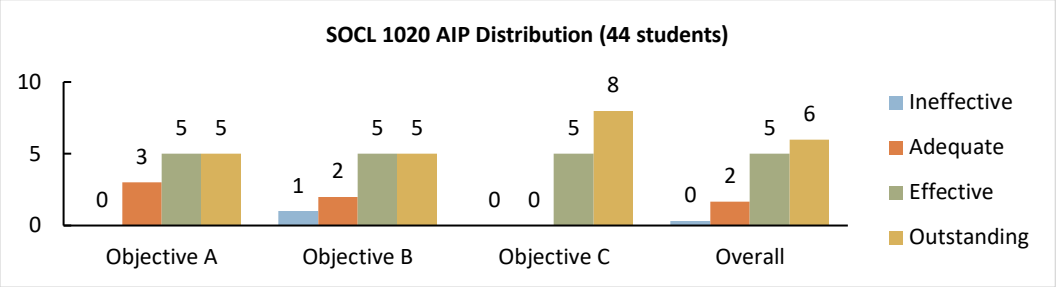


Figure 18. AIP distribution of scores per objective. The number of students is shown on top of each bar.

ANTH 1020 Introduction to Anthropology

Section (s)	# Students	Instructor
L01	28	Jessie Johanson
1 Section	28 Students	

Table 70. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	short answer essay	The short answer essay for each objective was a discussion posting that demonstrated how social forces could be analyzed using multiple sociological frameworks, examples, and original analysis.
1.2	B	short answer essay	
2.1	C	short answer essay	

Table 71. Artifacts for ANTH-1020. A short answer essay was used to assess objectives A, B, and C.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	0	3	8	13	3.4
1.2	B	0	4	7	13	3.4
2.1	C	0	3	8	17	3.5

Table 72. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- The assessment results suggest effectiveness in all three objectives. Overall, 96% of all students (27) were measured between *effective and outstanding* with an average score 3.5 points.
- On objective A, 88% of students (21) were between *effective* and *outstanding*. Similarly, 20 students (85%) in objective B and 25 students (89%) on objective C were between *effective* and *outstanding* as well as. The AIP scores were 3.4, 3.4, and 3.5 for objectives A, B, and C respectively.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	3.4	21	88%	At or above LOPT	Between Effective and Outstanding
# Items	3	B	3.4	20	83%	At or above LOPT	Between Effective and Outstanding
# Students	28	C	3.5	25	89%	At or above LOPT	Between Effective and Outstanding
		Overall	3.5	27	96%	At or above LOPT	Between Effective and Outstanding

Table 73. Overall analysis for ANTH-1020.

Conclusions

- While the students demonstrated a high degree of comprehension there is always room for improvement.
- The focus on improvement to make students go from *effective* toward *outstanding*.
- Figure 17 shows a high students' performance of *outstanding* level on all objectives.

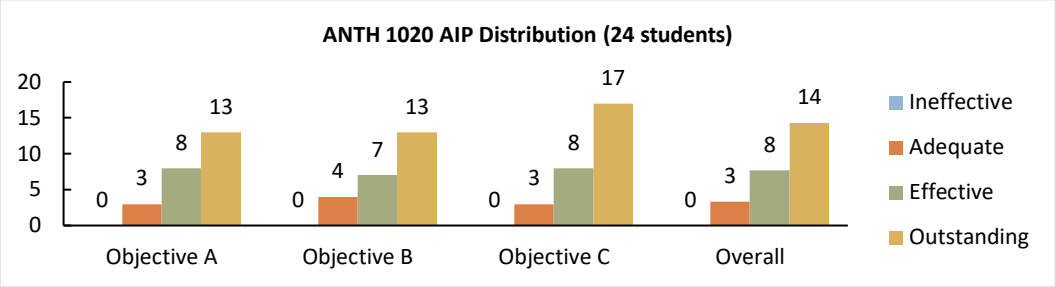


Figure 19. AIP distribution of scores per objective. The number of students is shown on top of each bar.

INST 1500 Global Issues

Section (s)	# Students	Instructor
D01	17	Ransford F. Edwards
1 Section	17 Students	

Table 74. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	short essay	Students submitted a brief paper focused on Plastics: The Product, Problem, and Politics.
2.1	A	short essay	Students submitted a brief paper focused on policymaking and current event
1.2	B	short essay	Students submitted a brief paper focused on Plastics: The Product, Problem, and Politics
2.2	B	short essay	Students submitted a brief paper focused on policymaking and current event
1.3	C	short essay	Students submitted a brief paper focused on Plastics: The Product, Problem, and Politics.
2.3	C	short essay	Students submitted a brief paper focused on policymaking and current event

Table 75. Artifacts for INST-1500. Two short essays were used to assess objectives A, B, and C.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	0	3	7	7	3.2
2.1	A	1	4	7	6	3.1
1.2	B	1	4	9	4	2.9
2.2	B	2	2	7	7	3.0
1.3	C	0	5	7	5	3.0
2.3	C	1	4	9	4	2.9

Table 76. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- At an average score of 3.06 out of 4, students appeared more proficient at demonstrating knowledge in a strict descriptive sense (Objective A). They do seem to have a bit more difficulty as it pertains to information synthesis and application (Objectives B and C) where the average score was a 3.00 and 2.95 respectively.

- Overall, in terms of proficiency, our students have met both the LOPT and AIPT. First, 14 students (82%) out of 17 have met the 2.5 individual proficiency threshold (between *adequate and effective*). Secondly, this 82% is above the learning outcomes proficiency target as outlined by the General Education task force.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	3.06	15	88%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	3.00	14	82%	At or above LOPT	Between Effective and Outstanding
# Students	17	C	2.95	13	76%	At or above LOPT	Between Effective and Outstanding
		Overall	3.02	14	82%	At or above LOPT	Between Effective and Outstanding

Table 77. Overall analysis for INST-1500.

Conclusions

- While we would prefer students to be teetering more towards the *outstanding* side of the spectrum (Fig. 18), we are encouraged by their performance and will use these results to set new performance goals.

- Our students are well advanced in terms of descriptive analysis; however, they need to be encouraged to be more formidable in terms of explanation. In this regard, it is important that students are exposed to more material designed to engage their theoretical reasoning and methodological talents.
- As always, the instruments of assessment are inherently flawed (the artefacts themselves), so we should always take these results with the proverbial pinch of salt.

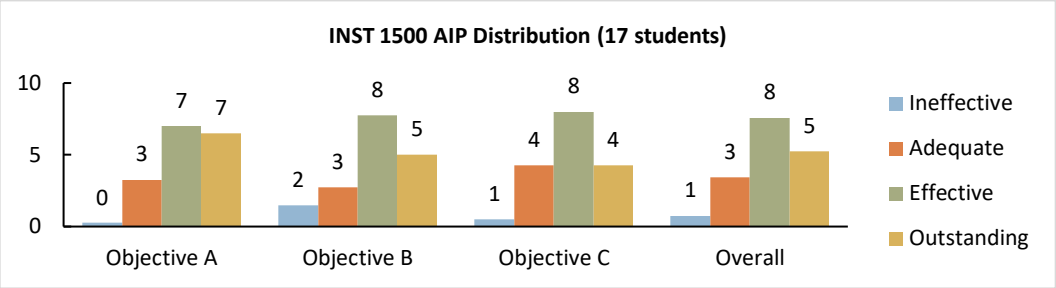


Figure 20. AIP distribution of scores per objective. The number of students is shown on top of each bar.

e. Written Composition

Courses Assessed: COMP-2000 – Advanced College Writing

Departments involved: Department of Communication, Media, and the Arts.

- Participating faculty assessed a total of 23 students divide into 5 sections.
- Students were assessed using 2 artifacts that consisted in a project that required first and final drafts.

Section (s)	# Students	Instructor
E01	4	Billy Jones
L02	4	Jennifer Eddings
L01	5	Juliette Kitchens
D09	5	Kelly Concannon
D06	5	Shoorangiz Rahimi
5 Sections	23 Students	

Table 78. Sections assessed and participating faculty.

Artifacts

Artifact	Objective	Assessment type	Comment
1.1	A	Paper	First draft
2.1	A	Paper	Final draft
1.2	B	Paper	First draft
2.2	B	Paper	Final draft
1.3	C	Paper	First draft
2.3	C	Paper	Final draft

Table 79. Artifacts for COMP-2000: a first and final drafts of a research project.

Data Presentation

Artifact	Objective	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	A	0	9	12	1	2.62
1.2	A	0	5	17	2	2.85
1.3	B	1	11	10	0	2.44
1.4	B	0	9	12	2	2.69
1.5	C	1	11	9	1	2.47
1.6	C	0	8	12	3	2.75

Table 80. Results for each rubric objective. The Table shows the number of students per score. The AIP for each item/objective is also given.

Data Analysis

- Overall, 15 students (64%) scored between *effective and outstanding* on all learning objectives, with an average score of 2.64 points. This is below the learning outcome proficiency threshold of 70%.

- Objective A was above the LOPT, at 86% (20 students) with an average score of 2.74. For objectives B and C, the percentage of success were below the goal of 70%. On objective B, 69% of students (16) were between *adequate* and *effective* with an average of 2.57. Similarly, objective C had 56% of students (13) with an average of 2.61.

Details		Rubric Objective	AIP	Learning Outcome Proficiency			
				# Students	% Students		
# Artifacts	2	A	2.74	20	86%	At or above LOPT	Between Effective and Outstanding
# Items	6	B	2.57	16	69%	Below LOPT	Between Adequate and Effective
# Students	23	C	2.61	13	56%	Below LOPT	Between Adequate and Effective
		Overall	2.64	15	64%	Below LOPT	Between Adequate and Effective

Table 81. Overall analysis for the Written Composition (COMP-2000) domain.

Conclusions

- Faculty believes that some of the Gen Ed's assessment rubric objectives are not measured in COMP2000. Maybe a different assessment should be used to address those needs.
- Overall, the students performed lower than expected. According to Fig. 19, most students were at levels *adequate* and *effective*.

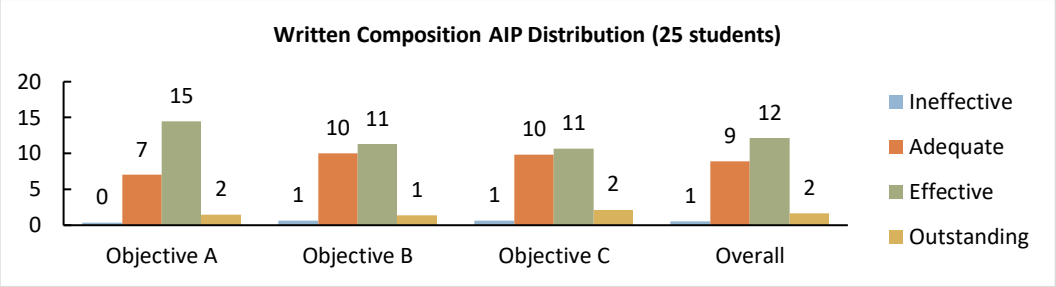


Figure 21. AIP distribution of scores per objective. The number of students is shown on top of each bar.

Table 69 contains a summary of the *Written Composition* domain from Fall 2014 until our last assessment. During this time, 8 assessments rounds were performed. In this assessment round:

- We assessed 23 students.
- Our overall average IP was 2.64. This could be due to our students coming back to in person lectures after the pandemic.
- All objectives consistently had an average IP above the 2.5 threshold.

	Objective A	Objective B	Objective C	All	#Students
2014 Fall	2.8	2.8	3.0	2.87	25
2015 Winter	3.5	3.1	2.9	3.16	28
2015 Fall	3.5	3.1	3.3	3.30	12
2016 Fall	2.6	2.5	2.3	2.48	42
2017 Winter	2.2	3.1	2.8	2.71	37
2017 Fall	2.8	3.0	2.7	2.85	32
2018 Winter	3.0	2.8	2.9	2.88	72
2021 Fall	2.74	2.57	2.61	2.64	23

Table 82. Summary of the results of the *Written Composition* domain from the Fall 2014 until Fall 2021.

Annex–2: Assessment of the General Education Learning Outcomes

Summary for Fall 2014 – Winter 2018

Maria Ballester

1. Introduction

This document contains a summary of the information each domain provided during the period of Fall 2014 until Winter 2018. During this time, eight assessments rounds were performed. We formatted the information and analyzed it in a way that we will probably use in the assessment period of Fall 2021.

Assessment of the General Education Learning Outcomes is a core requirement for accreditation. Most importantly, it allows us to continuously review and improve the program. During each assessment cycle, faculty of preselected courses assess students on the General Education Learning Outcomes in each of the domains listed in table 1. During the period of Fall 2014 until Winter 2018, we assessed the General Education learning outcomes by using pre-established assessment rubrics for each domain. These rubrics were divided into two or more objectives, named in this document A, B, C, etc. for consistency. Assessments were carried out by *artifacts* embedded into one or more of the regular course's assignments (e.g., a final exam, midterm paper, etc.). At the end of each of the assessment cycles, a panel of faculty evaluated the artifacts on a 4 points scale (1 equals Ineffective, 2 equals Adequate, 3 equals Effective, and 4 equals Outstanding) according to the assessment rubrics. Reports were written by the domains and delivered to the General Education task force. The data collected was also meant to be further analyzed for patterns and trends related to the achievement of learning outcomes. The idea was to use it as part of the continuous review of the general education curriculum, and to revise the courses included in the general education menu. This analysis was never accomplished, or if it was, it was not made public. This document will try to accomplish part of these goals.

Arts and Humanities	Any course with a prefix of: ARTS, HIST, HUMN, LITR, PHIL, SPAN, THEA, FILM, MUSC, DANC, or WRIT, or in a foreign language.
Mathematics	MATH courses at or above MATH 1040.
Science	Any course with a prefix of: BIOL, CHEM, ENVS, MBIO, SCIE, or PHYS.
Social and Behavioral Sciences	Any courses with a prefix of: ANTH, COMM, ECN, GEOG, GEST, INST, POLS, PSYC, or SOCL.
Written Composition	COMP courses at or above COMP 1500.

Table 83. General Education Domains and Requirements.

We studied the data provided during the period of Fall 2014 until Winter 2018 and read the original reviewers' conclusions and suggestions. Based on this information, and research done on the topic, we corrected most of the issues we encountered pertaining the assessment process and implemented them in the Fall 2021 assessment round. Additionally, aspects pertaining improvements of the General Education program are currently being considered by the task force. We are in the process of developing strategies to improve all aspects of the assessment procedures and the program itself. These includes:

- *Consistency*: This is fundamental for the General Education program to function according to its mission. We are working on rules to make the process more dependable, yet flexible enough to evolve and adapt.
- *Scheduling*: A schedule to be followed for the duration of a term (for example, a 3-year plan). The schedule should include details of the assessment process for the duration of the term, courses to be assessed, order of assessment, number of students to be assessed, etc.
- *Assessment Goals*: It seems that many reviewers and faculty were not sure if the results obtained were satisfactory or not. Due to this lack of clear successful goals, for the Fall 2021 assessment round we established a target score of 2.5 points, on a scale from 1 to 4, with a 70% of level of success (70% of students must score at or above the target score).
- *Feedback*: The General Education program needs to prepare a report, not only giving results but recommendations. It should be distributed back to all departments housing our five domains.

2. General Analysis per Domain

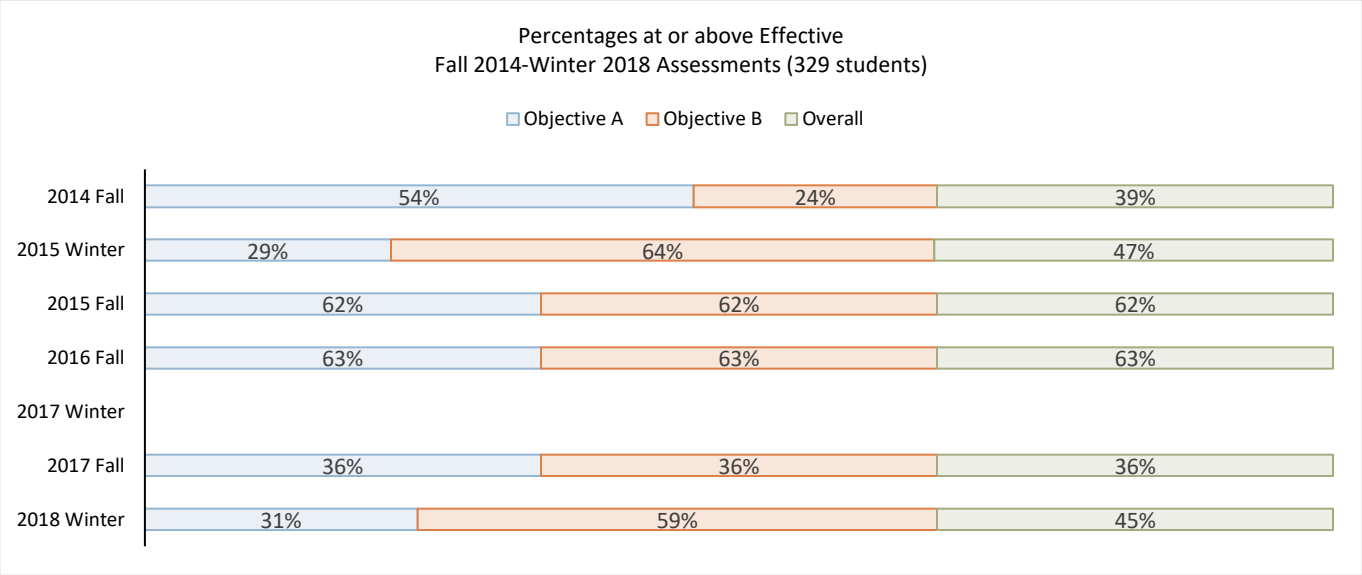
In the following analysis we evaluated students' performance on the learning outcomes over the period of Fall 2014 to Winter 2018. We considered a target score of 2.5 points, when possible, otherwise, the target is the Effective level or above (3.0 – 4.0 score points). Also, due to the lack of individual scores, we arbitrarily considered the percentage of success to be 70% of the scores at or above the target score. For a summary of each of the domain's reports during each of these assessment cycles, please see the "Domain Analysis" section below. The data was evaluated in three ways:

a. Percentage of students Meeting or Exceeding Expectations. The average scores for all objectives were ranked for comparison according to the percentage of scores at or above Effective (3.0 points), and the level of success of 70% was evaluated.
b. Measure of central tendency. We examined the typical level of performance (median or average values) of the assessed students. These values were calculated using the scores provided by the reviewers for each the objectives and a trend was calculated for each assessment rubric objective, and overall.
c. Cycle-to-Cycle Change Trend. The cycle-to-cycle change of the median (or average) value was calculated for each objective and overall. Values were calculated by $(\text{median}_n - \text{median}_{n-1})/(\text{cycle}_n - \text{cycle}_{n-1})$. Additionally, we also found a trend for each of them.

3. Arts and Humanities

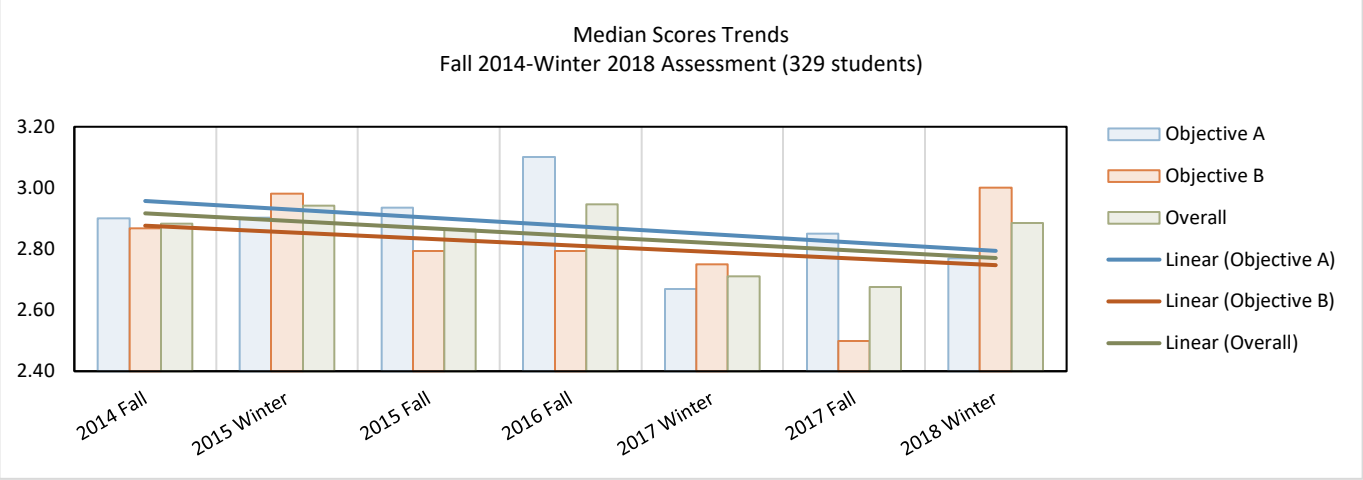
- There is no clear definition of artifact. It appears that artifacts were counted per number of students completing an assignment, and not per assignment itself.
- Some semesters the type of artifacts used was not clear.
- Not all students of a course were assessed. Students were chosen at random.
- No individual scores were provided. This makes it impossible to find a percentage of success.
- There were no target scores, or percentage of success stablished.
- After the analysis below, it seems that the domain has not met its expectations.

a. Percentage of students Meeting or Exceeding Expectations. The following table includes the performance of 329 students based on the data provided at the time. Although every cycle a percentage of students had scores above Effective, their percentages were below the success level of 70%. It appears that the percentages of both objectives showed no consistency between assessment cycles.

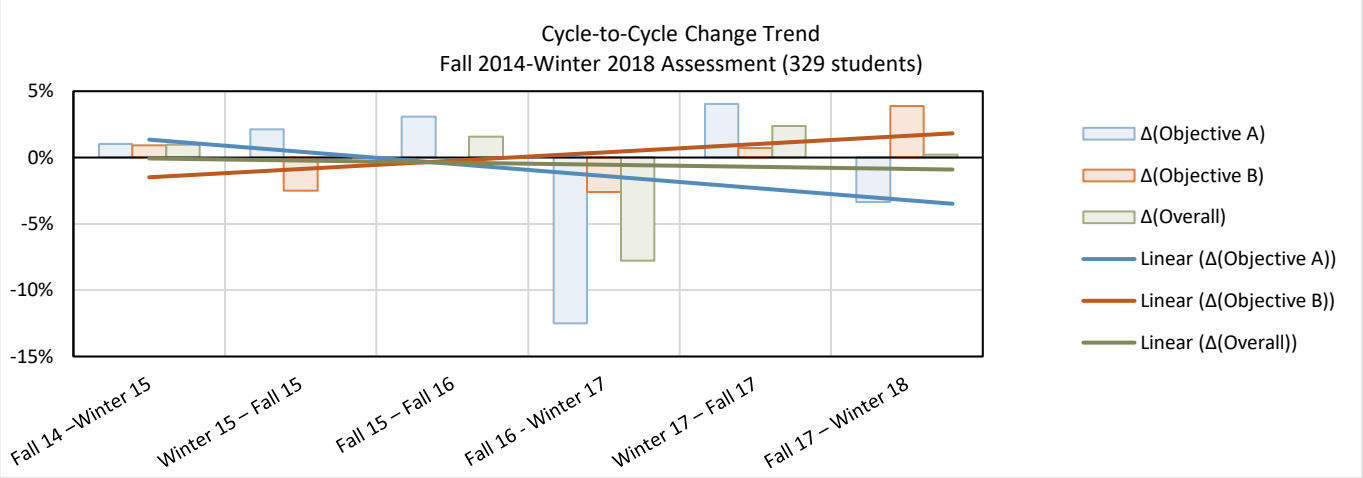


b. Measure of central tendency. We examined the typical level of performance (median values) of 329 students. The median of the scores appears to suggest that both objectives (–0.03 and –0.02 median/cycle respectively) have a downward tendency. Same can be seen for the overall scores for the domain (–0.02). However, these trends are small and is expected

that the median value of the next cycle will be above 2.5 points.



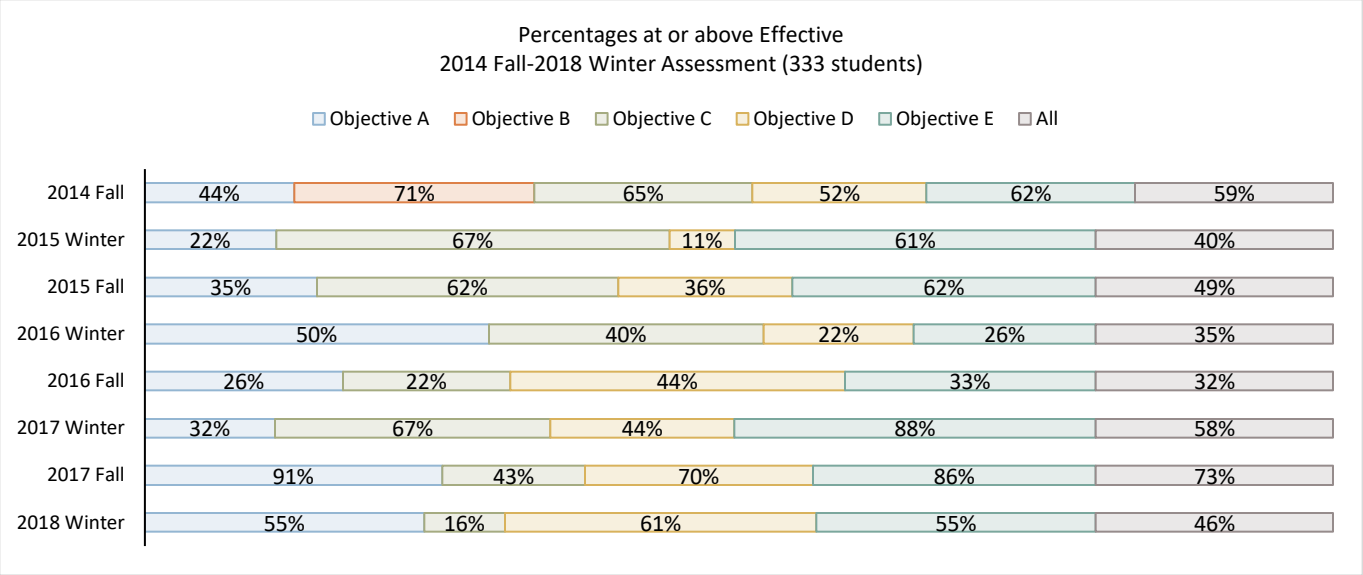
c. Cycle-to-Cycle Change Trend. Objective A seems to have a downward trend (–0.9 %/cycle) while objective B has an upward one (–0.6 %/cycle). We calculated an overall downward trend of –0.2% overall, which agrees with our previous find above. The downward tendencies are small compared to the overall values, and so not very significant. However, we should keep an eye on objective A's tendency in our next assessment round.



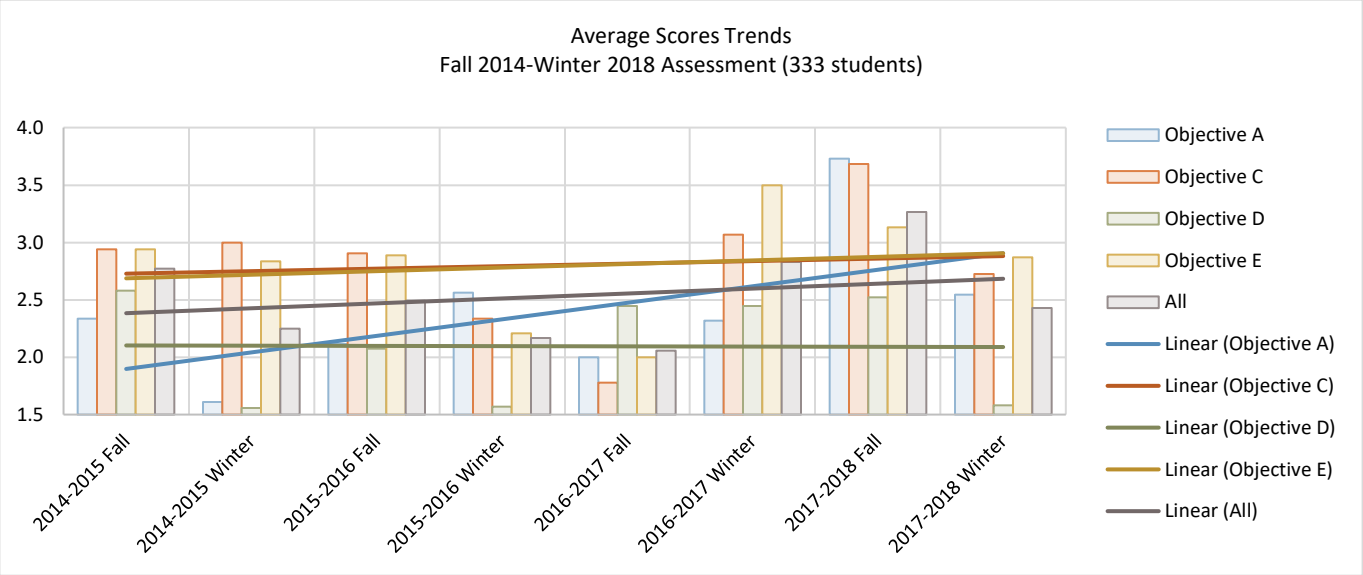
4. Mathematics

- Only few questions were used per artifact; typically, just one question assessing one objective. More objectives need to be assessed with at least two questions per objective.
- Objective B was only assessed during Fall 2014. We suggest to either include it in future assessments or to work on modifying the assessment rubric. Faculty from this domain acknowledged this and think it is important to keep assessing this objective.
- It appears that MATH 1040 has shown results that do not reflect the performance of students in general. Math faculty and the reviewers have suggested that MATH 1040 students are not mathematically mature enough to show the actual achievement of the learning outcomes. We suggest that this course be eliminated from future assessments rounds.

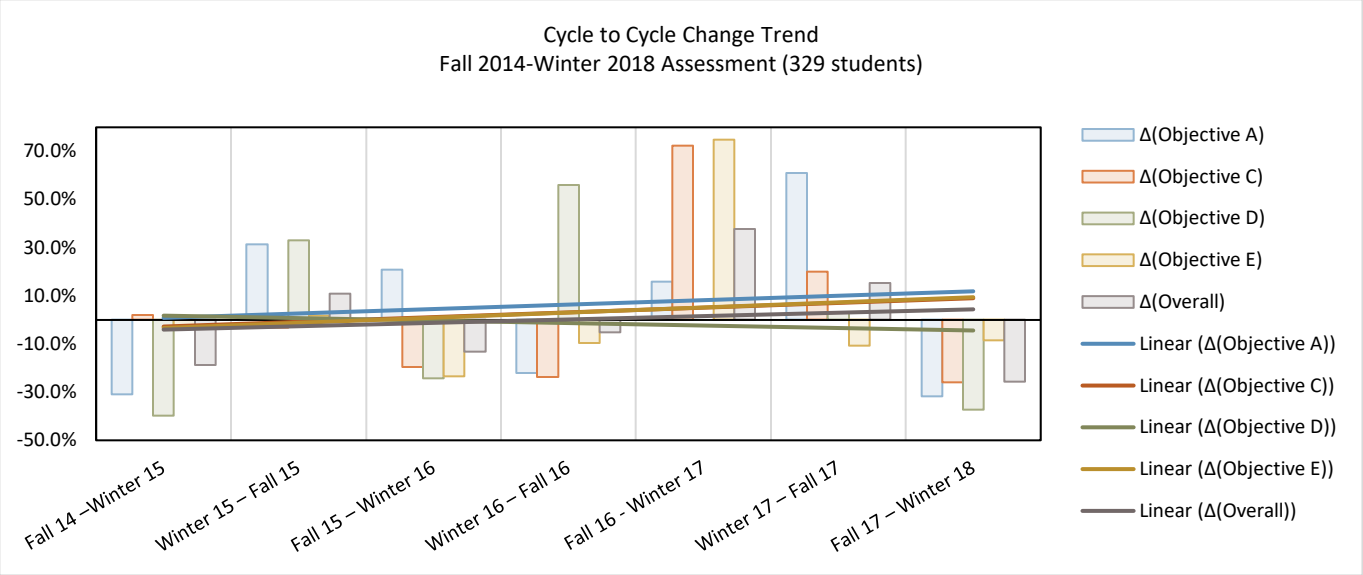
a. Percentage of students Meeting or Exceeding Expectations. The following include the performance of 333 students. Overall, the percentage of success for most objectives were consistent, although not meeting the 70% success level. There were two clear exceptions: Fall 2017, were every objective exceeded expectation except for objective C, and Fall 2016, were all percentages experience a significant drop. According to the numbers, objective A seems to be the most problematic. This opinion was also shared by the domain reviewer.



b. Measures of central tendency (average). We examined the average tendencies in performance for 333 students. The data appears to show that the average scores of all objectives have had an upward tendency (A = 0.14, C = 0.02, E= 0.03 points/cycle), except for a small tendency for objective D (–0.002). The overall trend for this domain is upward (0.04 points/cycle). All values are small compared to the overall values, and so not very significant.



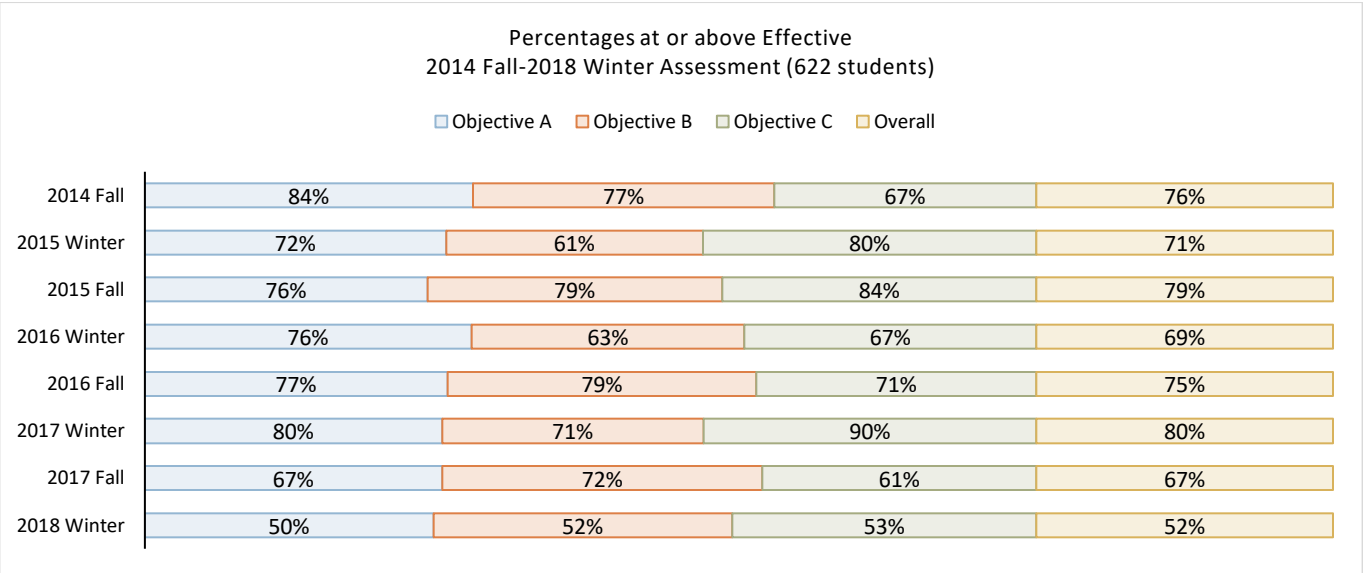
c. Cycle-to-Cycle Change Trend between Fall 2014-Winter 2018. The same trends mentioned above can also be seen on the cycle-to-cycle change trends (A = 2%, C = 2%, E = 2 %/cycle). Again, objective D seems to have a small downward trend (–1 %/cycle). The overall trend is upward (1 %/cycle). As mentioned above, these values are small compared to the overall percentage values.



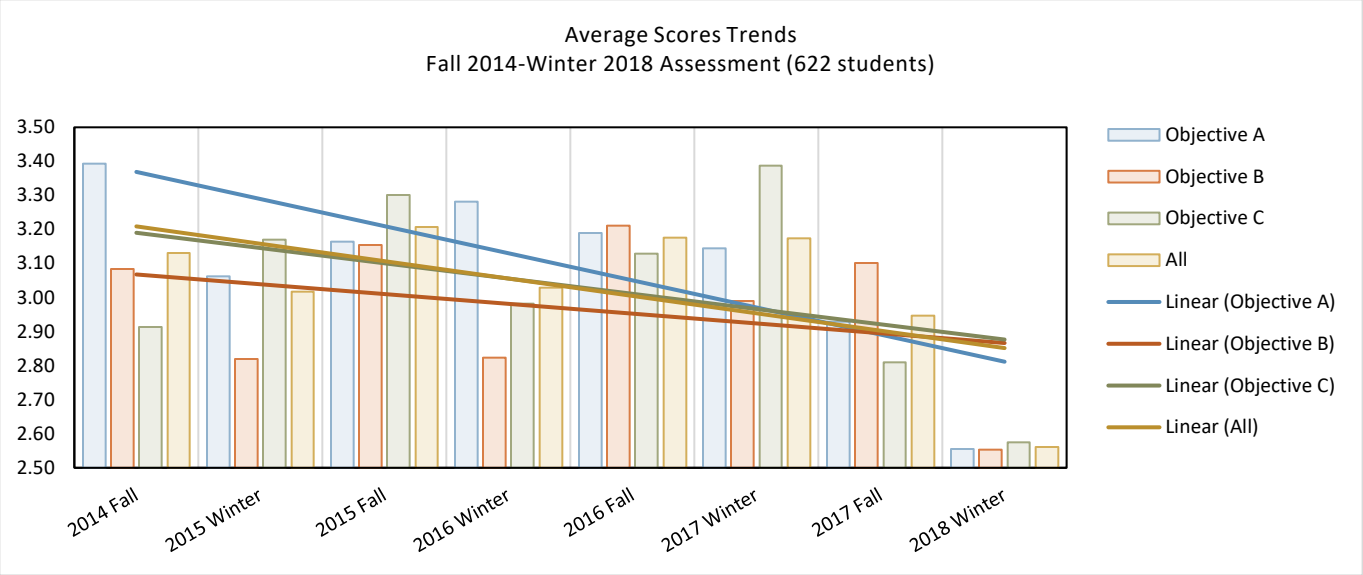
5. Sciences

- Biology used an artifact where 100 questions were accessed during the final exam. It is not clear if every question had a rubric (from 1 = inefficient to 4 = outstanding). It will be better to consider a subset of these question (10 to 15) for which assessment rubrics can be made.
- Although BIOL 1040 was used twice during this period, and was chosen for Fall 2021 assessment round, we think BIOL 1400 is a better option and should be considered in future assessments.

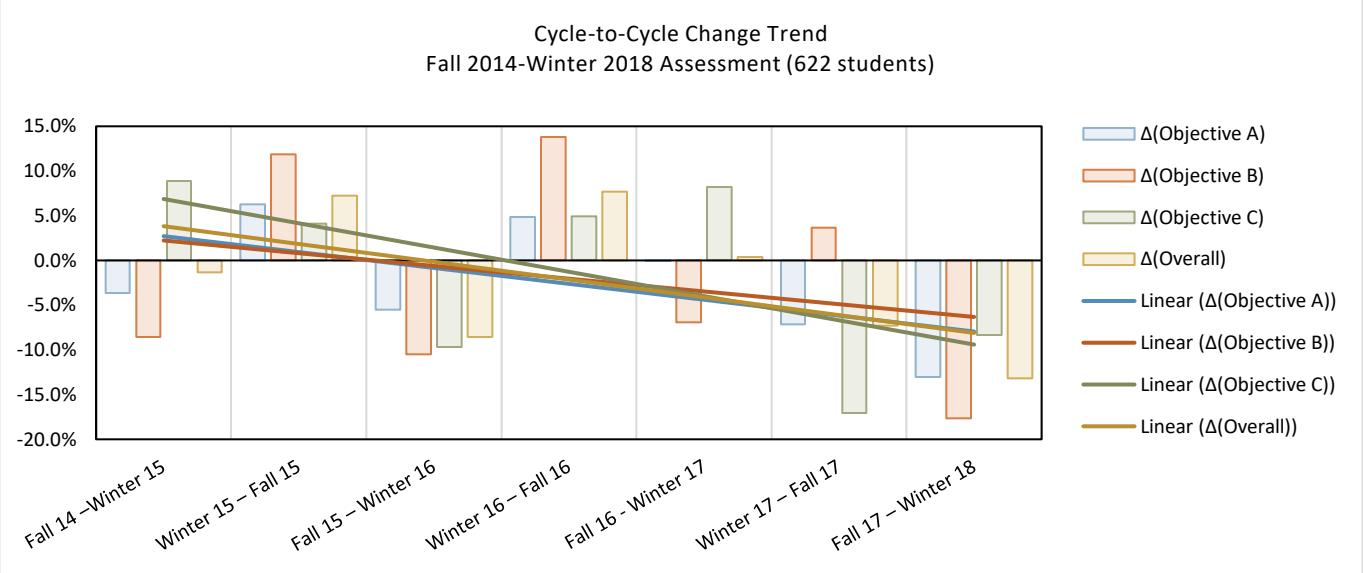
a. Percentage of students Meeting or Exceeding Expectations. The following table shows the performance of 622 students. In general, the domain has been meeting the 70% success level (or close to it) except for Winter 2018, where scores had a sharp drop form previous assessment. Every course assessed during this last cycle had the same tendency and could be consider an outlier event. However, we must keep an eye on the results from this domain in the Fall 2017 assessment round.



b. Measures of central tendency (average). We examine the average tendencies in performance of 622 students. All objectives have a downward tendency (A = –0.08, B = –0.03, and C = –0.04). Overall, the tendency had a value of –0.05 points/cycle. This tendency can be partially explained by the significant drop of scores during the Winter 2018 assessment.



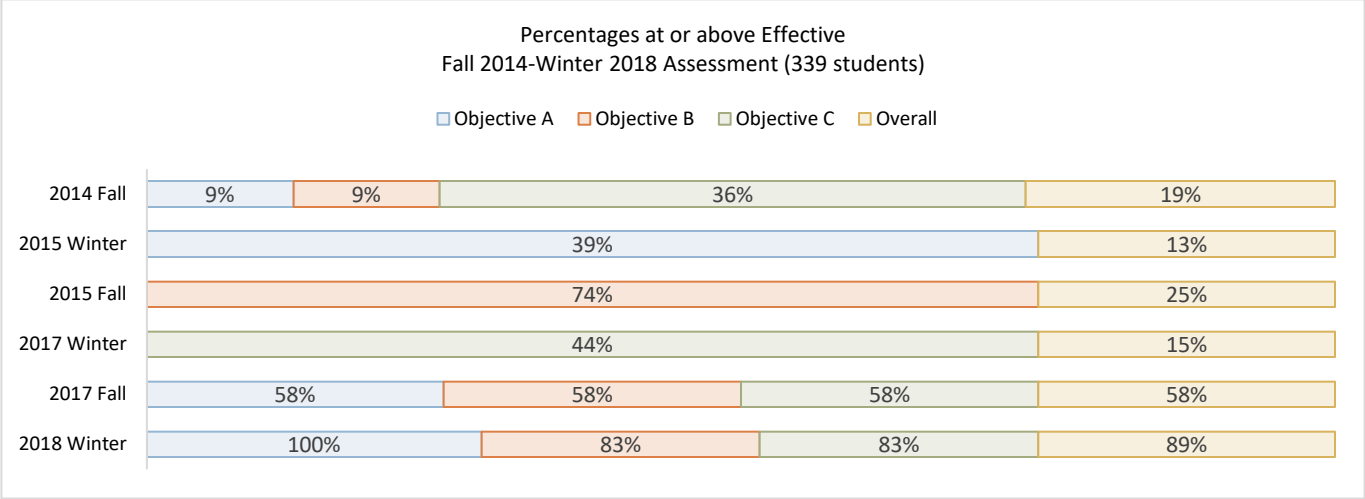
c. Cycle-to-Cycle Change Trend between Fall 2014-Winter 2018. The downward trend can also be seen, with a overall trend value of –2% which is within 10% of the maximum percentage value. Again, the significant drop on Winter 2018 had a big influence on the results.



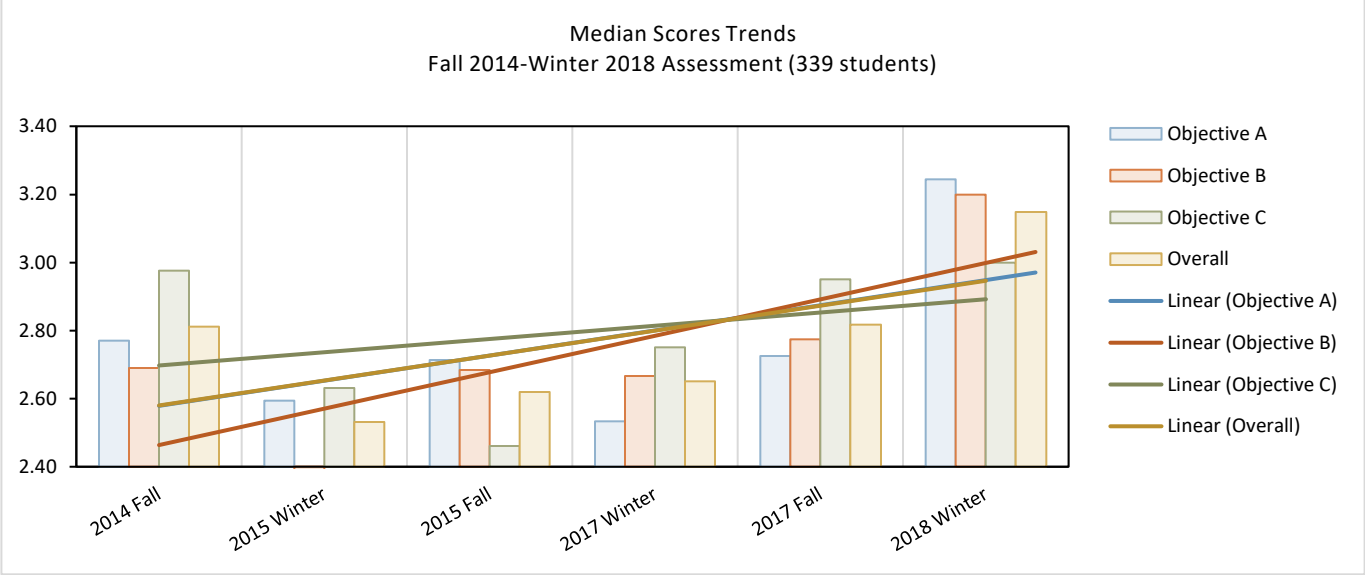
6. Social and Behavioral Sciences

1. We suggest numbering each artifact in a consistent and clear way will be beneficial when analyzing the data.

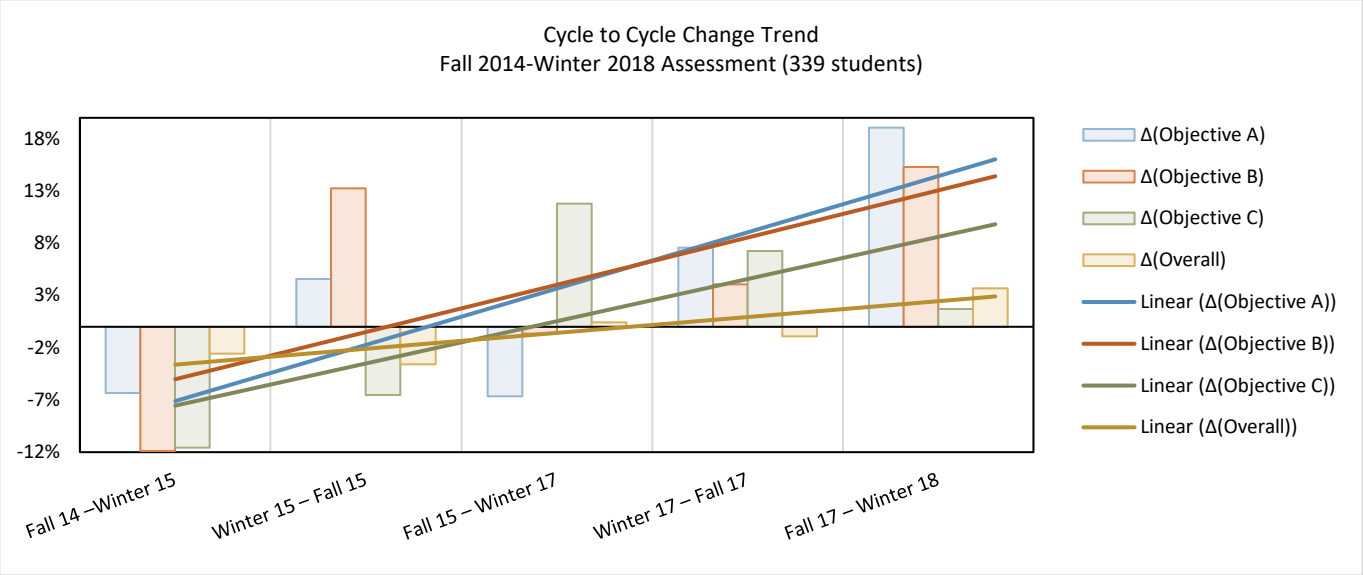
a. Percentage of students across multiple levels of performance. The following tables include the performance of 339 students. Overall, the percentage of success for most objectives were inconsistent, except for Winter 2018 in which a peak of 89% was reached. During that assessment round, all objectives had a success of 80%. Other clear exception was Fall 2015 were objective B exceeded expectation.



b. Measures of central tendency (median). We examined the typical level of performance of 339 students between Fall 2014-Winter 2018. According to the results, all objectives have an upward trend (A = 0.07, B = 0.1, and C = 0.04 median/cycle) with an overall value of 0.07 median/cycle. These tendencies are very small in value and are less than 10% of the maximum median value.



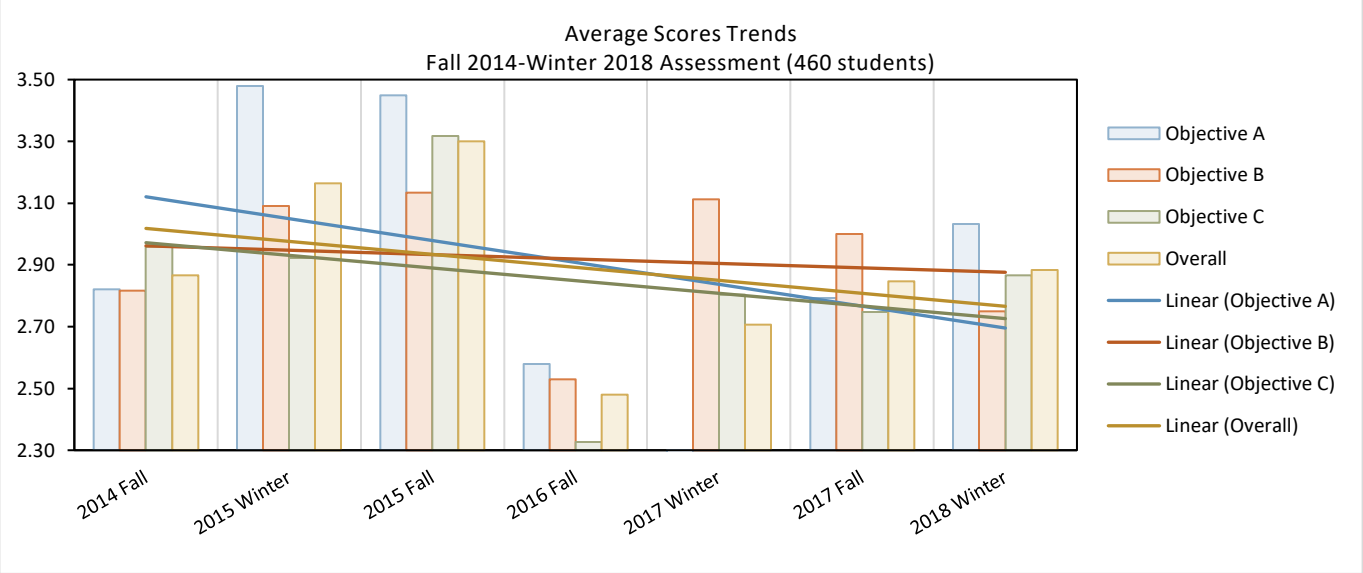
c. Cycle-to-Cycle Change Trend between Fall 2014-Winter 2018. Similar trends are seen on the cycle-to-cycle changes (A = 5%, B = 5%, C = 4 %/cycle). Again, objective D seems to have a small downward trend (–1 %/cycle). The overall trend is upward (2 %/cycle). Although these values seem small compared to the overall percentage values, they are well above 10% of the maximum. So, we must keep an eye on the results from this domain in the Fall 2017 assessment round.



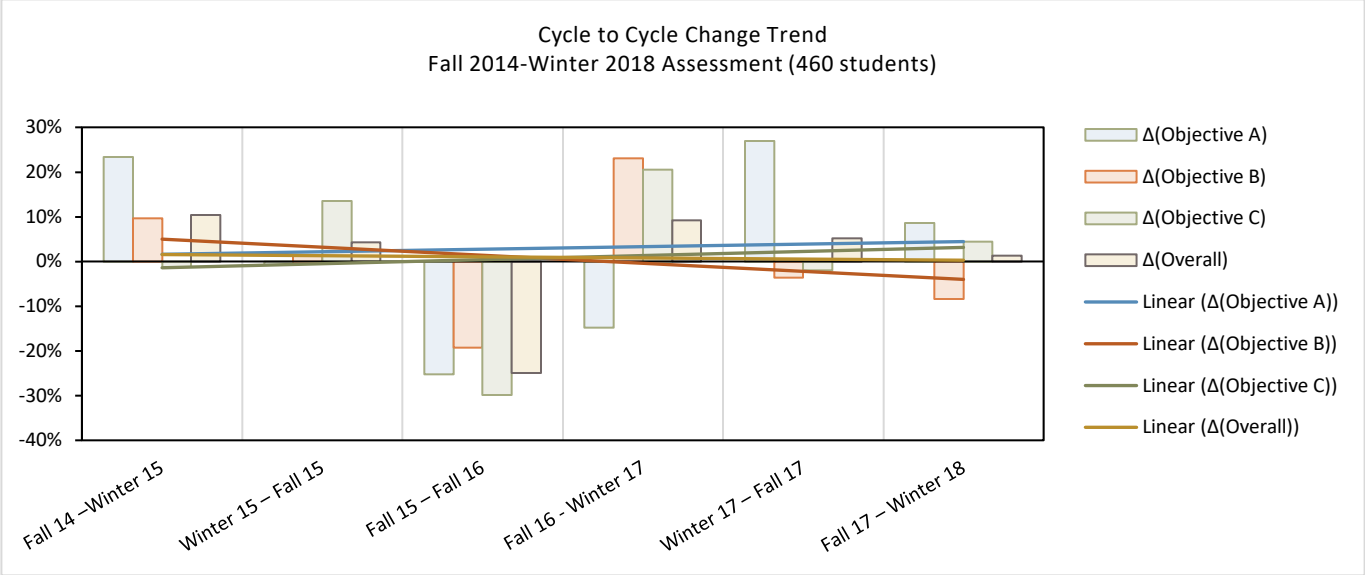
7. Written Composition

- The number of students assessed per course it is not clear at all, nor is the sections taught by faculty. Faculty must identify the section they are teaching, and the students assessed on each artifact.
- We suggest defining each artifact in a way that makes it clear for the analysis.
- With the data provided in the reports, It was impossible to find the percentage of students meeting or exceeding expectations.

a. Measures of central tendency of performance (average). We examined the typical level of performance of 460 students between Fall 2014-Winter 2018. Results indicate that the overall average score has a downward tendency of–0.04 points/cycle). This tendency is shared by all objectives: A is –0.07, B is –0.01, and C is –0.04. These tendencies have small values. There is a sharp drop in average values during Fall 2016, but values seem to be consistent otherwise.



b. Cycle-to-Cycle Change Trend between Fall 2014-Winter 2018. The results indicate a different picture than the average scores for all objectives, except objective B. (–0.02). The trends have a minimal tendency upward, with an overall trend of zero which means no net change has occurred during this time. However, we should keep an eye on the results of the next assessment round.


Cycle to Cycle Change Trend
Fall 2014-Winter 2018 Assessment (460 students)
30%
20%
10%
0%
-10%
-20%
-30%
-40%
Fall 14 –Winter 15
Winter 15 – Fall 15
Fall 15 – Fall 16
Fall 16 - Winter 17
Winter 17 – Fall 17
Fall 17 – Winter 18
Δ(Objective A)
Δ(Objective B)
Δ(Objective C)
Δ(Overall)
Linear (Δ(Objective A))
Linear (Δ(Objective B))
Linear (Δ(Objective C))
Linear (Δ(Overall))

Arts and Humanities

a. Courses

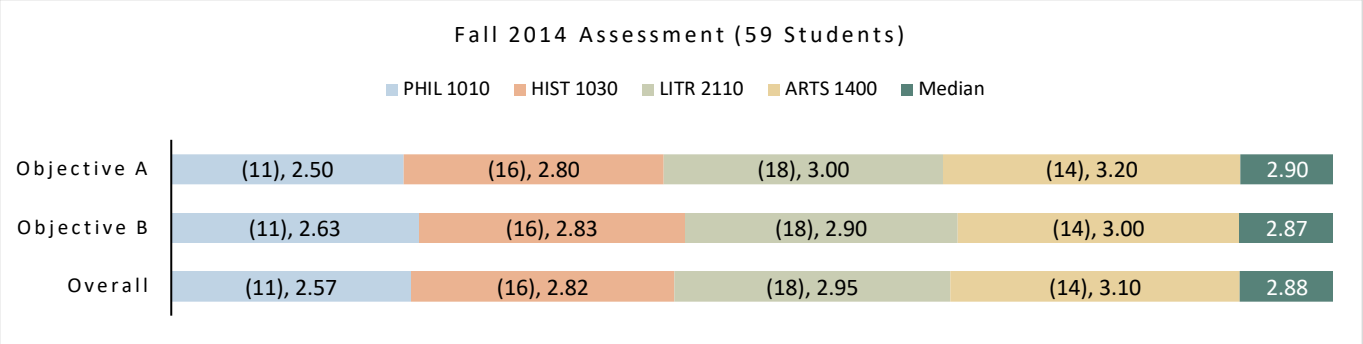
	ARTS 1400	ARTS 1500	DANC 1500	HIST 1030	HIST 1050	HIST 1100	HIST 1160	HUMN 1200	LITR 2010	LITR 2020	LITR 2021	LITR 2030	LITR 2031	LITR 2110	MUSC 1500	PHIL 1010	PHIL 2000	THEA 1000	THEA 1500
2014 Fall	X			X										X		X			
2015 Winter						X			X								X		X
2015 Fall		X	X	X				X											
2016 Winter																			
2016 Fall		X								X							X		
2017 Winter	X						X						X						
2017 Fall												X			X	X	X		
2018 Winter			X	X							X								

b. Artifacts and course information

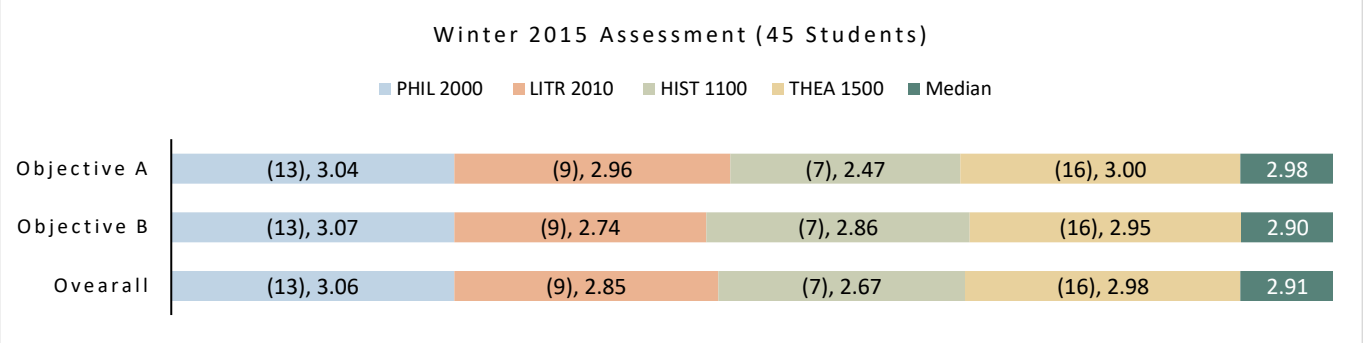
Course	Semester	Year	Sections	Instructors	#Students	Artifacts
ARTS 1400	Fall	2014 - 2015	EE1	Dan Gelbmann	14	14 papers
HIST 1030	Fall	2014 - 2015	DA1	David Kilroy	16	16 papers
LITR2110	Fall	2014 - 2015	1DY	Steven Alford	18	18 papers
PHIL 1010	Fall	2014 - 2015	DA1	David McNaron	11	11 papers
HIST 1100	Winter	2014 - 2015	EV1	Vince Toscano	7	7 papers
LITR 2010	Winter	2014 - 2015	1DY	Suzanne Ferriss	9	9 papers
PHIL 2000	Winter	2014 - 2015	NW1	H. Darren Hibbs	13	13 papers
THEA 1500	Winter	2014 - 2015	DA1	Mark Duncan	16	16 papers
ARTS 1500	Fall	2015 - 2016	6W1	Jessica Collado	11	11 papers
DANC 1500	Fall	2015 - 2016	DA1	Elana Lanczi	8	8 papers
HIST 1030	Fall	2015 - 2016	DA3	Tim Dixon	11	11 papers
HUMN 1200	Fall	2015 - 2016	1DY	James Doan	19	Final essay exam
ARTS 1500	Fall	2016 - 2017	5W1	Jessica Collado	10	10 papers
LITR 2020	Fall	2016 - 2017	5W1	Christine Jackson	10	10 Essays
PHIL 2000	Fall	2016 - 2017	NW1	Horace Hibbs	7	7 Exam Questions
ARTS 1400	Winter	2016 - 2017	EV1	Dan Gelbmann	22	22 artifacts
HIST 1160	Winter	2016 - 2017	DA1	Michael Bocco	15	15 artifacts
LITR 2031	Winter	2016 - 2017	DA1	Aileen Farrar	9	9 artifacts
LITR 2030	Fall	2017 - 2018	6W1	Ryan Farrar	12	12 artifacts
MUSC 1500	Fall	2017 - 2018	EV1	Bill J. Adams	11	11 artifacts
PHIL 2000	Fall	2017 - 2018	NW1	Darren Hibbs	10	10 artifacts
DANC 1500	Winter	2017 - 2018	EV1	Augusto Soledade	13	11 artifacts
HIST 1030	Winter	2017 - 2018	NW1	Timothy Dixon	10	10 artifacts
LITR 2021	Winter	2017 - 2018	DA1	Kathleen Waites	9	12 artifacts

c. Overall Data and Analysis

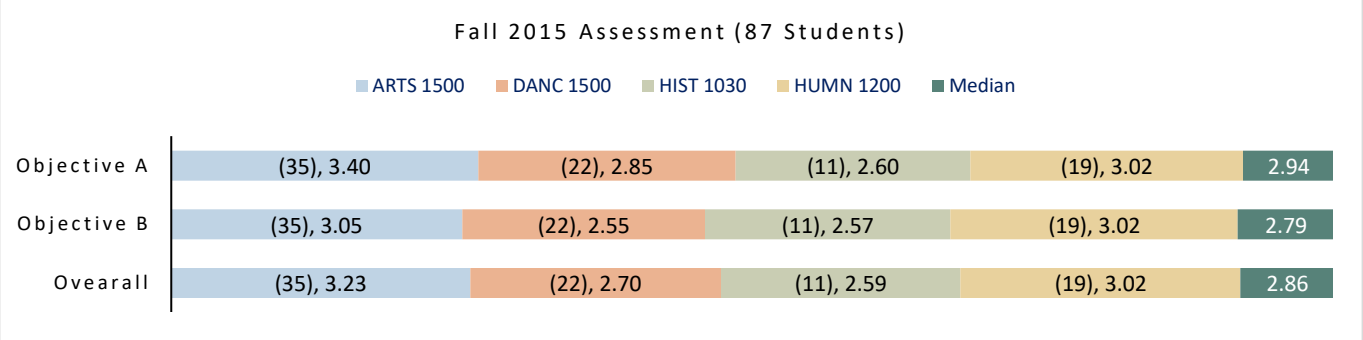
For each assessment rubric objective, the graphs below show the number of students (in parenthesis), the score per course, and the median for all courses (the number that best represents the *typical* score). It also includes the original written analysis, edited for brevity, and corrected if necessary. Additionally, some comments where boldfaced because we consider them useful or relevant.



Average student performance on each objective ranged from 2.5-3.2 (between adequate and effective). The total average across all courses for Objective A was 2.90, and for Objective B was 2.87. There do not seem to be any patterns that would suggest specific areas for improvement. Given the range of scoring between reviewers for a particular objective, it may be worthwhile for faculty reviewers to norm/debrief scoring as part of the assessment process, especially while the process is new.



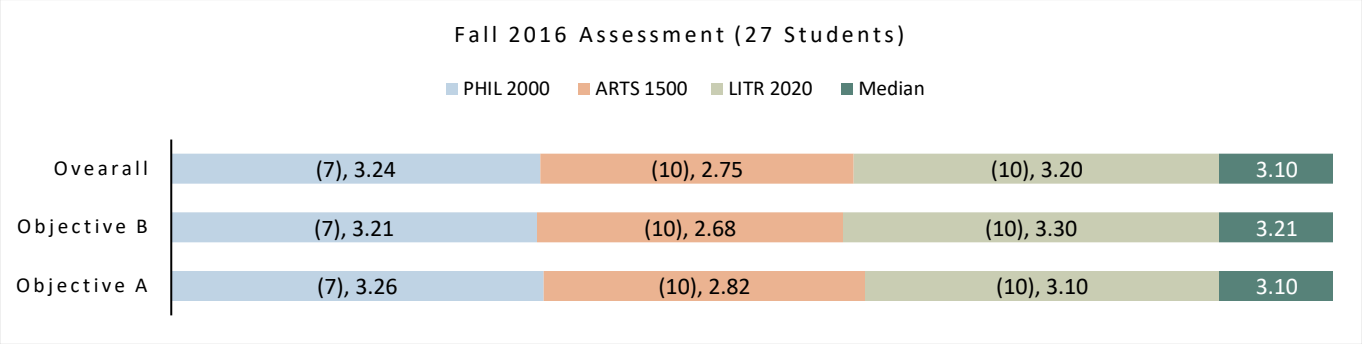
Average student performance on each objective between adequate and effective. The total average across all courses for Objective A was 2.98 and for Objective B was 2.9. These averages match those of the Fall 2014 assessment. There do not seem to be any patterns that would suggest specific areas for improvement. Continued discussion and debriefing among faculty evaluators is recommended as this process moves forward in the future.



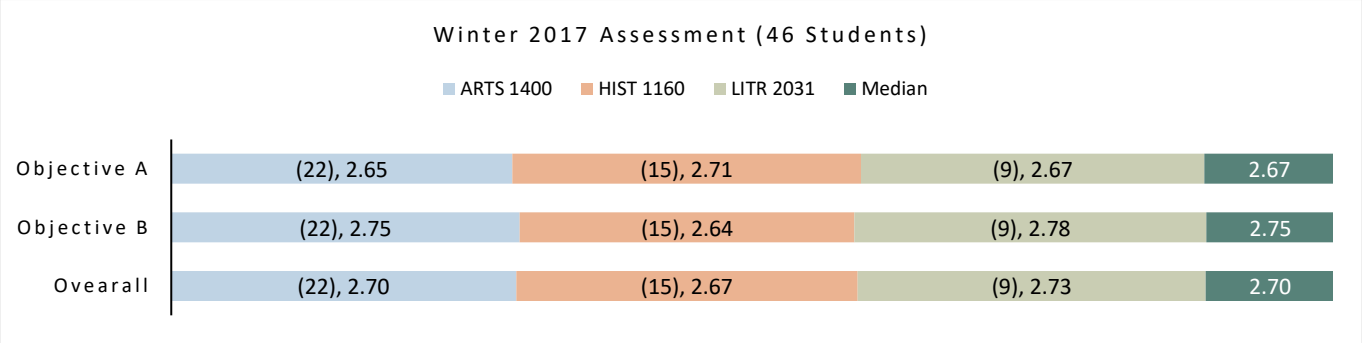
- ARTS 1500 Music Through History: *Objective A* averaged 3.4 for both reviewers while *Objective B*: averaged 3.05. These findings need to be discussed at a PVA Curriculum meeting. A target goal needs to be established and strategies for improvement need to be developed.
- DANC 1500 Contemporary Dance Techniques: *Objective A* averaged 2.85 for both reviewers while *Objective B* 2.55. These findings need to be discussed at a PVA Curriculum meeting. A target goal needs to be established and strategies for improvement need to be developed.
- HUMN 1200 1DY: Reviewers rated average student performance on each objective between adequate and effective. The total average for Objective A was 3.02, and for Objective B was 3.02. Overall, student performance on both objectives was assessed as effective. There do not seem to be any particular patterns that would suggest specific areas for improvement.

Continued discussion and debriefing among faculty evaluators is recommended as this process moves forward.

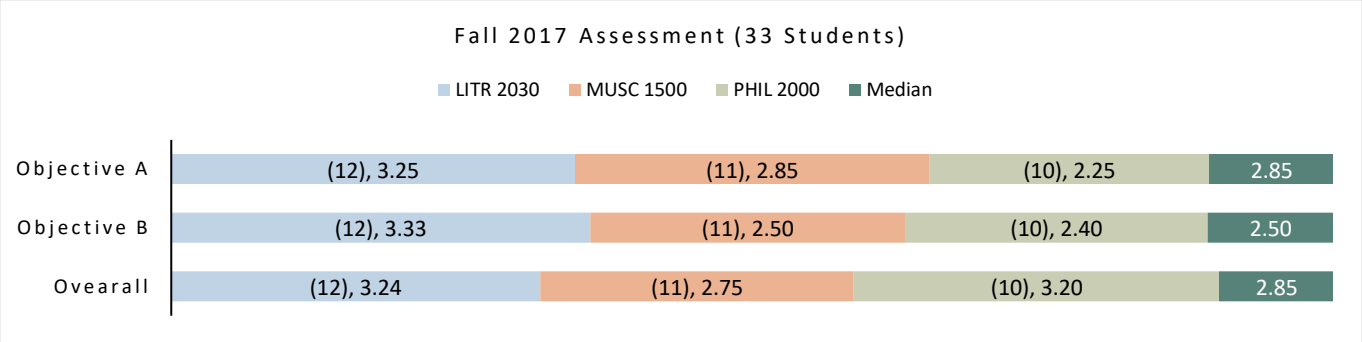
- HIST 1030 did not provided an analysis. Both objectives are in the range between adequate and effective, but without a specific target, we cannot define a successful outcome.



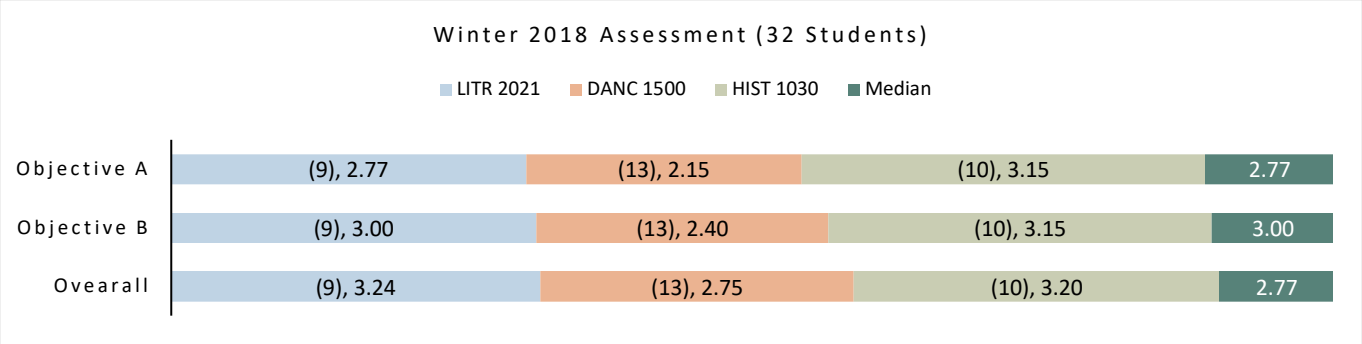
Reviewers rated average student performance on each objective in the effective range based on the rubric. The total average across all courses for Objective A was 3.10, and for Objective B was 3.21. There do not seem to be any patterns that would suggest specific areas for improvement. Continued discussion and debriefing among faculty evaluators is recommended as this process moves forward in the future.



Reviewers rated average student performance on each objective between adequate and effective based on the rubric. The total average across all courses for Objective A was 2.67, and for Objective B was 2.75. Though scores are lower than on previous assessments, there do not seem to be any patterns that would suggest specific areas for improvement. Departments will review and discuss general education assessment results and the integration of general education outcomes in lower-level courses. Feedback from the University team assessing the results of the general education assessment is also recommended.



Reviewers rated average student performance on each objective between adequate and effective based on the rubric. The total average across all courses for Objective A was 2.85, and for Objective B was 2.50. There do not seem to be any patterns that would suggest specific areas for improvement. Departments will review and discuss general education assessment results and the integration of general education outcomes in lower-level courses. Feedback from the University team assessing the results of the general education assessment is also recommended.



Reviewers rated average student performance on each objective between adequate and effective based on the rubric. The total average across all courses for Objective A was 2.77, and for Objective B was 3.00. There do not seem to be any patterns that would suggest specific areas for improvement. Departments will review and discuss general education assessment results and the integration of general education outcomes in lower-level courses. Feedback from the University team assessing the results of the general education assessment is also recommended.

Mathematics

a. Courses

	MATH 1040	MATH 1200	MATH 2020
2014 Fall	X	X	X
2015 Winter	X		
2015 Fall	X		
2016 Winter	X	X	

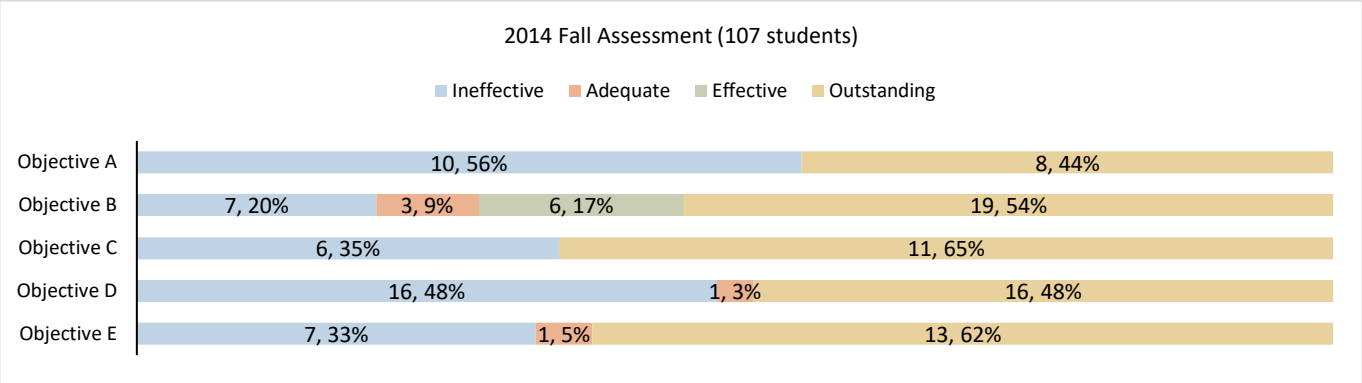
	MATH 1040	MATH 1200	MATH 2020
2016 Fall	X		
2017 Winter	X		
2017 Fall	X	X	
2018 Winter	X	X	

b. Artifacts and course information

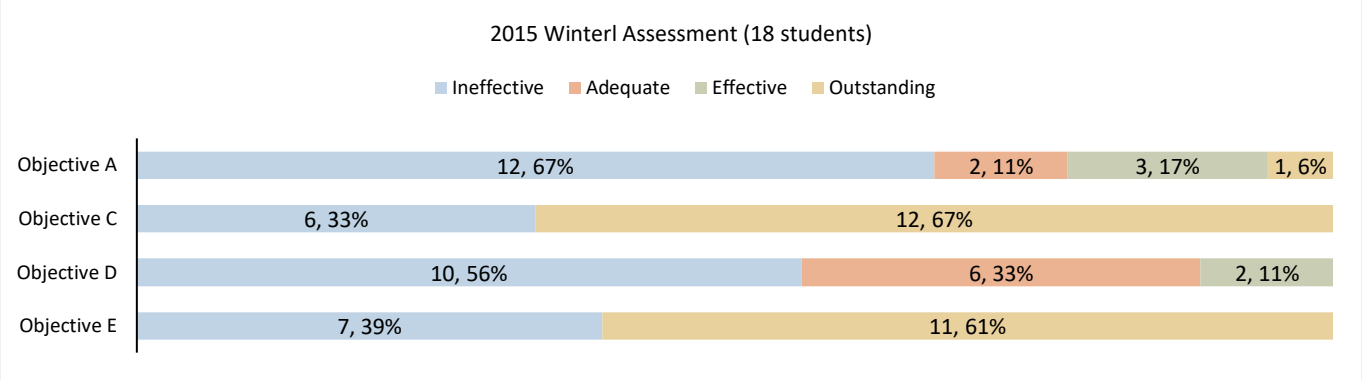
Course	Semester	Year	Sections	Instructors	#Students	Artifacts
MATH 1040	Fall	2014 - 2015	DA4	Shahla Nasserasr	18	Final Exam Question #1
MATH 1200	Fall	2014 - 2015	DA6	Eric Samansky	15	Midterm Question #8
MATH 1200	Fall	2014 - 2015	DA3	Abdelkrim Bourouihiya	18	Midterm Question #4; Final Exam Question #6a
MATH 1200	Fall	2014 - 2015	DA4	Vehbi Paksoy	21	Final Exam Question #1A
MATH 2020	Fall	2014 - 2015	DA1 DA9	Emilola Abayomi	18	Exam #1 Question #11; Exam #3 Question #1
MATH 1040	Winter	2014 - 2015	DA4	Eric Samansky	18	Midterm Exam #13, #15; Final Exam Question #9, #18
MATH 1040	Fall	2015 - 2016	DA4	Wolf Iberkleid	21	Final Exam Question 20
MATH 1040	Fall	2015 - 2016	DA6	Iuliana Stanculescu	18	Midterm Exam Question 5, 8a ; Final Exam Question 1
MATH 1040	Winter	2015 - 2016	DA3	Vehbi Paksoy	16	Final Exam Question 1A, 3A, 6B; Midterm Exam Question #4A, 13
MATH 1200	Winter	2015 - 2016	DA1	Eric Samansky	19	Midterm Exam Question 9
MATH 1040	Fall	2016 - 2017	DA5	Iuliana Stanculescu	19	Unknown
MATH 1040	Fall	2016 - 2017	DA7	Vehbi Paksoy	18	Final Exam question 2a, 3a; Midterm Exam question 4a, 6b
MATH 1040	Winter	2016 - 2017	DA4	Eric Samansky	19	Midterm Exam #5; Final Exam #9, 18
MATH 1040	Winter	2016 - 2017	DA5	Iuliana Stanculescu	8	Final Exam #1
MATH 1040	Fall	2017 - 2018	DA6	Wolf Iberkleid	22	Final Exam Question #3,#13
MATH 1200	Fall	2017 - 2018	DA2	Abdelkrim Bouoruhiya	23	Final Exam #5a, #6
MATH 1040	Winter	2017 - 2018	DA7	Iuliana Stanculescu	22	Midterm Exam #8b; Final Exam #1
MATH 1200	Winter	2017 - 2018	DA6	Vehbi Paksoy	23	Final Exam #6b; Midterm Exam #4a

c. Overall Data and Analysis

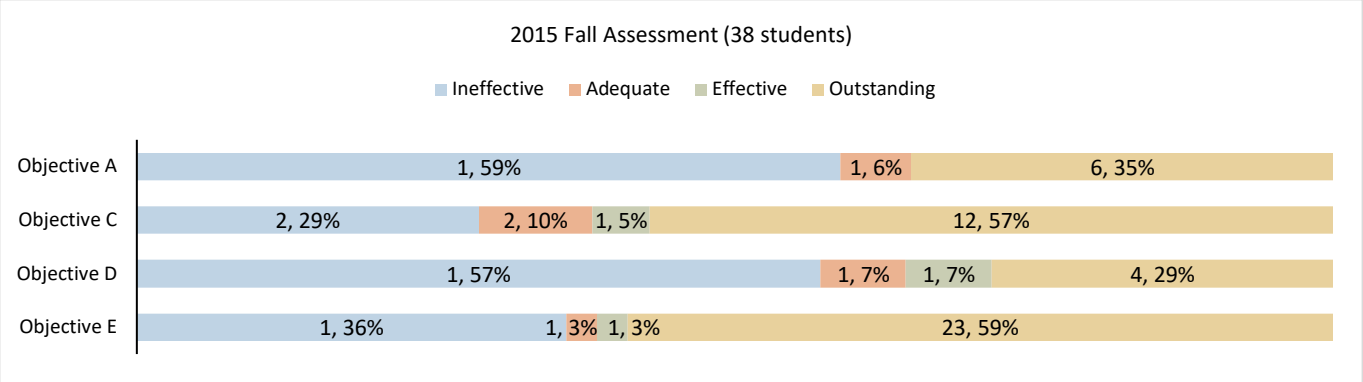
For each assessment rubric objective, the graphs below show the number of students and their percentage for normalization purposes. It also includes the original written analysis, edited for brevity, and corrected if necessary. Additionally, some comments where boldfaced because we consider them useful or relevant.



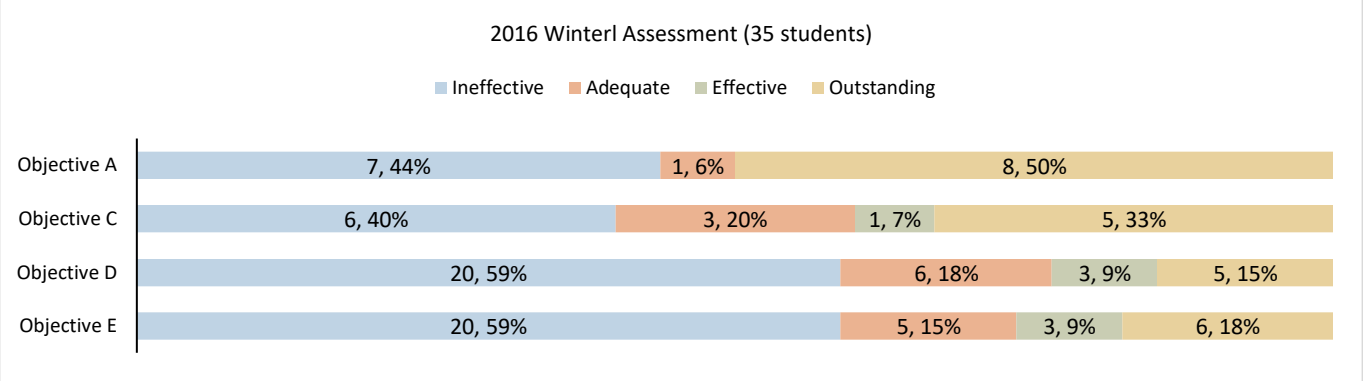
Most students earned either full credit for outstanding knowledge of an objective or received little to no credit for having ineffective knowledge of an objective. For learning objectives B, C, and E more than half of the students received an outstanding mark. For objective D, which is applied word problems, an area notorious for student struggle, the results were mixed with a much better performance in the MATH 1040 assessment than in the MATH 1200 assessment. The most disappointing result is about objective A. More than half of the students were unable to add two fractions together correctly and received an ineffective score in MATH 1040. This is a disappointing result in an otherwise encouraging set of results. The Tutoring and Testing Center has offered to give help sessions on fractions to students in Math 1040 in the past this type of review session should be implemented promptly to improve student performance in this area. As always, word problems should continue to be emphasized since application of mathematics is so crucial in so many areas.



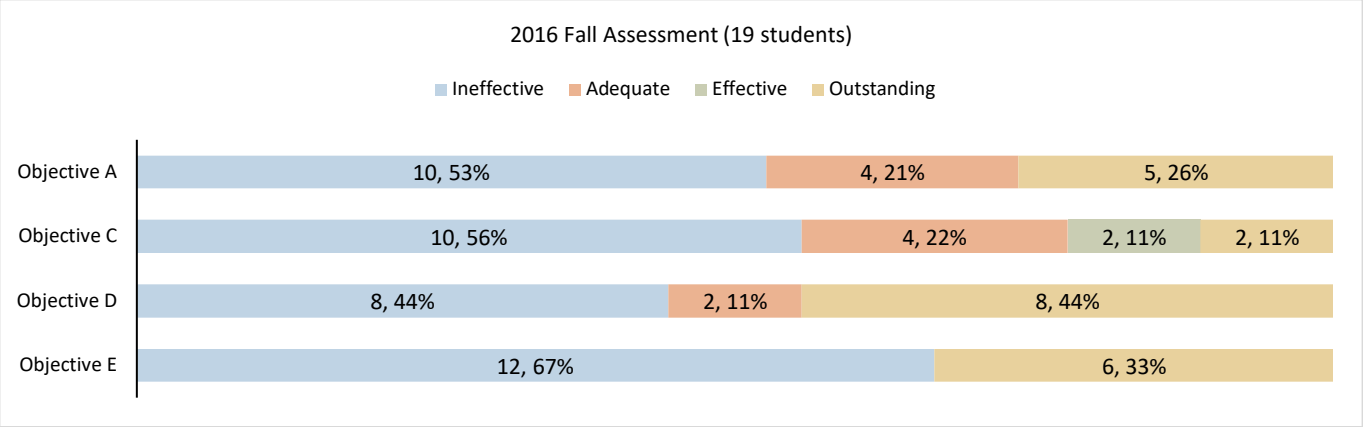
Students performed best in objectives C and E and worst on objectives A and D. Word problems which required their own setup was an area of disappointment and needs improvement going forward. These results mirror those from the Fall 2014 general education assessment. More emphasis needs to be put on teaching and reviewing problems where students have to set up their own equations, function, and graphs. The Tutoring and Testing Center has offered to give help sessions on fractions to students in Math 1040. As always, word problems should continue to be emphasized.



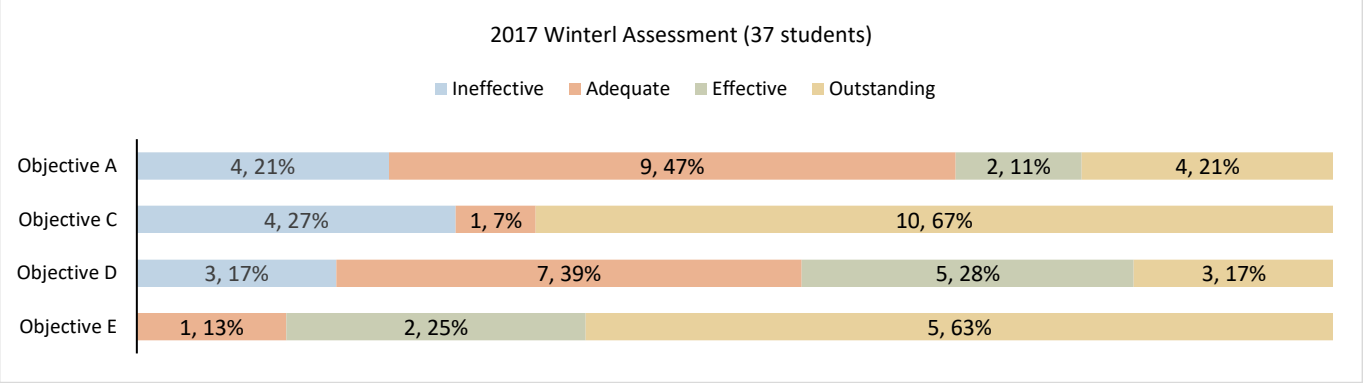
Students performed best in objectives C and E and worst on objectives A and D. Word problems was an area of disappointment and needs improvement going forward. These results mirror those from the Fall 2014 and Winter 2015 general education assessments. More emphasis needs to be put on teaching and reviewing problems where students must set up their own equations, function, and graphs. The Tutoring and Testing Center has offered to give help sessions on fractions to students in Math 1040. As always, word problems should continue to be emphasized.



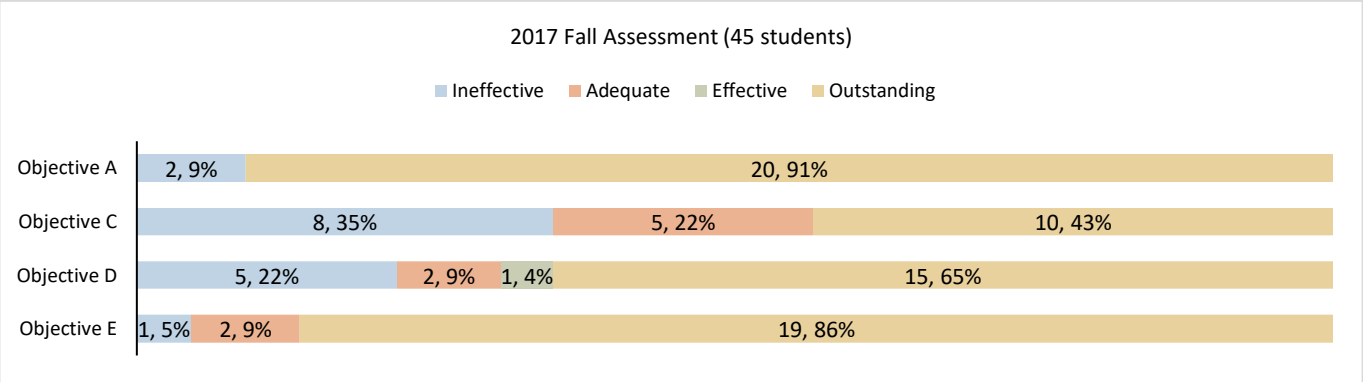
Students performed best in objectives A and C and worst on objectives D and E. Word problems (objective D) was an area of disappointment. These concerns with word problems issues mirror those from the Fall 2014 and Winter 2015 and Fall 2015 general education assessments. More emphasis needs to be put on teaching and reviewing problems where students must set up their own equations, function, and graphs. Objective D performed better in MATH 1200 than 1040 which represents a more mathematically mature student. Objective E saw no difference in the two courses. The Tutoring and Testing Center has offered to give help sessions on fractions to students in Math 1040. This appears to have been beneficial as objective A saw improved performance relative to the other objectives. Word problems should continue to be emphasized. A word problem boot camp has been proposed and should be implemented to help students solve problems in this area. In fact, on the MATH 1040 exam, some students editorialized their dislike for word problems on the test answer sheet in lieu of a correct answer. This is an area of concern, and the mathematics department faculty curriculum committee will brainstorm solutions to this area of critical concern at the first faculty meeting of the fall 2016 semester.



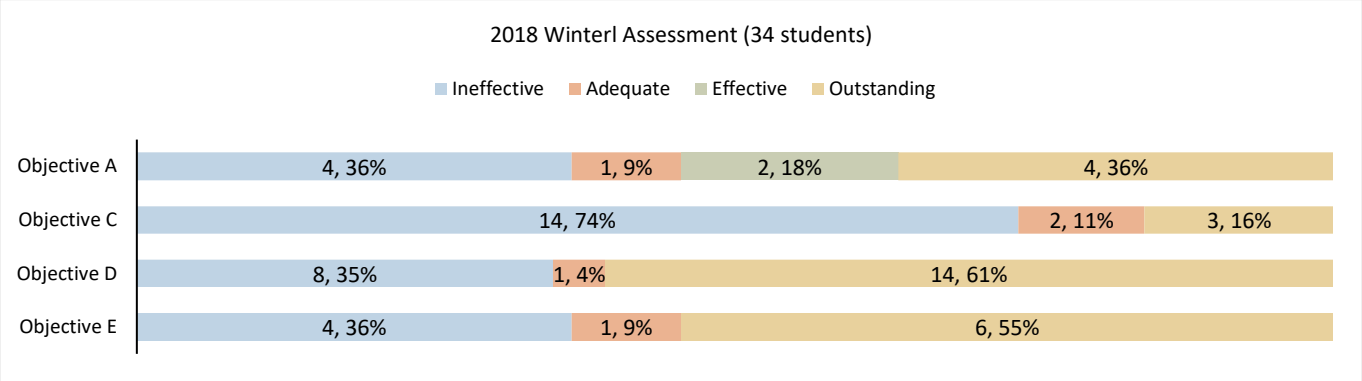
Students performed nearly equally well on all four learning outcomes. Surprising, the word problem solving was the highest scoring outcome which shows an improvement in that area of emphasis. The worst performance was on learning outcome C. The Tutoring and Testing Center has worked with mathematics faculty to emphasize the importance of fractions in solving word and applied problems. That seems to have helped but a return to basics could benefit solving typical problems in the algebra course.



Students performed at the adequate or better level in 82% of the responses evaluated. Performance on the word problems was at a markedly improved outcomes since last year's general education assessment. Student performance on graphing and on rational and fractional expressions was satisfactory. The greatest difficulty students had was not identifying extraneous solutions to problems and leaving those answers in that did not belong. This topic can be re-emphasized during the course in the next semester. The Tutoring and Testing Center has worked with mathematics faculty to emphasize the importance of fractions in solving word and applied problems. A tutorial or workshop could be created on identifying extraneous solutions so that these students get a better understanding of identifying answers that are not actually correct to the question at hand.



Students performed well on each of the four assessed mathematics general education learning outcomes. The greatest outcome increase from prior semesters was in objective A where the score rose from 2.31 in Winter 2017 to 3.73 in Fall 2017. This may be since the course where this objective was assessed was MATH 1040 in Winter 2017 and MATH 1200 in Fall 2017 and students tend to be more mathematically mature in this higher-level course. Great improvement was also seen in learning outcome objective D where the average score of 3.13 was much improved over the 2.44 average for Winter 2017. This is a great improvement in solving word problems and both assessments in Winter 2017 and Fall 2017 are from MATH 1040 so this compares apples to apples. The only one of the four objectives assessed where performance as down in Fall 2017 from Winter 2017 was in objective C which is addressed below. The only one of the four objectives assessed where performance as down in Fall 2017 from Winter 2017 was in objective C. The mathematics faculty will emphasize some learning remediation in MATH 1040 with exponents, logarithms, radicals, and percentages. We will work with the Tutoring and Testing Center to develop strategies to better remediate students who have difficulties in these areas.



Students performed well on three of the four measured objectives. The greatest outcome increase from prior semesters was in objective D and it is unusual that the best performance was on the objective related to solving word problems, which has often been the objective which receives the lowest score. This vast improvement in objective D was countered by a precipitous fall in results in objective C where most of the class struggled with this concept on a final exam after being exposed to this in class for an entire semester. The drop-in performance in objective C will be addressed with an increased emphasis on remediation of these topics during Supplemental Instruction session with SI leaders being assigned to as many MATH 1040 courses as possible in the Fall 2018 semester. We will evaluation the change in performance for Fall 2018 with this SI leader and see if there was a positive outcome difference compared with Winter 2018. But these SI leaders will focus on all areas of the course to increase the performance for all learning objectives.

Science

a. Courses

	BIOL 1040	BIOL 1400	BIOL 1500	CHEM 1300		BIOL 1040	BIOL 1400	BIOL 1500	CHEM 1300
2014 Fall	X		X	X	2016 Fall		X	X	X
2015 Winter		X		X	2017 Winter		X	X	X
2015 Fall	X		X	X	2017 Fall		X	X	X
2016 Winter		X	X	X	2018 Winter		X	X	X

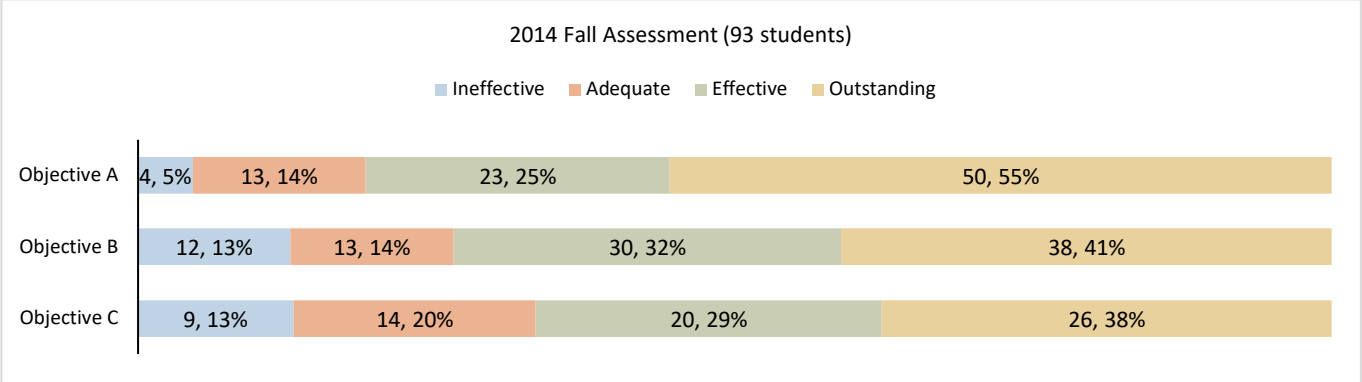
b. Artifacts and course information

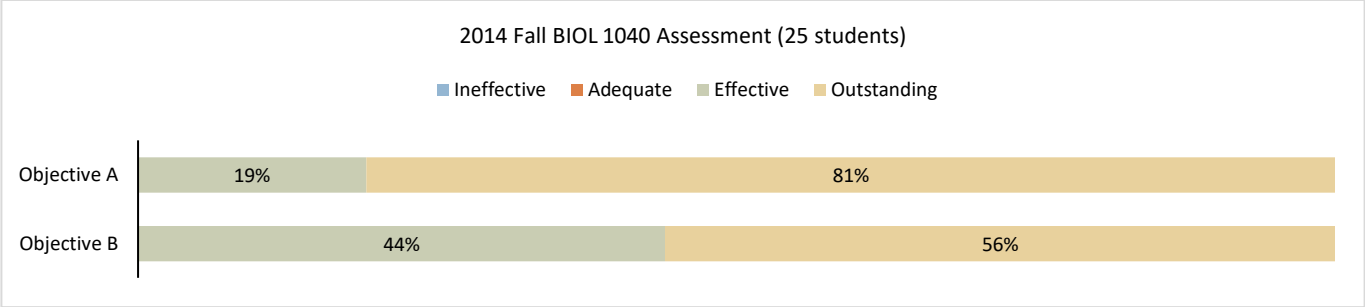
Course	Semester	Year	Sections	Instructors	#Students	Artifacts
BIOL 1040	Fall	2014 - 2015	1DY DY2	Paul Baldauf	25	Literature Review Paper Quiz 1: Define law and hypothesis
BIOL 1500	Fall	2014 - 2015	DA1 DA2	Josh Loomis	37	Osmosis Lab Report; Final Exam: 100 multiple choice questions
CHEM 1300	Fall	2014 - 2015	DA5 DA6	Maria Ballester	32	Questions on 4 Unit tests; 4 questions per test.; Lab Practical

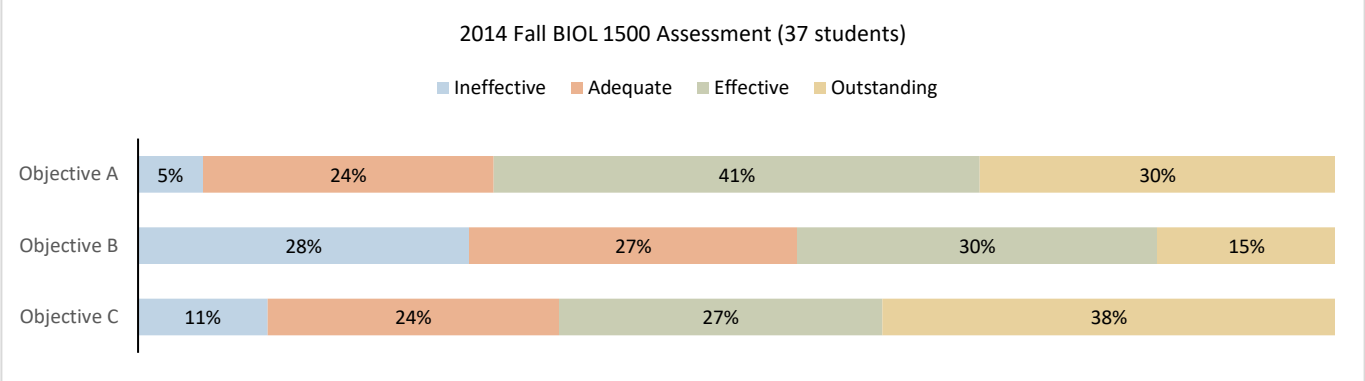
Course	Semester	Year	Sections	Instructors	#Students	Artifacts
BIOL 1400	Winter	2014 - 2015	DA1	Megan Flora	24	Test Questions 1, 2, 3, 4, 5,6, 7, 8, 9, 10, 11, 12; Essay Question
CHEM 1300	Winter	2014 - 2015	DA3 DA4	Song Gao	26	Test 1, Question 1, 2, 3; Test 2, Question 1, 2, 3; Test 3, Question 1, 2, 3; Lab Practical
BIOL 1040	Fall	2015 - 2016	1DY DY2	Paul Baldauf	50	Literature Review Paper; Quiz 1; three questions - hypothesis, theory, and law; M and Ms Candy Color Distribution and Experimental Design Exercise
BIOL 1500	Fall	2015 - 2016	EV3 EV4	Megan Flora	33	Enzyme Lab Report; Final Exam: 100 questions multiple choice
CHEM 1300	Fall	2015 - 2016	DA7 DA8	Jessica Brown	28	Questions on 4 Unit tests; 4 questions per test; Lab Practical
BIOL 1400	Winter	2015 - 2016	DA1	Megan Flora	22	Test Questions; Essay Question
BIOL 1500	Winter	2015 - 2016	EY1	Megan Flora	21	Enzyme Lab Report; Final exam questions
CHEM 1300	Winter	2015 - 2016	DA3 DA4	Song Gao	24	Lab Practical; Questions on 3 Unit tests; 3 questions per test
BIOL 1400	Fall	2016 - 2017	DA1	Megan Flora	39	Questions on Exams. (8 questions total); Artifact 2: Essay Question
BIOL 1500	Fall	2016 - 2017	DA1	Katie Crump	19	Enzyme Lab Report ; Final Exam: 100 questions multiple choice
CHEM 1300	Fall	2016 - 2017	DA3 DA4	Jessica Brown	31	Questions on 4 Unit tests; 2 questions per tests; Questions on 4 Unit tests; 1 question per test 3, 2 questions per tests 1 and 4, and 3 questions per test 2; Lab Practical
BIOL 1400	Winter	2016 - 2017	DA1	Megan Flora	22	Questions on Exams. (8 questions total); Artifact 2: Essay Question
BIOL 1500	Winter	2016 - 2017	DA3	Katie Crump	18	Enzyme Lab Report; Final Exam: 100 questions multiple choice
CHEM 1300	Winter	2016 - 2017	DA3 DA4	Jacilynn Brant	33	Questions on the final ACS exam (GC15FG, 16 questions); Lab Practical
BIOL 1400	Fall	2017 - 2018	NW1	Paul Arena	15	Questions on Exams (8 questions total); Artifact 2: Essay Question
BIOL 1500	Fall	2017 - 2018	DA1	Katie Crump	19	Enzyme Lab Report; Final Exam: 100 questions multiple choice
CHEM 1300	Fall	2017 - 2018	DA9 DAA	Dimitri Giarikos	28	Questions on the final ACS exam (GC15FG, 16 questions); Lab Practical
BIOL 1400	Winter	2017 - 2018	DA1	Gwen Hauer	31	Questions on Exams (8 questions total); Artifact 2: Essay Question
BIOL 1500	Winter	2017 - 2018	DA4	Katie Crump	18	Enzyme Lab Report; Final Exam: 100 questions multiple choice
CHEM 1300	Winter	2017 - 2018	DA5 DA6	Russel Driver	28	Questions on the final ACS exam (GC15FG, 16 questions); Lab Practical

c. Overall Data and Analysis

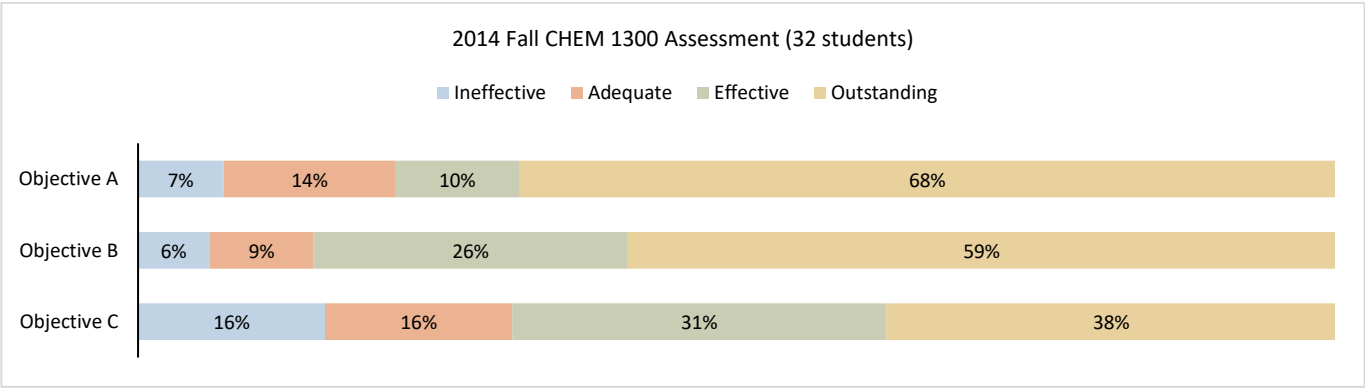
For each assessment rubric objective, the graphs below show the number of students and their percentage for normalization purposes. It also includes the original written analysis, edited for brevity, and corrected if necessary. Additionally, some comments where boldfaced because we consider them useful or relevant.





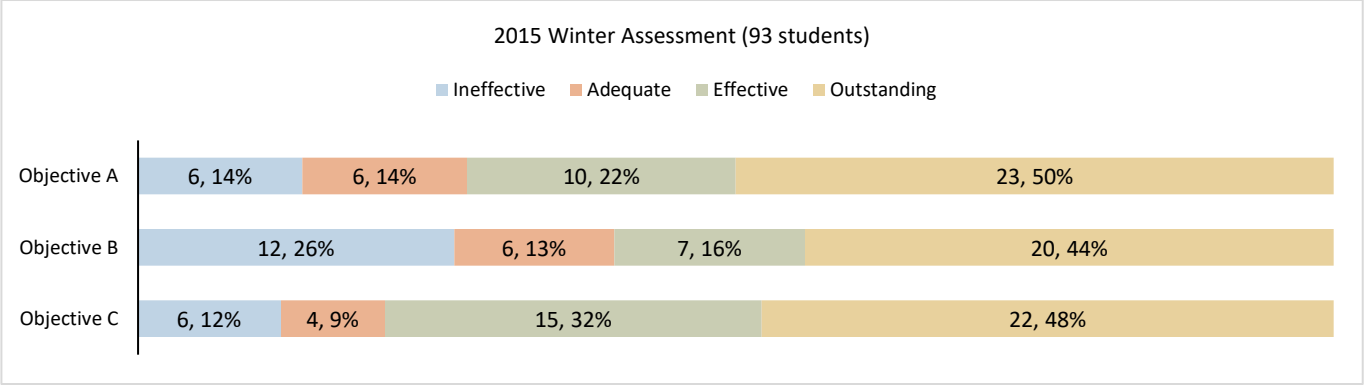


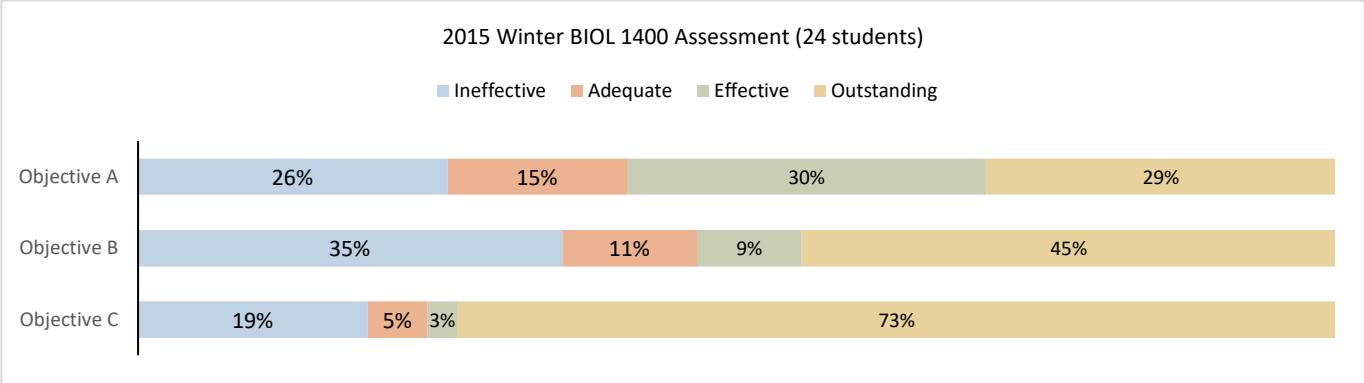
Biology: In general, more students performed at the levels of effective and outstanding. Students generally performed better on assignments in which they were able to prepare for a period of time such as the literature review paper and the biology lab report, compared to the relatively more stressful biology final exam, which is also administered during the relatively stressful final exam week. On average, students performed better on objective A (55% outstanding) and objective C: (38%). The weakest area on average appears to be objective B (27% outstanding).



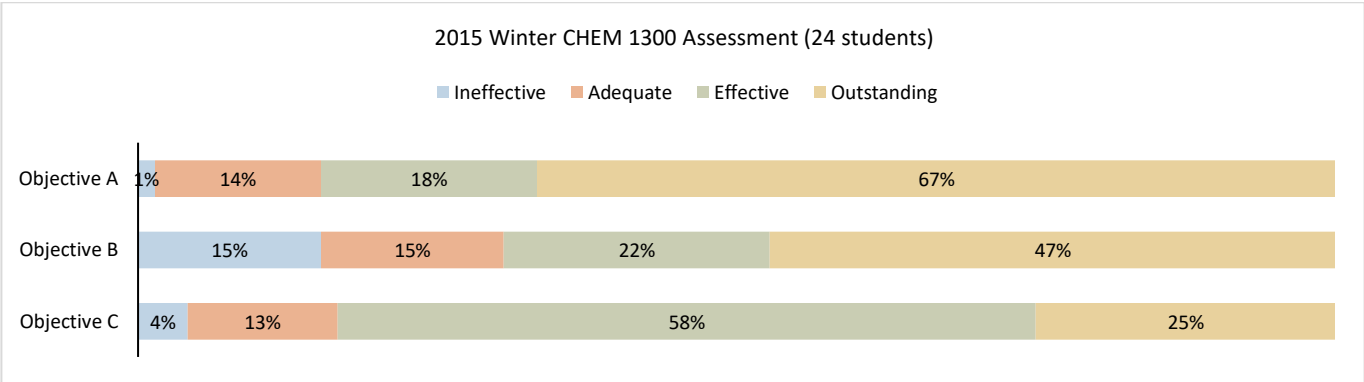
Chemistry: The average score for each artifact was above a 3.0 (over 80%) except for learning outcome C which scored an average of 2.9 (just below the 80%).

- *Objective A*: On average, the scores were above effective (3.4). Students did well with chemical reactivity and equations. The structure, nature, behavior of matter is often a problem area since it is mostly abstract and theoretical. They often had trouble with the different theories of bonding. A large portion of this material also occurs during the last part of the semester, when they are busy with final projects for other classes.
- *Objective B*: On average, the scores were above effective (3.3). The typical student was mathematically prepared enough to handle the simple applied mathematics it required, although, some considerable effort must be made for those who come unprepared or struggle with mathematics.
- *Objective C*: Most students performed well on lab skills. The assessment required them to formulate a hypothesis that relates to a particular experiment they had to perform. Although the result of 2.9 (just below 80%) was the lowest, most of the students understood how to write a hypothesis. Some have difficulties and this might have to be emphasized further.



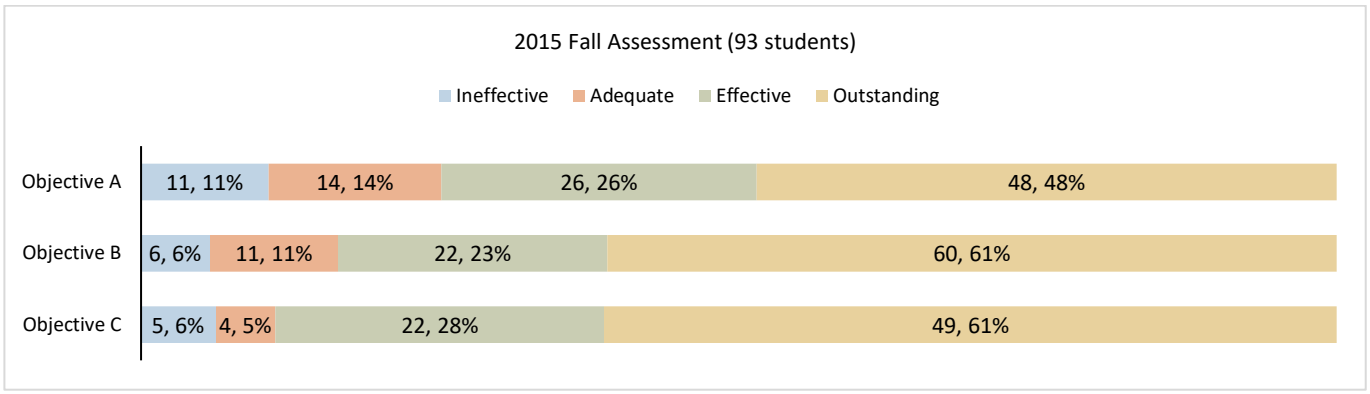


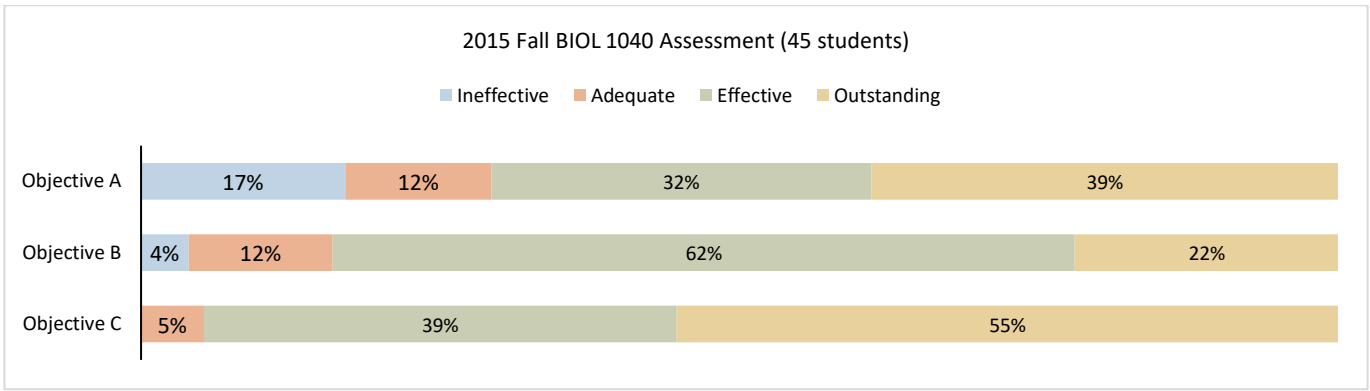
Biology: In general, most of the students performed in the outstanding category or at the ineffective category for the assessments in science (biology) based on the assessments studied in BIOL 1400 DA1 (winter 2015). On average general education students in BIOL 1040 performed better on objective C: formulate a hypothesis that relates to a simple problem or question and design a valid experiment to test it (73.4% outstanding) and objective B: differentiate among facts, laws, theories, and hypothesis (44.6% outstanding). The weakest area on average appears to be objective A (29.2% outstanding).

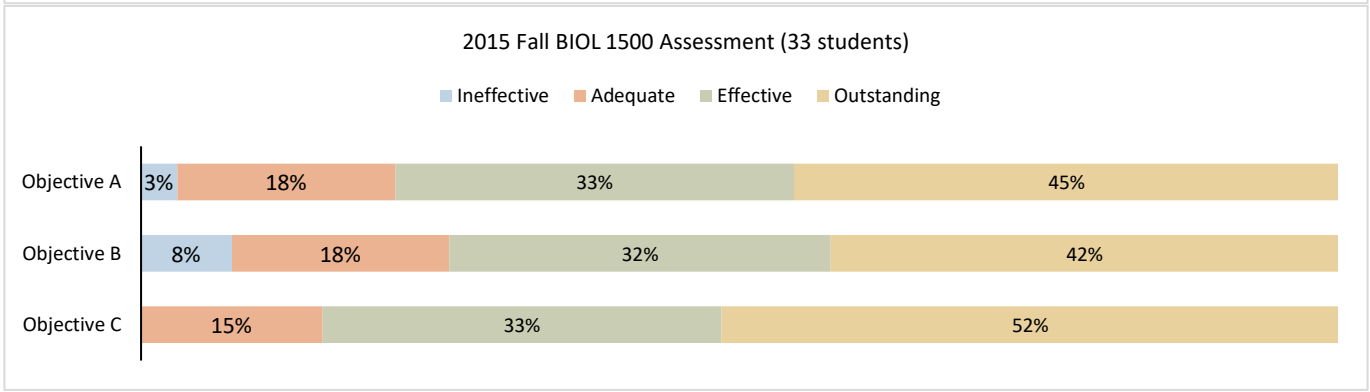


Chemistry: Students generally performed well in the three objectives being assessed. The average score for each artifact was above a 3.0 (over 80%) except for artifact 10 learning outcome B which scored an average of 2.0.

- *Objective A*: On average, the scores were high (3.4 and 4.0). Students did well with chemical reactivity and equations.
- *Objective B*: On average, the scores were high (above a 3.2) except for artifact 10. Students did have difficulties with calculating the molar concentration of an ion in an ionic compound.
- *Objective C*: Most students performed well on lab skills (3.0). The assessment required them to formulate a hypothesis that relates to a particular experiment they had to perform.



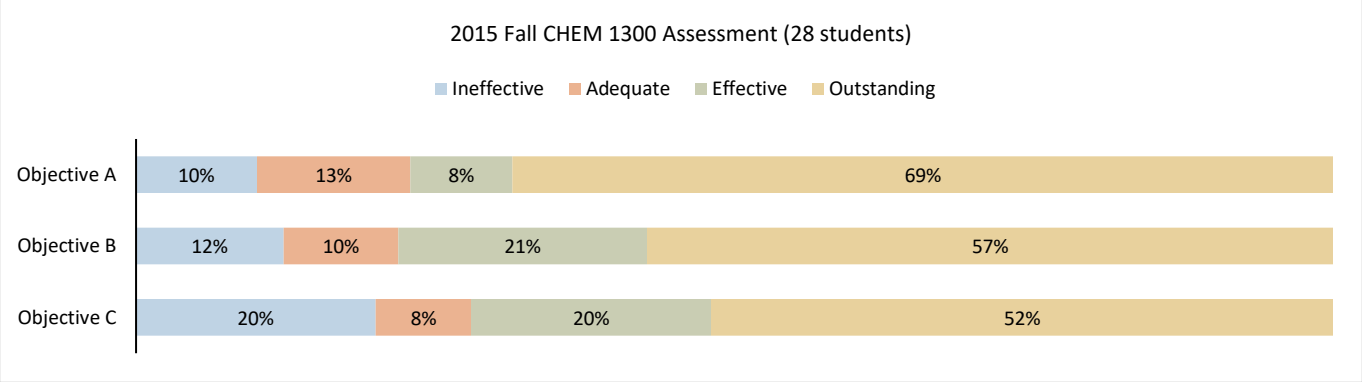




Biology: Scores are considered successful comprehension of the General Education learning outcomes. The final exam for BIOL 1500 is a bit lower due to the rigor being applied. This course is and an important pre-requisite of the Biology major.

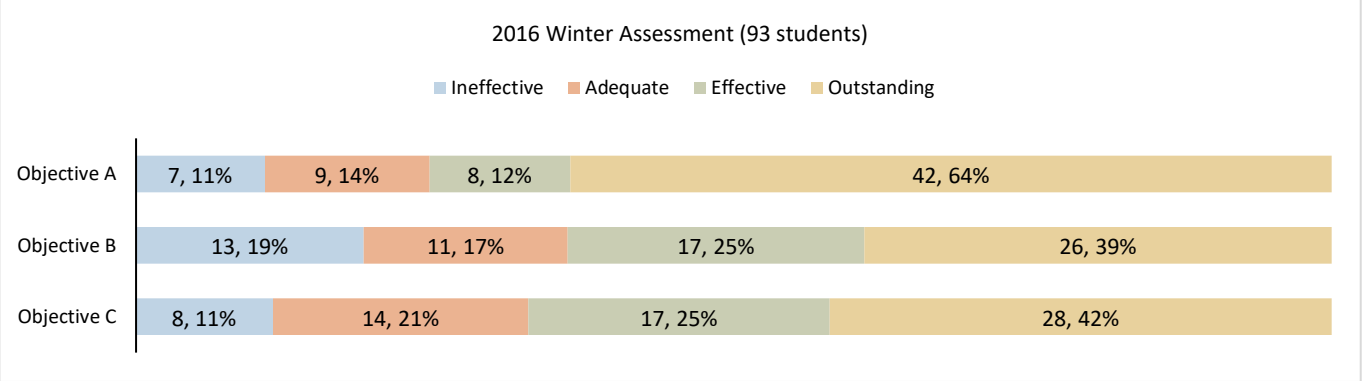
- *Objective A - BIOL 1040 and BIOL 1500*: The average score for both courses was 3.5, the highest of the three objectives for both biology and chemistry courses. Students demonstrated an effective comprehension (>3.0), both by a definition- based quiz (BIOL 1040) and also by a well-written laboratory report where these concepts were effectively addressed.
- *Objective B - BIOL 1040 and BIOL 1500*: The average score was 3.0. It is evident that the students performed generally well both in their literature review assignment (BIOL 1040; Average 3.0) and in their lab report (BIOL 1500; Average 3.2) and by completing their final exam (BIOL 1500; Average 3.0).
- *Objective C - BIOL 1040 and BIOL 1500*: The average score among both courses was 3.45, indicating effective (nearly

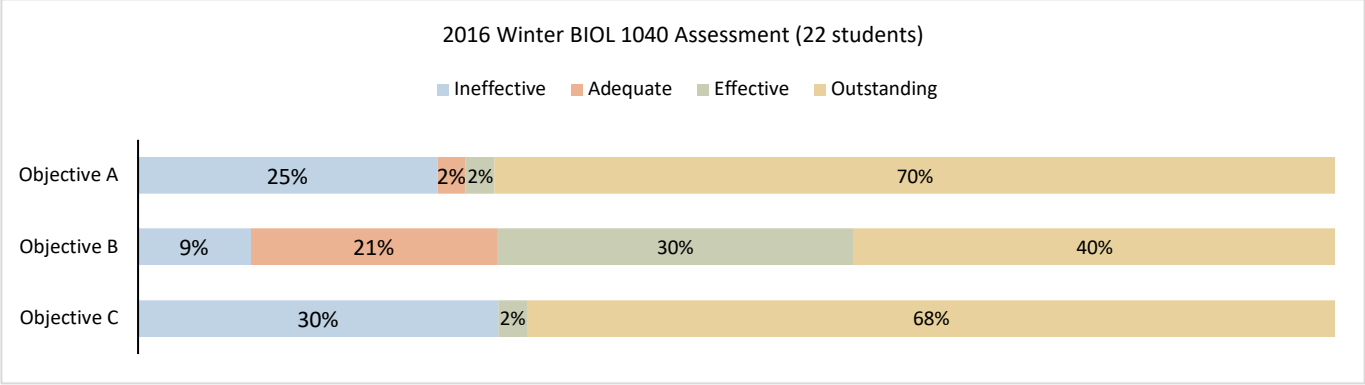
outstanding) performance on this objective. The BIOL 1040 course incorporated a new exercise (The M&M's candy color distribution and experimental design exercise) very successfully teaching students how to formulate hypotheses and design a mechanism to test this hypothesis (average score 3.5). This objective was also well met by the BIOL 1500 laboratory report. However, this would be expected as this lab report is one of many experimental-based exercises in the BIOL 1500 course which has a dedicated lab session (while BIOL 1040 does not).

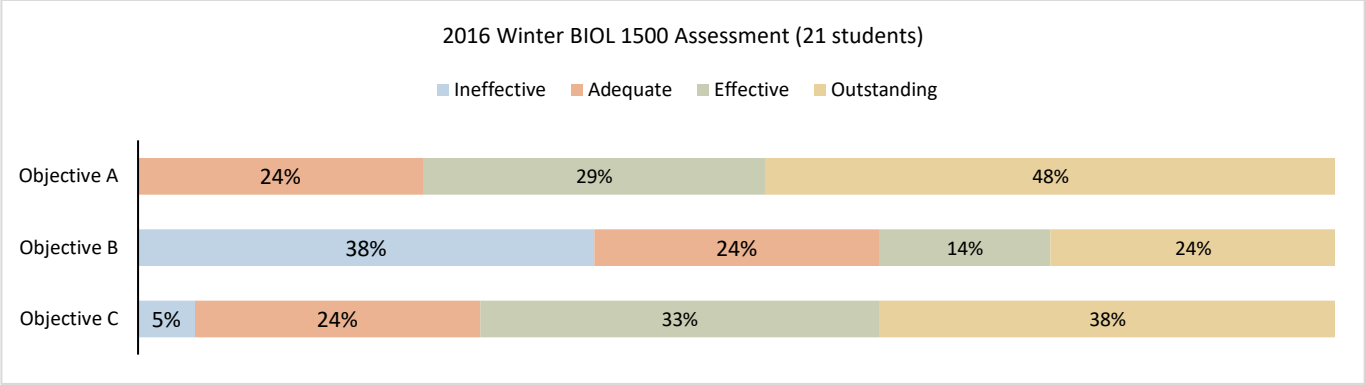


Chemistry: The average score for each objective were indicative of effective or greater comprehension and according to the following scores: 3.4 for Objective A, 3.2 for Objective B, and 3.0 for Objective C. These scores are considered successful comprehension of the General Education learning outcomes.

- *Objective* A: The average score for this Objective was 3.4, the highest for the three objectives. Students demonstrated an effective comprehension (>3.0) for the following facts, laws, theories, and hypotheses: atomic theory, reduction-oxidation, solubility rules, law of thermodynamics, bonding theories, and VSEPR model. The two subjects that students demonstrated a less than effective (<3.0) comprehension were generically defining a law and describing quantum numbers. The test question pertaining to the definition of a scientific law (Exam 1, Question 1) was the first test question they encountered in CHEM 1300. It is possible that the students didn't have a firm grasp on the concept of a scientific law until they encountered it again in later chapters.
- *Objective B*: The average score for this Objective was 3.2. Even though this objective didn't receive the highest score of the three objectives, it is evident that the students performed generally well when employing basic terminology and defining major concepts, principles, and fundamental theories. Questions in this section were more mathematically driven than the questions pertaining to Objective A, and the high scores imply that the students were well prepared to handle calculations in this field of science. Additionally, it is interesting to point out that one question (Exam 3, Question 10) received a less than adequate (<2.0) score. The answers to that question were designed to make the students think creatively and apply their understanding of thermodynamics in a new way; however, this proved to be difficult for them.
- *Objective C*: Nearly 72% of the students were able to formulate a hypothesis and design a valid experiment to solve a proposed question at a level of effective or greater (>3.0). Assessing this objective revealed that students were able to understand that scientific work requires both laboratory skills and theoretical reasoning. It was apparent that composing a well written hypothesis was difficult for students and should probably be incorporated into laboratory experiment write-ups regularly.

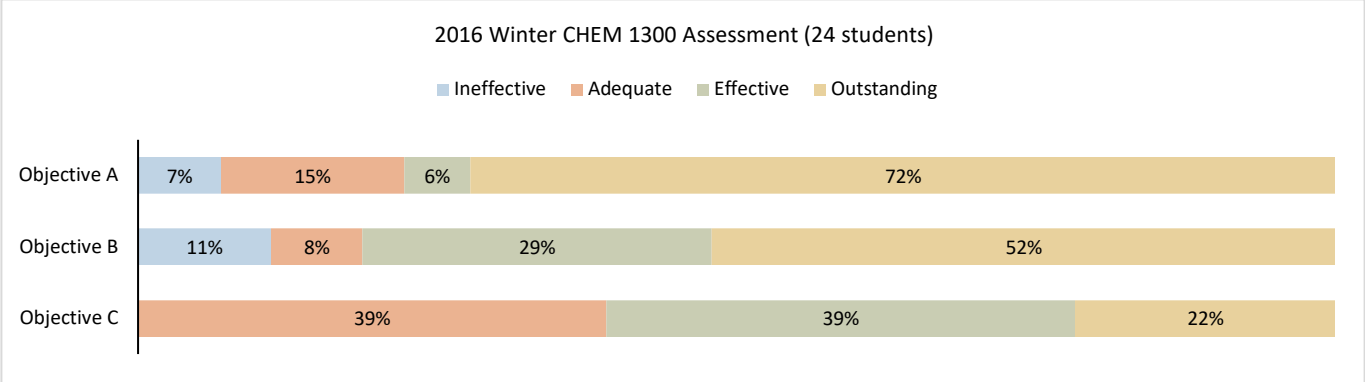






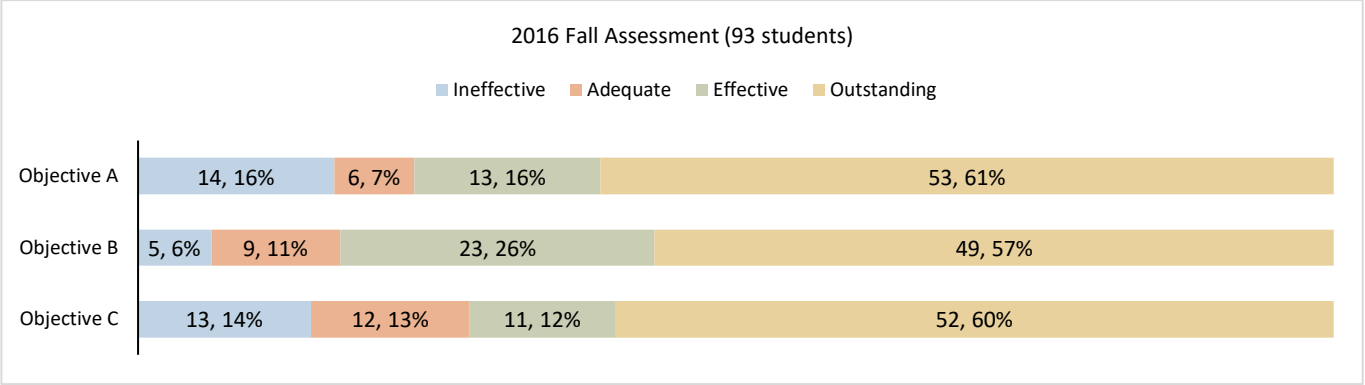
Biology: The average scores for each objective were indicative of adequate - outstanding and according to the following scores (average 2.9 (ranging from 1.2-3.9). The final exam for BIOL 1500 is a bit lower due to a bit more rigor being applied to the BIOL 1500 course. This sample of students performed a bit lower than samples of students from the past. (Fall 2015, average 3.0 for the BIOL 1500 final exam questions). This may also reflect that student taking BIOL 1500 in the winter semester are doing so in the off sequence.

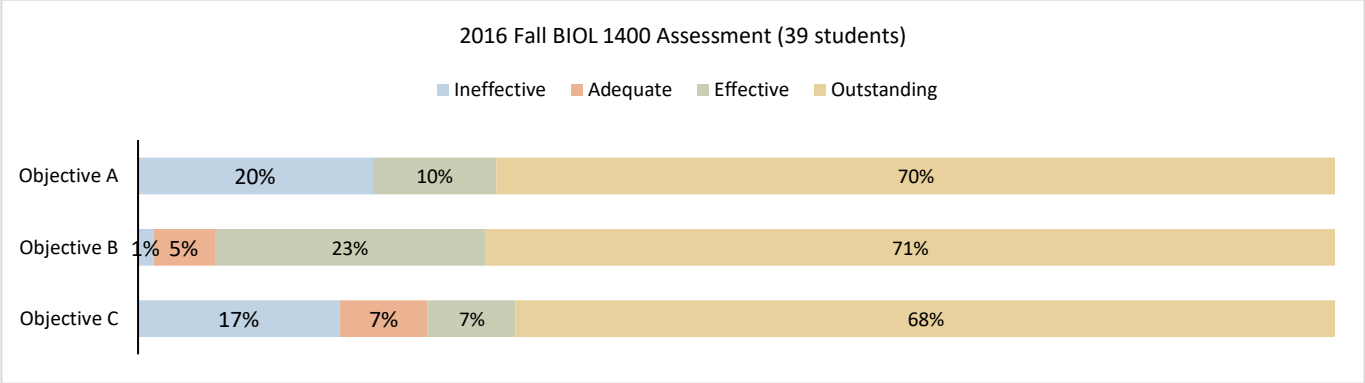
- *Objective A - BIOL 1400 and BIOL 1500*: The average score for this objective across both courses was 3.2, which was the highest for the three objectives for biology courses. Students demonstrated an effective comprehension (>3.0) by test questions and an essay questions assignment in their BIOL 1400 course and by a laboratory report in the BIOL 1500 course.
- *Objective B - BIOL 1400 and BIOL 1500*: The average score for this Objective was 3.07 (when the final exam from BIOL 1500 was not included. However, the average dropped to 2.6 when the final exam from BIOL 1500 was included. It is evident that the students performed generally well in their BIOL 1400 test questions, essay question, and in their BIOL 1500 lab report. They did not score as well when in the final exam for their BIOL 1500 test.
- *Objective C - BIOL 1400 and BIOL 1500*: The average score among both courses for this objective was 3.03, indicating effective performance on this objective. While students scored an average of 2.9 on this objective based on test questions in BIOL 1400, they performed better on the essay question in BIOL 1400 (average 3.2) and the laboratory report in BIOL 1500 (average 3.0). In both the essay question and the laboratory report students had to specifically formulate a null and alternative hypothesis for the study, identify independent and dependent variables, identify, and describe the controls and variables in the study, describe the experimental set-up to test the hypothesis, and explain how a hypothesis for a single study differs from what we understand as established scientific laws and theories.

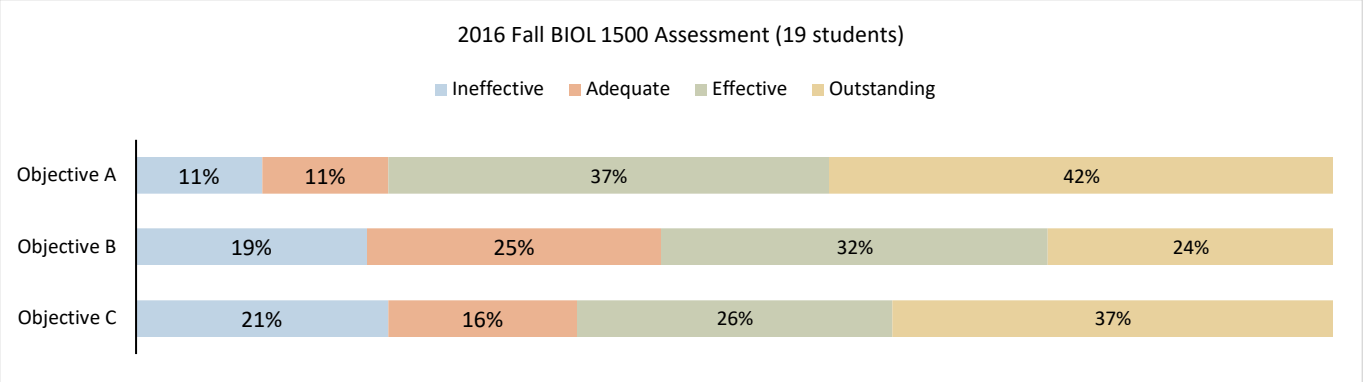


Chemistry: Students generally performed well in the three objectives being assessed. The average score for each artifact was above a 3.0 (over 80%) except for artifact 1 learning outcome C and artifact 5 learning outcome B which scored an average of 2.8 and 2.7 respectively.

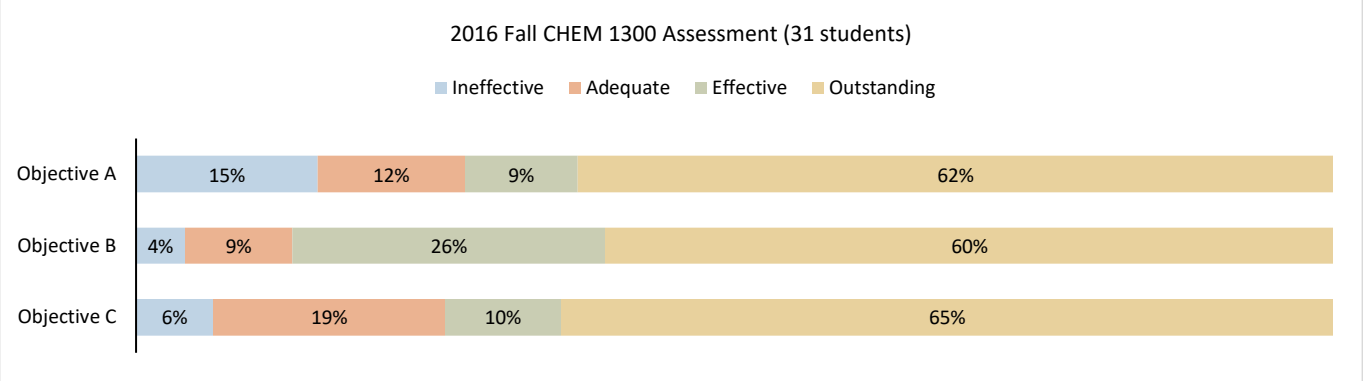
- *Objective A - CHEM 1300*: On average, the scores were high (3.9, 3.0, and 3.4). Students did well with chemical reactivity and equations.
- *Objective B - CHEM 1300*: On average, the scores were high (above a 3.1) except for artifact 5. Students had difficulties with a challenging gas law problem that required calculations and concept understanding.
- *Objective C - CHEM 1300*: Although the result of 2.8 was one of the lowest of the three assessed learning outcomes, most of the students were able to perform well.







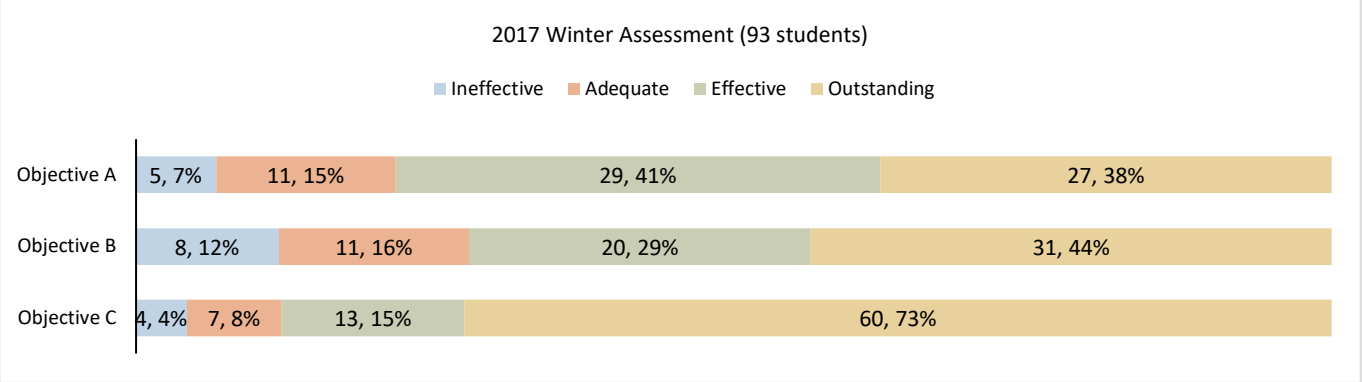
Biology: Students performed higher on the BIOL 1400 test questions which were based on a smaller amount of material and given during the beginning of the semester compared to the relatively more stressful BIOL 1500 final exam. This exam was based on 100 multiple choice questions and administered during the formal final exam week. On average biology students performed better on objective A (60.8% outstanding) and objective C (57.9%). The weakest area on average appears to be objective B (47.4% outstanding).

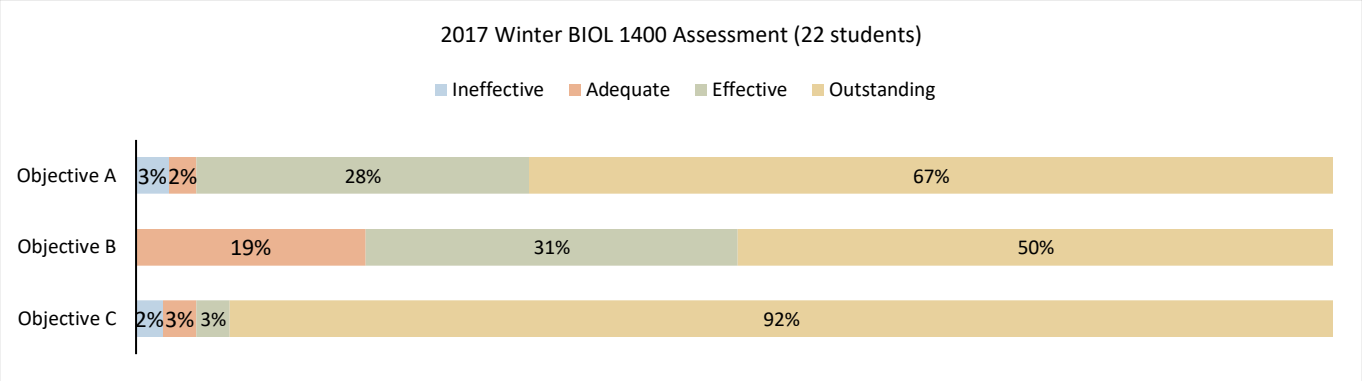


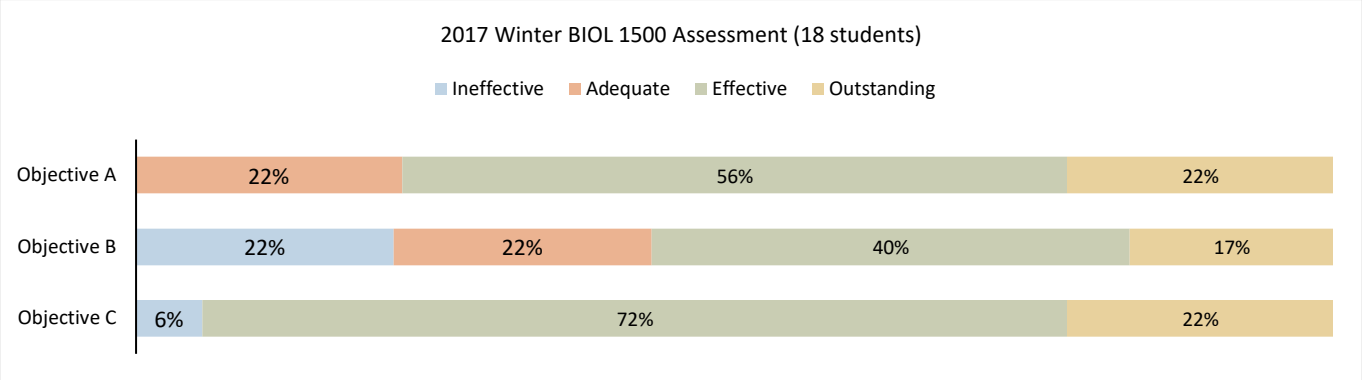
Chemistry: Students performed well in the three objectives being assessed. The average score for each objective were indicative of effective or greater comprehension, according to the following scores: 3.2 for Objective A, 3.4 for Objective B, and 3.2 for Objective C. These scores demonstrate an overall effective comprehension for the General Education learning outcomes.

- *Objective A*: The average score for this Objective was 3.2. Students demonstrated an effective comprehension (>3.0) for the following facts, laws, theories, and hypotheses: scientific law, atomic theory, reduction-oxidation, solubility rules, law of thermodynamics, quantum numbers, and Valence Shell Electron Pair Repulsion (VSEPR) model. The one subject that students demonstrated a less than effective (<3.0) comprehension was metallic bonding theory. Metallic bonding theory is briefly covered in the textbook and lecture, and it is possible students found this concept as insignificant.
- *Objective B*: The average score for this Objective was 3.4, which was the highest for the three objectives. The score for this objective reveals that the students performed generally well when employing basic terminology and defining major concepts, principles, and fundamental theories. Questions in this section were more mathematically driven than the questions pertaining to Objective A, and the high scores imply that the students were well prepared to handle calculations in this field of science. One major improvement since last year was observed with Exam 3, Question 12, which received a score of 1.6 in 2015 and has risen to a score of 3.5 this year (2016). The answers to that question were designed to make the students think critically and apply their understanding of thermodynamics in a new way, and this year it appears the students were able to meet the challenge.
- *Objective C*: Nearly 80% of the students were able to formulate a hypothesis and design a valid experiment to solve a proposed question at a level of effective or greater (>3.0). Assessing this objective revealed that students were able to understand that scientific work requires both laboratory skills and theoretical reasoning. It was apparent, however, that composing a well written hypothesis was difficult for students. Only 47% of students received a score of effective or greater just for the hypothesis. This result indicates that formulating a hypothesis should be incorporated into laboratory

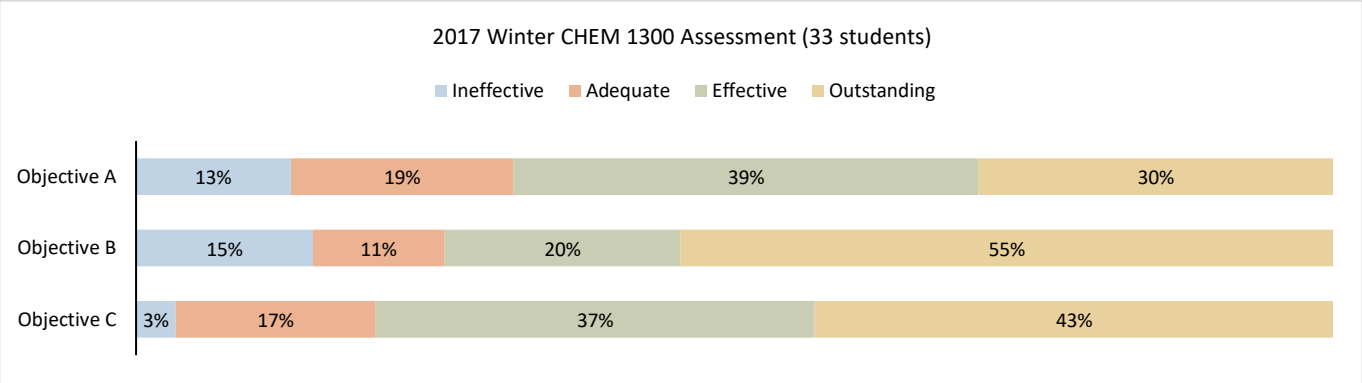
experiment write-ups regularly.





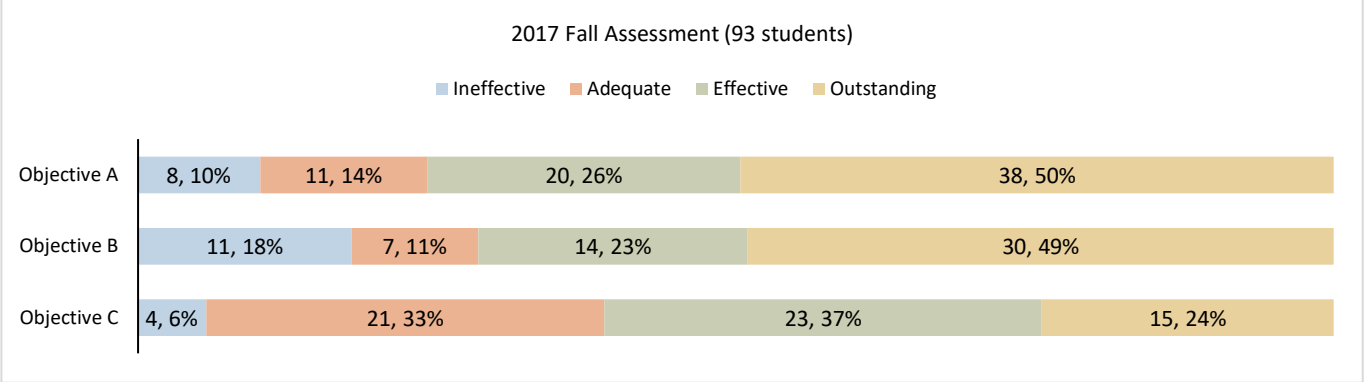


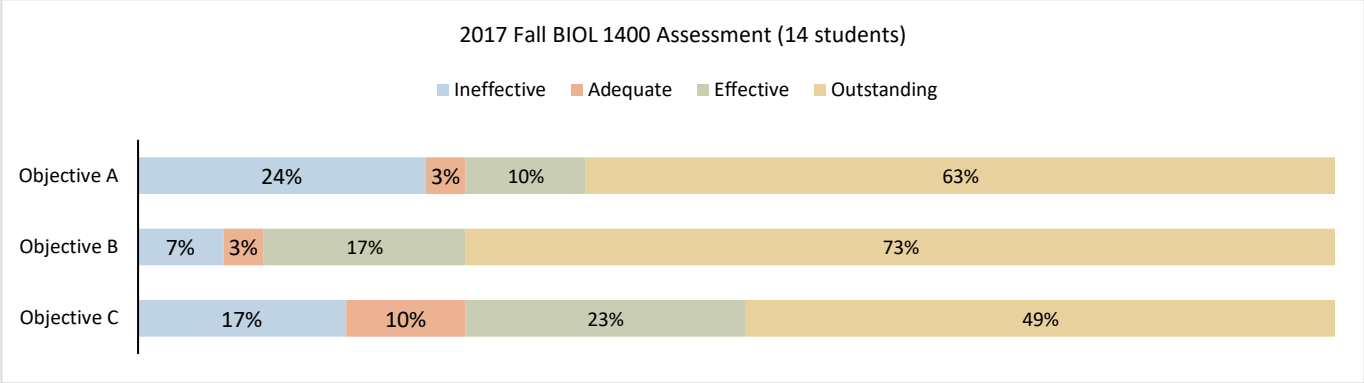
Biology: On average biology students performed better on objective A (52.2% outstanding) and objective C (68.9%). In fact, students have improved in objective C since previous assessment periods. This may be due to more attention being placed on how to write lab reports in the BIOL 1500 class and the institution of supplemental instruction peer leaders as well as graduate teaching assistants. The weakest area on average appears to be objective B (33.4% outstanding).

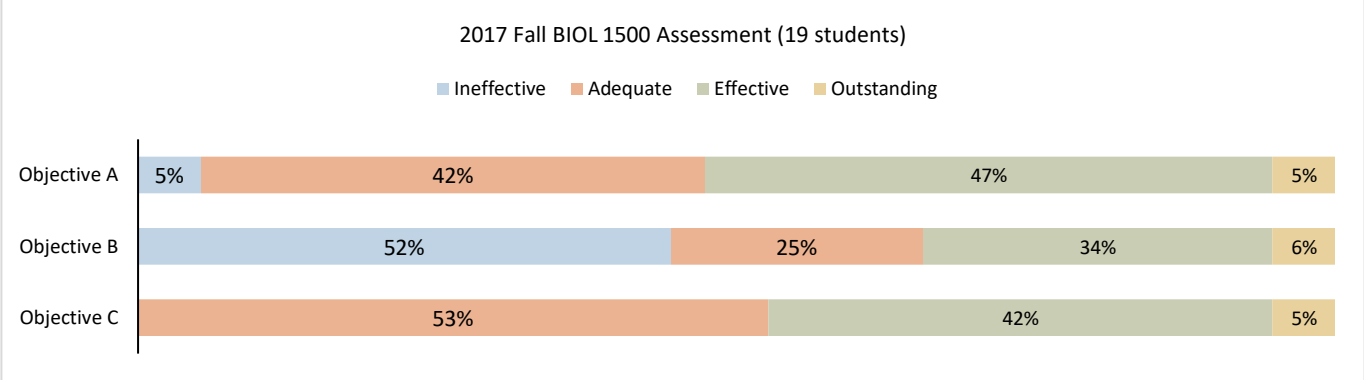


Chemistry: The average score for each objective were indicative of adequate or greater comprehension, according to the following scores: 2.9 for Objective A, 3.1 for Objective B, and 3.3 for Objective C. The ACS exam used was: GC15FG. On objective

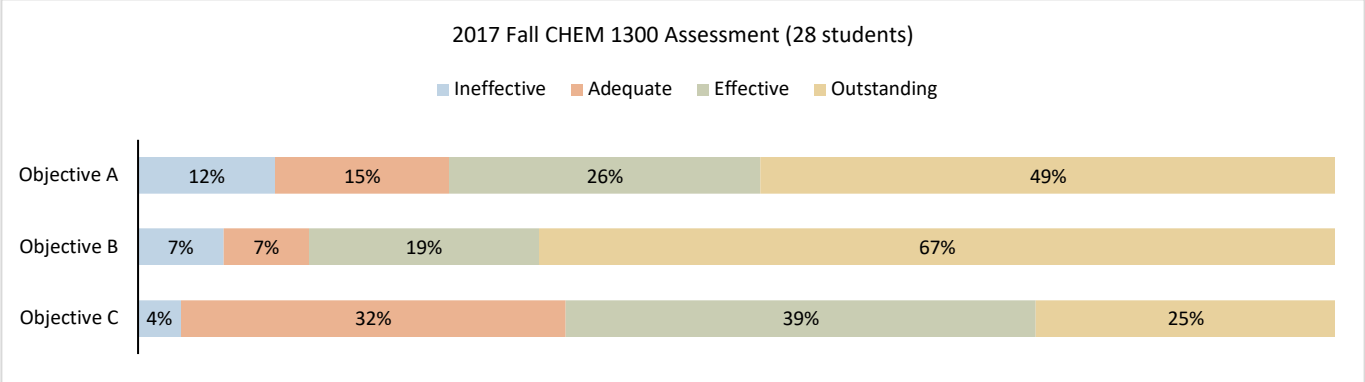
C, 74% of the students were able to formulate a hypothesis at a level of effective or greater (>3.0). Over 70% of the students were able conduct a valid experiment to solve a proposed question at an outstanding level (4.0) as well as understand that scientific work requires both laboratory skills and theoretical reasoning.



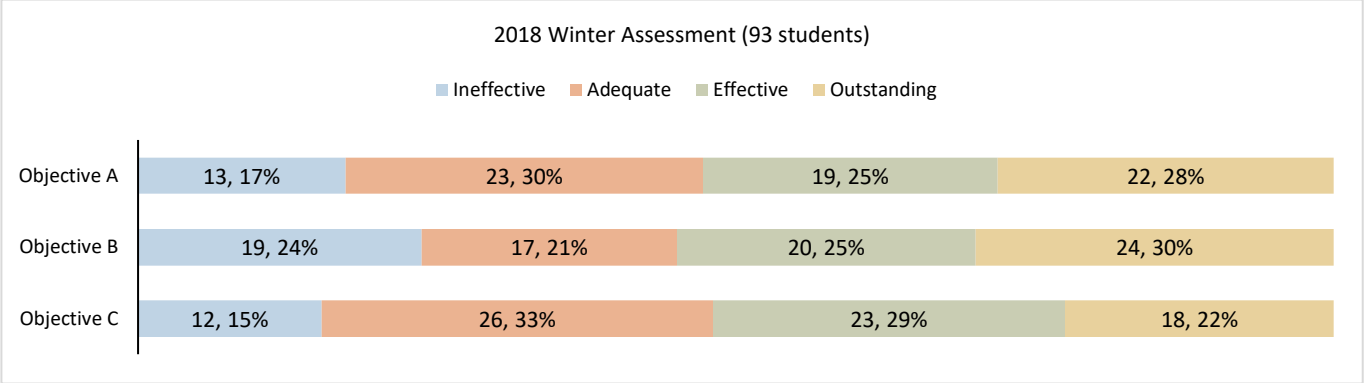


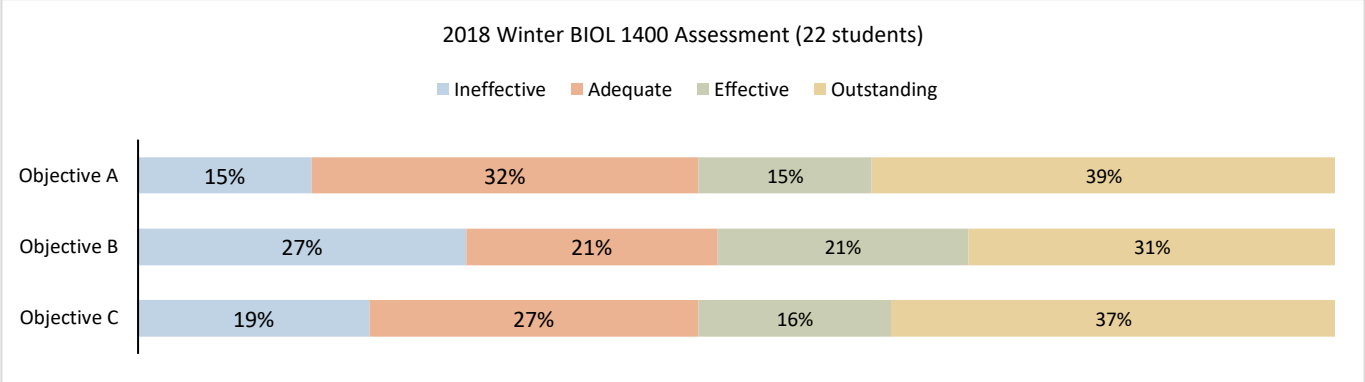


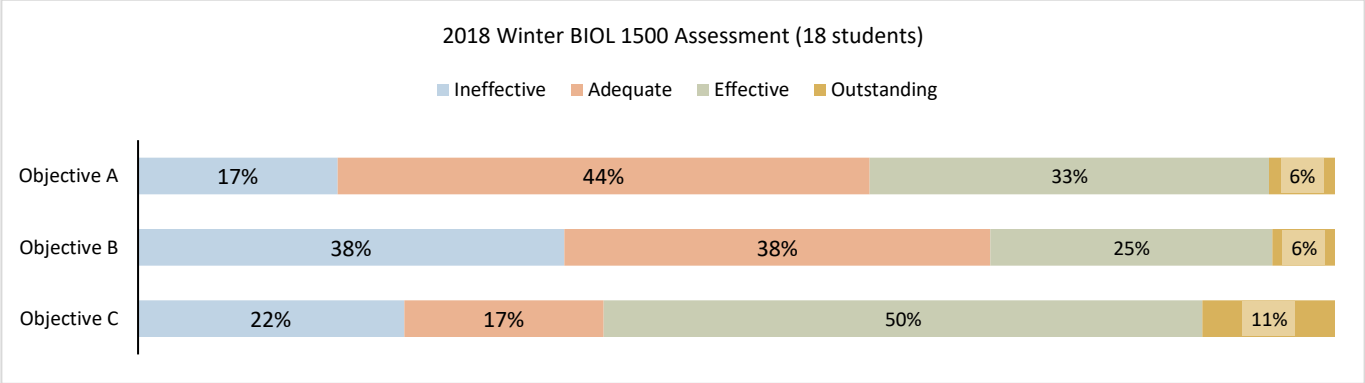
Biology: On average biology students performed better on objective A (43.2% outstanding) and objective B (39.0% outstanding). During this assessment period, students found it more challenging to perform at the outstanding level for objective C (34.6%). Students have improved in objective B since previous assessment periods. This may be due to more attention being placed on how learning the terminology of science especially in the BIOL 1400 classes on their test and essay questions. The weakest area on average appears to be objective B for the BIOL 1500 class (5.3% outstanding) and Objective C (5.3% outstanding). This may be due to challenges in writing lab reports. We will continue to address this by offering the students supplemental instruction sessions and implementing a writing tutor program as part of the NSU QEP program. Write from the Start, in winter 2018.



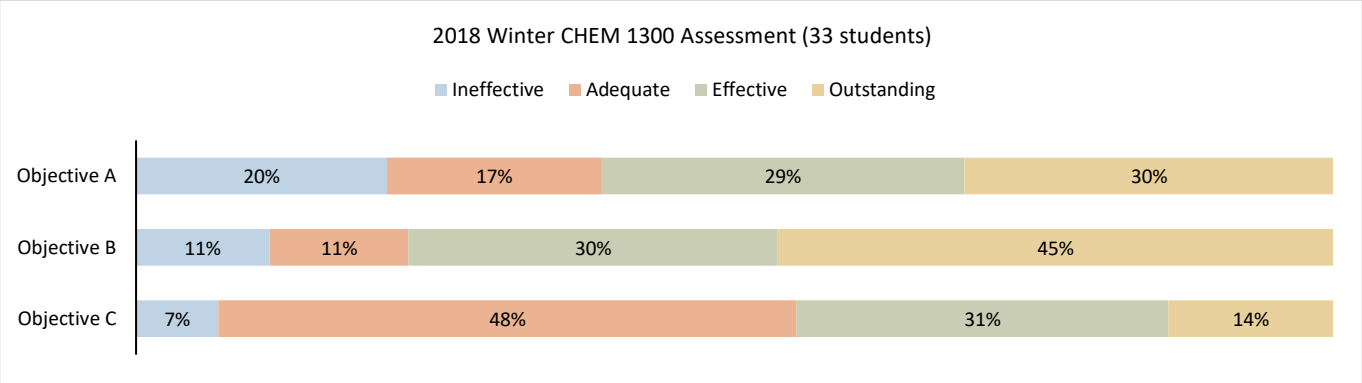
Chemistry: The average score for each objective were indicative of adequate or greater comprehension, according to the following scores: 3.1 for Objective A, 3.5 for Objective B, and 2.9 for Objective C. These scores demonstrate an overall effective comprehension for the General Education learning outcomes. Assessing objective C revealed that 64% of the students were able to formulate a hypothesis at a level of effective or greater (>3.0). 25% of the students were able conduct a valid experiment to solve a proposed question at an outstanding level (4.0) as well as understand that scientific work requires both laboratory skills and theoretical reasoning.







Biology: the highest average scores were found on objective A (27.7%) and objective C (26.5%). Approximately, one-third of the students or higher, performed at the adequate level for all three objectives. The weakest area of the assessment appeared to be objective B (29.8%). This score was particularly low for the BIOL 1500 final exam assessment. More than 75% of the students in BIOL 1500 performed at the adequate level or above for the lab report assignment. This semester students in BIOL 1500 were required to attend the writing center to received individualized support with their writing. This was part of the QEP program Write from the Start. With continued support of writing, we hope to see these scores continue to improve.



Chemistry: The average scores were: 2.7 for Objective A, 3.1 for Objective B, and 2.9 for Objective C. These scores demonstrate a reasonably effective comprehension for the General Education learning outcomes. Assessing this objective C revealed that 44% of the students were able to formulate a hypothesis at a level of effective or greater (greater than or equal to 3.0). 13% of the students were able conduct a valid experiment to solve a proposed question at an outstanding level (4.0) as well as understand that scientific work requires both laboratory skills and theoretical reasoning.

Social and Behavioral Sciences

a. Courses

	ANTH 1020	INST 1500	POLS 1200	POLS 2010	PSYC 1020	SOCL 1020
2014 Fall			X		X	X
2015 Winter	X			X	X	
2015 Fall			X		X	X
2016 Winter						
2016 Fall						
2017 Winter	X	X				X
2017 Fall		X	X			X
2018 Winter	X		X			X

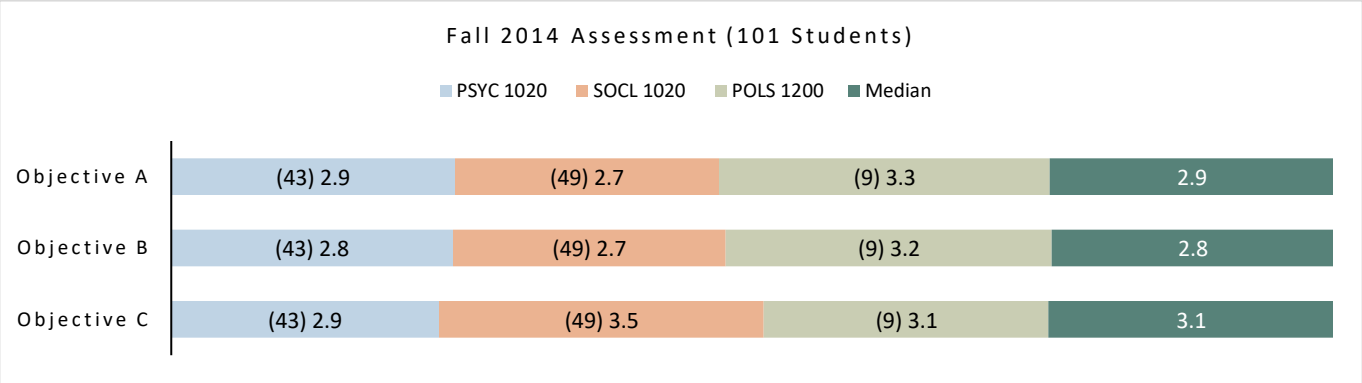
b. Artifacts and course information

Course	Semester	Year	Sections	Instructors	#Students	Artifacts
POLS 1200	Fall	2014 - 2015	EV1	Nelson Bass	9	Essay
PSYC 1020	Fall	2014 - 2015	DA6	Madhavi Menon	27	APA style literature review paper
PSYC 1020	Fall	2014 - 2015	DA7	Leanne Boucher	16	Paper / topics covered in class
SOCL 1020	Fall	2014 - 2015	1DY	Joyce Avotri	27	Paper
SOCL 1020	Fall	2014 - 2015	2DY	Eileen Smith-Cavros	27	Newspaper article assignment
ANTH 1020	Winter	2014 - 2015	DY1	Tom DiVito	8	Essay
POLS 2010	Winter	2014 - 2015	EV1	Stephen Ross Levitt	16	Essay
PSYC 1020	Winter	2014 - 2015	NW1	Tim Razza	17	Essay
POLS 1200	Fall	2015 - 2016	DA1	Nelson Bass	7	7 papers
PSYC 1020	Fall	2015 - 2016	DA4	Tim Razza (maybe)	23	Essay
SOCL 1020	Fall	2015 - 2016	2DY	Cavanaugh	1	Thesis/defense paper #4.

Course	Semester	Year	Sections	Instructors	#Students	Artifacts
ANTH 1020	Winter	2016 - 2017	DY1	Tom DiVito	26	26 artifacts
INST 1500	Winter	2016 - 2017	1DY	Ransford Edwards	15	15 artifacts
SOCL 1020	Winter	2016 - 2017	DY2	Joyce Avotri-Wuaku	18	18 artifacts
INST 1500	Fall	2017 - 2018	DA1	Nelson Bass	10	10 artifacts
POLS 1200	Fall	2017 - 2018	DA1	Ransford Edwards	10	10 artifacts
SOCL 1020	Fall	2017 - 2018	1DY	Eileen Smith-Cavros	28	28 artifacts
ANTH 1020	Winter	2017 - 2018	DY1	Jessie Luella Johanson	21	21 artifacts
POLS 1200	Winter	2017 - 2018	DA1	Ransford Edwards	10	10 artifacts
SOCL 1020	Winter	2017 - 2018	2DY	Eileen Smith-Cavros	28	28 artifacts

c. Overall Data and Analysis

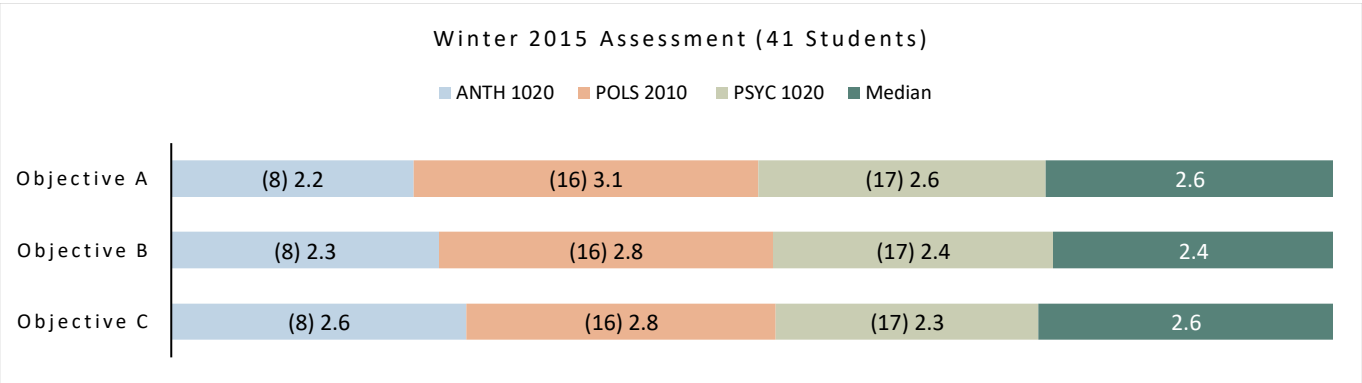
For each assessment rubric objective, the graphs below show the number of students (in parenthesis), the score per course, and the median for all courses (the number that best represents the *typical* score). It also includes the original written analysis, edited for brevity, and corrected if necessary. Additionally, some comments where boldfaced because we consider them useful or relevant.



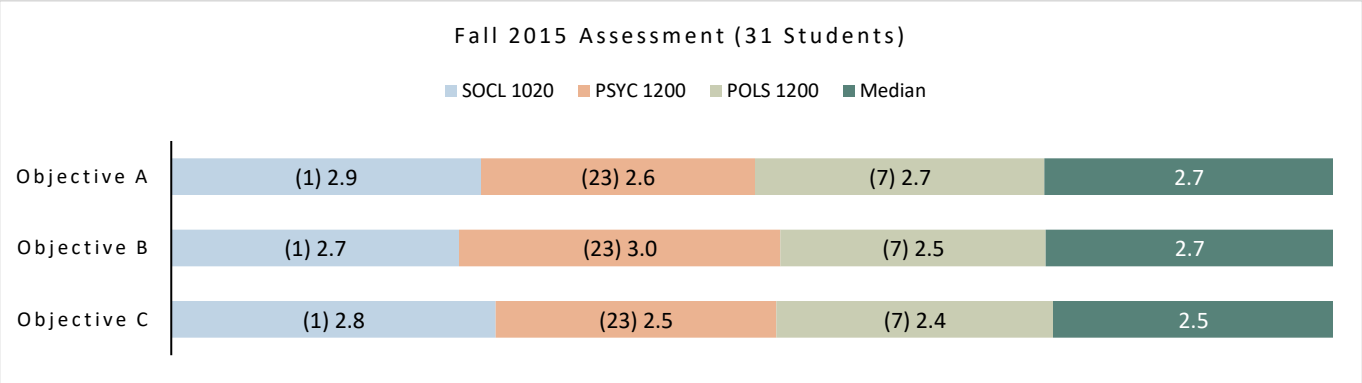
Additional data will need to be generated and evaluated before firm conclusions can be drawn regarding the effectiveness of this rubric in assessing the general education social and behavioral sciences learning outcome. An initial target of 2.5 was arbitrarily set as an indicator that students met the objectives of the general education social and behavioral sciences learning outcome. Reviewing the average rating across reviewers on the rubric of each class that was assessed, and the overall summary of all classes assessed, it would appear that students are meeting the general education social and behavioral sciences learning outcome and its three objectives.

Since general education learning outcomes are new and this is the first time that this rubric was used to assess these standards, each of the reviewers was also asked for their feedback on the process. They provided the following comments/suggestions:

- Rubric items were easy to interpret, and the rubric was easy to use.
- Artifacts that were longer (i.e., 3-6 pages) were easier to evaluate that shorter (i.e., 1-2 pages) artifacts.
- Evaluating artifacts of varying lengths made it difficult to apply the rubric consistently across artifacts.

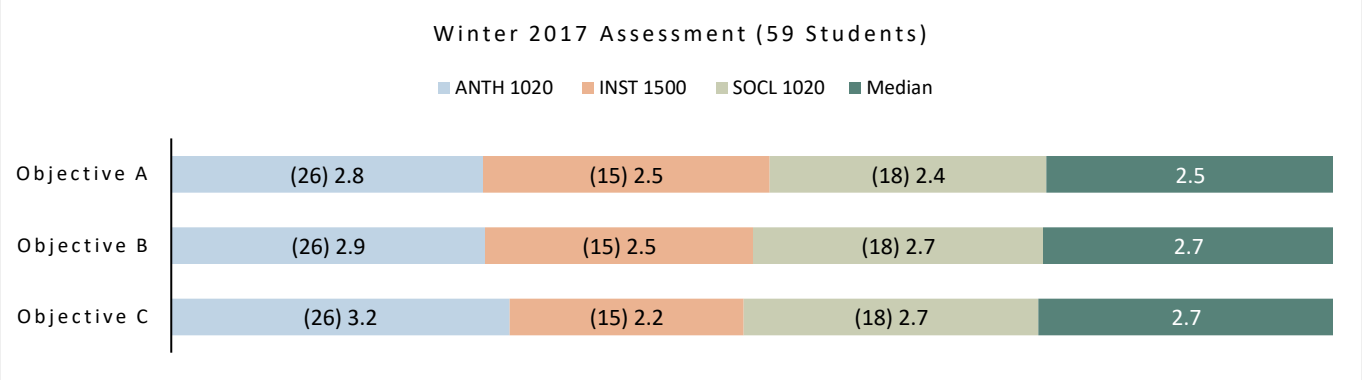


The division previously adopted an average score of 2.5 (per objective) as the cutoff for an indication that a student had satisfied the general education social and behavioral sciences learning outcomes. By this criterion, the learning outcome is satisfactorily met in 62.6% of all evaluations. It does appear that most students are meeting the social and behavioral sciences learning outcome. However, the overall rate of success (62.6%) leaves considerable room for improvement, particularly in meeting objective B of the grading rubric (which is satisfied 49.6% of the time).

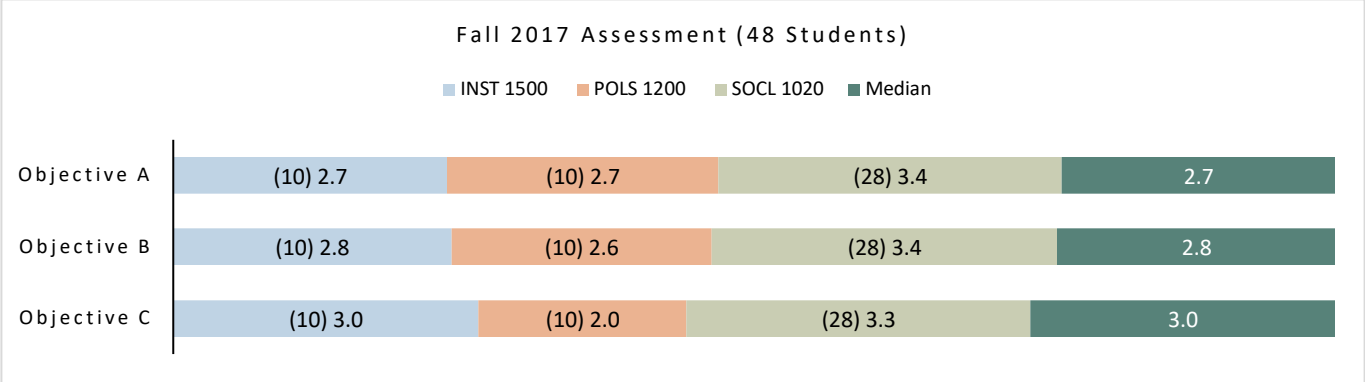


SOCL 1020: The selection of a 3-page paper was consistent with the feedback provided by the reviewers who had noted: (1) Artifacts that were 3-6 pages were easier to evaluate than 1–2-page artifacts; and (2) Evaluating artifacts of varying lengths made it difficult to apply the rubric consistently across artifacts. Thus, the selection of a 3-page paper provided both the necessary length and consistency for effective evaluation. Given the positive feedback, the 2014 rubric was used for the 2015-2016 assessment. Consisted with the 2014-2015 general education assessment process, a target of 2.5 was set as an indicator that students met the objectives of the general education social and behavioral sciences learning outcome. Reviewing the average rating across reviewers on the rubric of the artifact that was assessed, and the overall summary of the learning objectives assessed, it would appear that students are meeting the general education social and behavioral sciences learning outcome and its specific objectives.

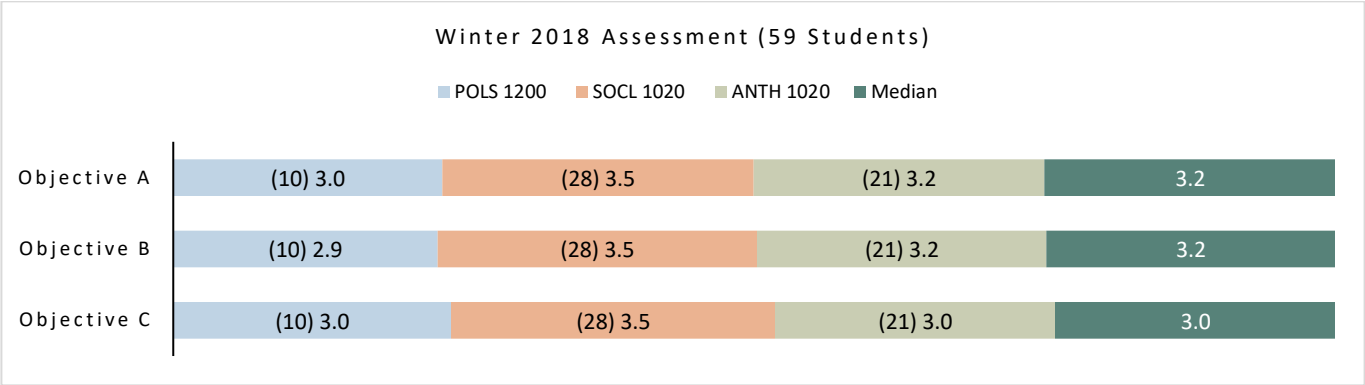
No other analysis was given for the other two courses. However, it appears that these courses met their target of 2.5 for all assessed objectives, except for objective C which seems more problematic than the rest.



Based on the above data, the reviewers rated average student performance on each objective between adequate and effective based on the rubric. The total average across all courses for Objective A was 2.5, the total average across all courses for Objective B was also 2.7, and the total average across all courses for Objective C was also 2.7. There do not seem to be any particular patterns that would suggest specific areas for improvement. Departments will review and discuss general education assessment results and the integration of general education outcomes in lower-level courses. Feedback from the University team assessing the results of the general education assessment is also recommended.



The total average across all courses for Objective A was 2.7, the total average across all courses for Objective B was 2.8, and the total average across all courses for Objective C was 3.0. There do not seem to be any patterns that would suggest specific areas for improvement.



The total average across all courses for Objective A was 3.2, the total average across all courses for Objective B was 3.2, and the total average across all courses for Objective C was 3.0. There do not seem to be any patterns that would suggest specific areas for improvement.

Written Composition

a. Courses

	COMP 2000
2014-2015 Fall	X
2014-2015 Winter	X
2015-2016 Fall	X
2015-2016 Winter	X

	COMP 2000
2016-2017 Fall	X
2016-2017 Winter	X
2017-2018 Fall	X
2017-2018 Winter	X

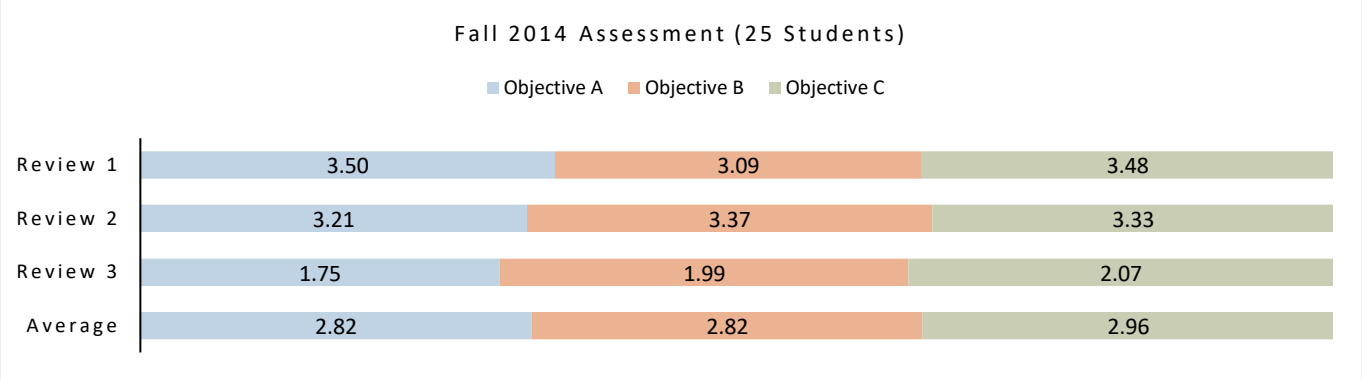
b. Artifacts and course information

Course	Semester	Year	Sections	Instructors	#Students	Artifacts
COMP 2000	Fall	2014 - 2015	DA3, DA4	Eric Mason	25	25 Drafts and 25 Final Paper
COMP 2000	Fall	2014 - 2015	DAA, DAB	Kevin Dvorak	25	25 Drafts and 25 Final Paper
COMP 2000	Fall	2014 - 2015	DA8, DA9	Star Vanguri	25	25 Drafts and 25 Final Paper
COMP 2000	Winter	2014 - 2015	?	Kelly Concannon	28	28 drafts of final papers and 28 final papers
COMP 2000	Winter	2014 - 2015	?	Eric Mason	28	28 drafts of final papers and 28 final papers
COMP 2000	Winter	2014 - 2015	?	Juliette Kitchens	28	28 drafts of final papers and 28 final papers
COMP 2000	Winter	2014 - 2015	?	Shanti Bruce	28	28 drafts of final papers and 28 final papers
COMP 2000	Winter	2014 - 2015	?	Molly Scanlon	28	28 drafts of final papers and 28 final papers
COMP 2000	Fall	2015 - 2016	?	Unknown	24	24 drafts of final papers and 24 final papers
COMP 2000	Fall	2015 - 2016	?	Unknown	24	24 drafts of final papers and 24 final papers
COMP 2000	Fall	2015 - 2016	?	Unknown	24	24 drafts of final papers and 24 final papers

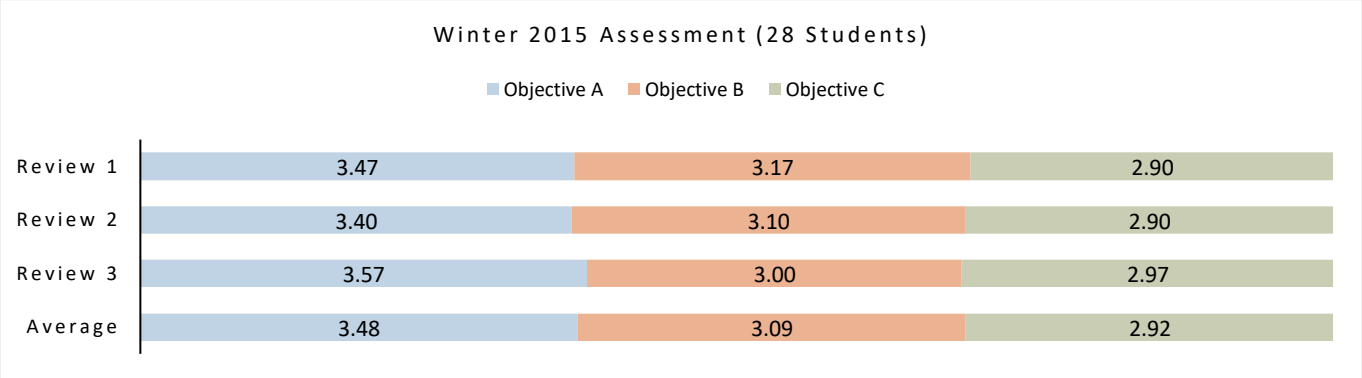
Course	Semester	Year	Sections	Instructors	#Students	Artifacts
COMP 2000	Fall	2015 - 2016	?	Unknown	24	24 drafts of final papers and 24 final papers
COMP 2000	Fall	2015 - 2016	?	Unknown	24	24 drafts of final papers and 24 final papers
COMP 2000	Fall	2016 - 2017	?	Efrat Friedman	38	38 Formative + 43 Summative Assignments
COMP 2000	Fall	2016 - 2017	?	Juliette Kitchens	38	38 Formative + 43 Summative Assignments
COMP 2000	Fall	2016 - 2017	?	Eric Mason	43	38 Formative + 43 Summative Assignments
COMP 2000	Winter	2016 - 2017	4	Billy Jones	94	Drafts of final papers; Final papers
COMP 2000	Winter	2016 - 2017	4	Juliette Kitchens	94	Drafts of final papers; Final papers
COMP 2000	Winter	2016 - 2017	4	Eric Mason	94	Drafts of final papers; Final papers
COMP 2000	Winter	2016 - 2017	4	Molly Scanlon	94	Drafts of final papers; Final papers
COMP 2000	Fall	2017 - 2018	3	Juliette Kitchens	65	Drafts of final papers; Final papers
COMP 2000	Fall	2017 - 2018	3	Jose Macia	65	Drafts of final papers; Final papers
COMP 2000	Fall	2017 - 2018	3	Eric Mason	65	Drafts of final papers; Final papers
COMP 2000	Winter	2017 - 2018	5	Star Vanguri	144	Drafts of final papers; Final papers
COMP 2000	Winter	2017 - 2018	5	Molly Scanlon	144	Drafts of final papers; Final papers
COMP 2000	Winter	2017 - 2018	5	Mario D'Agostino	144	Drafts of final papers; Final papers
COMP 2000	Winter	2017 - 2018	5	Jamie Johnson	144	Drafts of final papers; Final papers
COMP 2000	Winter	2017 - 2018	5	Billy Jones	144	Drafts of final papers; Final papers

c. Overall Data and Analysis

For each assessment rubric objective, the graphs below show the score per objective given by the reviewers. In some instances, a combination of reviewers was used. It also includes the original written analysis, edited for brevity, and corrected if necessary. Additionally, some comments where boldfaced because we consider them useful or relevant.

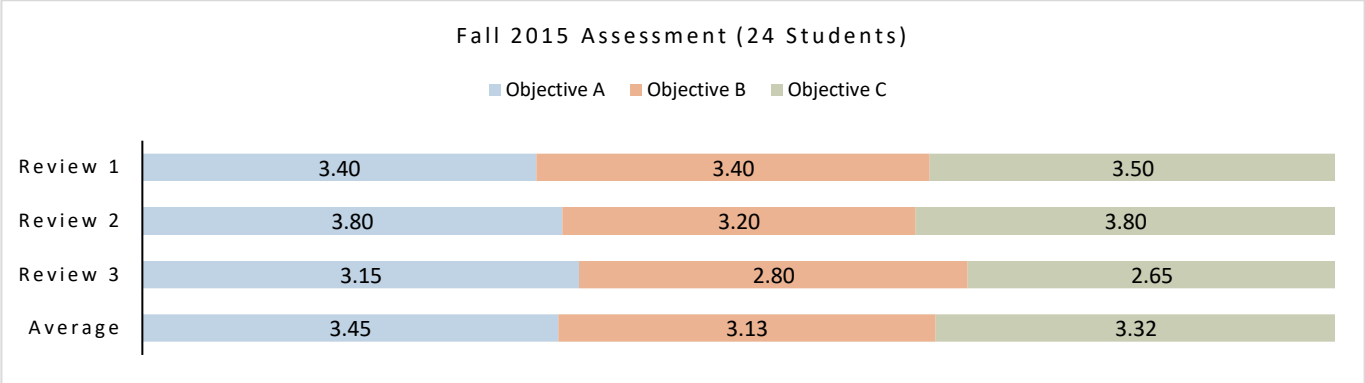


Based on the above data, the reviewers rated average student performance on each objective between adequate and effective. There do not seem to be any patterns that would suggest specific areas for improvement. Given the range of scoring between reviewers for a particular objective, it may be worthwhile for faculty reviewers to norm scoring as part of the assessment process.

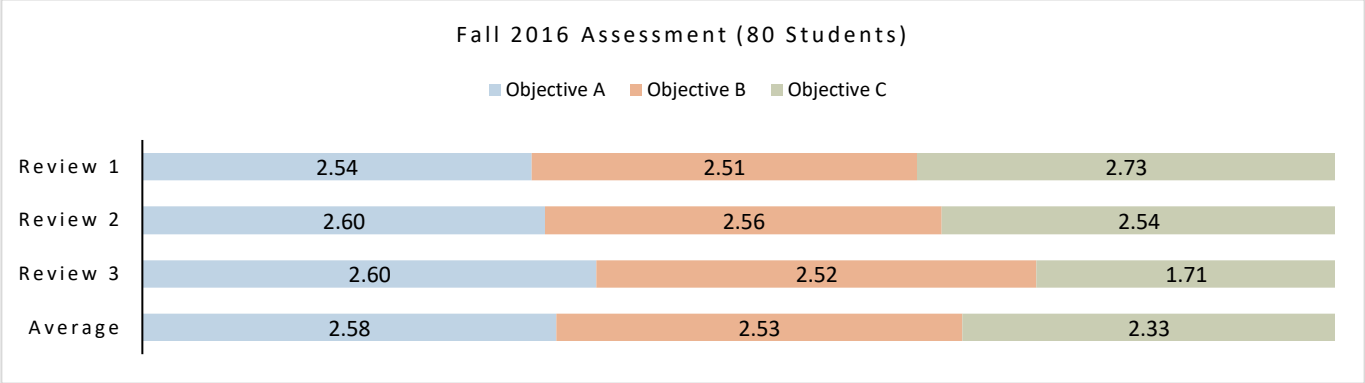


Based on the scores and faculty discussion, Objective C is an area that could be improved. The faculty will meet again to discuss best practices for designing and teaching assignments that include multiple research methods. The data has provided

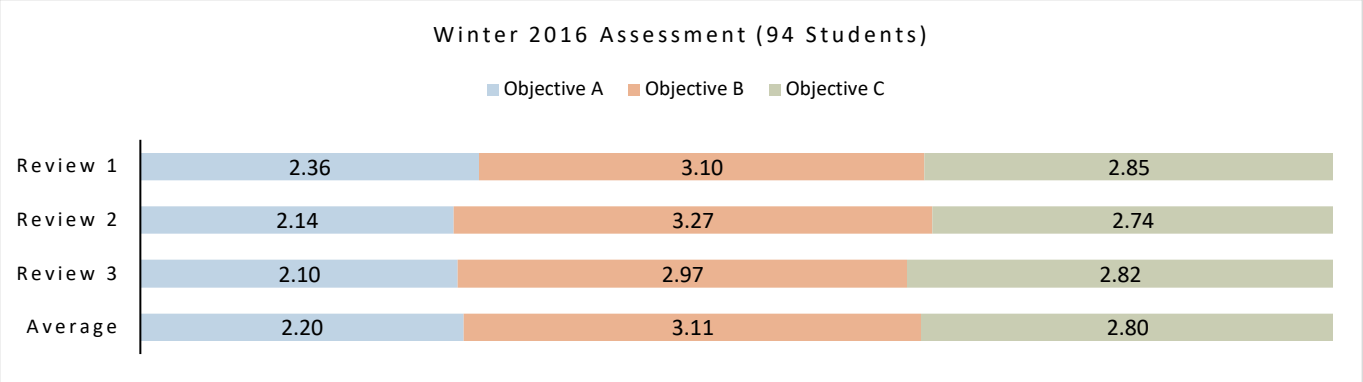
by 9 reviewers. We average it into 3 groups since there was no information about the actual number of students per sections, or which section was assessed by each of the reviewers.



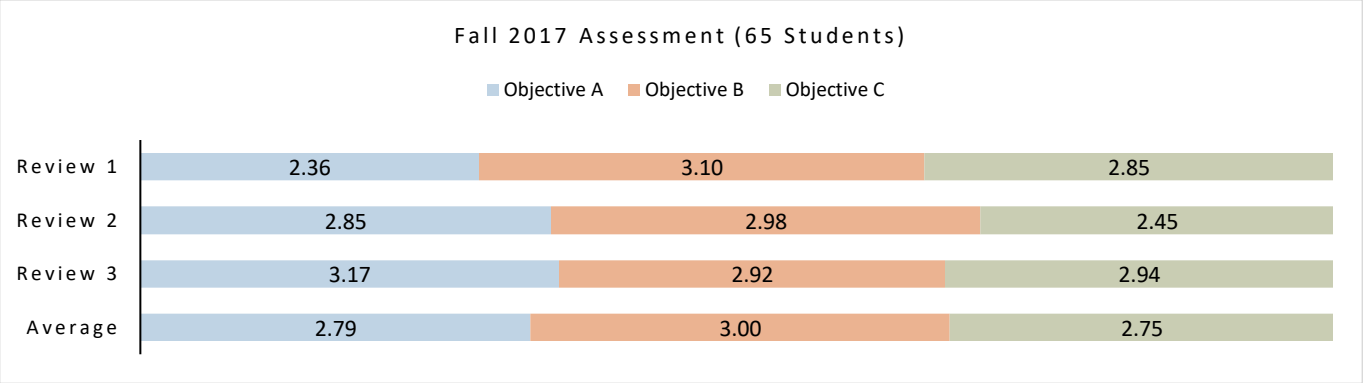
Based on the above data, the reviewers rated average student performance on each objective between adequate and effective. The scores for objectives A and B have remained consistently "effective'' when compared to the scores reported in the Winter 2015 (3.47 and 3.08, respectively). The Winter 2015 report, however, concluded that objective C, with a score of 2.92 (adequate), could be improved. Faculty met to discuss more effective approaches to helping students conduct inquiry-based research. We see improvement in the scores for objective C, which is now at a 3.15 (effective) score. We will work to maintain these scores for the Winter 2016 term.



Before scoring, the faculty reviewed the rubric and talked together about each objective and general expectations for student performance. Each artifact set was scored by 3 reviewers. No reviewer's artifacts were included in the assessment collection and none of the professors who provided student artifacts were considered for reviewer selection. Based on the above data, the reviewers rated average student performance on each objective as solidly "Adequate." The scores for objectives A, B, and C have minimally decreased within the "Adequate" range from the Winter 2016 assessment (2.65, 2.5, and 2.55 respectively). When the Winter 2017 commences, the department will meet to discuss the results of this report and will create an action plan to consider areas for improvement to increase scores into the "Effective" category. This could involve revisions on gathering data, assessment tools, and overall consistency in the curriculum. To increase the scores for objective A, we need to ensure that all samples are adequately collected. This requires that all participating faculty submit an equal amount of writing from each student. In addition, clarification should be made regarding how to assess development of research processes between formative and summative assignments. In order to improve objective B, the application of diverse rhetorical conventions, we need to reevaluate the effectiveness of the instrument that we are using. In other words, how are we as a department defining the use of particular rhetorical conventions—namely in the absence of clearly defined purposes and audiences evident in students' writing samples. Finally, to improve the scores for objective C, conduct inquiry-based research, one such suggestion is to work with university leadership to standardize the process of actively creating original research through the Experiential Education Initiative

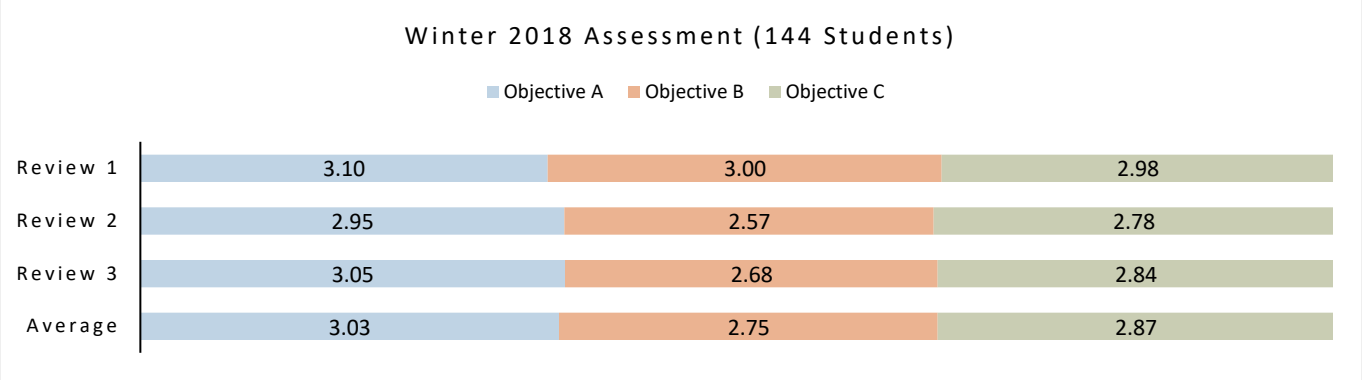


The total average across all courses for Objective A was 2.02, the total average across all courses for Objective B was 3.11, and the total average across all courses for Objective C was also 2.80. The reviewers rated the average student performance on each objective as "Adequate," or slightly above adequate. Overall, the scores for objectives A, B, and C have minimally increased within the "Adequate" range from the Fall 2016 assessment (2.58, 2.53, and 2.32 respectively). The overall average between all three reviewers increased from a 2.47 to a 2.70. While the increase is minimal, it does illustrate a shift towards more effectively meeting the overall outcomes. When the Fall 2018 semester commences, the Department of Writing and Communication will meet to discuss the results of this report and will create an action plan to consider areas for improvement to increase scores into the "Effective" category. One such suggestion could be to continue to work closely with university leadership to standardize the process of actively creating original research through the Experiential Education Initiative, whereby students are encouraged to engage with multiple methods and to create first-hand research. In addition, anecdotally, there has been evidence of improvement reflected through the archives submitted; however, there was not a way to reflect such improvements. Therefore, a proposed suggestion would be to re-evaluate the procedures in both collecting and assessing materials.



The total average across all courses for Objective A was 2.79, the total average across all courses for Objective B was 3.00, and the total average across all courses for Objective C was also 2.75. The reviewers rated the average student performance on each objective as "Adequate," or above adequate. Overall, the scores for objectives A, B, and C have generally increased overall within the "Adequate" range from the Winter 2017 assessment (2.2, 3.11, and 2.8 respectively). The overall average amongst all three reviewers increased from 2.70 to 2.84. While the increase is minimal, it does illustrate a continual shift towards more effectively meeting the overall outcomes. Department leadership created an action plan after the Winter 2017 semester ended. The purpose of this action plan was to increase scores into the "Effective" category, and to address how to assess students' uses of inquiry-based research methods and to ensure consistency in the collection of archives. The minimal shift towards "Effective" may suggest that the Experiential Education Initiative, whereby students are encouraged to engage with multiple methods and create firsthand research, has positively impacted the department's previously identifiable outcomes. This shift too may reflect an agreed upon understanding of the application of rhetorical conventions. In Winter 2018, the department will meet to discuss the results of this report. First, we will evaluate how to utilize current curricular revisions to positively impact both the assessment and collection of archives. One such strategy could be to standardize the types of archives that are submitted to ensure all students can demonstrate their application of the writing process. Further, we will

continue to discuss how to evaluate students' application of rhetorical conventions. One such suggestion may be to have students identify rhetorical conventions including but not limited to: audience, purpose, context, and citation style. Finally, we will analyze the impact of a more standardized inquiry-based research model for COMP 2000 in the creation of inquiry-based research.



The total average across all courses for Objective A was 3.03, the total average across all courses for Objective B was 2.75, and the total average across all courses for Objective C was 2.87. Based on the above data, the reviewers rated average student performance on each objective as both "Above Adequate" and "Adequate." Overall, the scores for objectives A, B, and C have generally increased overall within the "Adequate" range from the fall 2017 assessment (2.79, 3.0, and 2.74 respectively). The overall average amongst all three reviewers increased from 2.84 to 2.87. While the increase is minimal, it does illustrate a continual shift towards more effectively meeting the overall outcomes. The department met in the beginning of the winter 2018 semester to discuss the results of the fall 2017 report. It was decided that current revisions to the curriculum could potentially impact the results of all learning outcomes. The curriculum revisions reveal how students utilized mixed methods to create a sustained research project. Thus, documents produced throughout the semester served as evidence of their writing process. Thus, we noted an increase in learning outcome #1. One such strategy to continue to strengthen our results to "Effective" involves the collection of archives and ensuring all participating faculty have enough time and support to produce archives that are complete. Curricular revisions suggest that students are asked to engage in mixed methods to create a sustained research project. While we saw a very small drop in learning outcome #2 from "Effective" to (highly) "Adequate," this shift may suggest the larger impact of incorporating mixed methods into a final research project. One such suggestion could be to engage in conversation with departmental leadership about creating additional opportunities for faculty to discuss how to engage in the process of both synthesis and analysis. Finally, we analyzed the impact of a more standardized inquiry-based research model for COMP 2000 in the creation of inquiry-based research. The purpose of this discussion was to increase scores into the "Effective" category with the implementation of required CITI training of all students in the creation of first-hand research. The minimal shift towards "Effective" may suggest that curricular consistency has positively impacted understandings of inquiry-based research. At the beginning of the fall 2018 semester, we will continue to discuss how to engage in this process more effectively.

Annex–3: Information for Participating Faculty

Maria Ballester

The General Education curriculum helps students develop effective skills in speaking, listening, writing, reading, critical interpretation, and to appreciate the role of different cultural traditions. This curriculum represents the core knowledge expected of all individuals who graduate from NSU. The current framework expects all students to complete the program's requirements and learning outcomes by the end of their junior year, in accordance with its learning outcomes.

Written Composition	6 COMP credits at or above COMP 1500.
Mathematics	6 MATH credits at or above MATH 1040.
Arts and Humanities	6 credits in any courses with a prefix of: ARTS, HIST, HUMN, LITR, PHIL, SPAN, THEA, FILM, MUSC, DANC, or WRIT, or in a foreign language.
Social and Behavioral Sciences	6 credits in any courses with a prefix of: ANTH, COMM, ECN, GEOG, GEST, INST, POLS, PSYC, or SOCL.
Sciences	6 credits in any courses with a prefix of: BIOL, CHEM, ENVS, MBIO, SCIE, or PHYS.

Table 84. Current General Education domains and requirements.

Assessment Process

1. Why?

- The General Education Task Force is responsible for assessing the Gen Ed learning outcomes at the course level (Annex).
- We do not assess the Gen Ed courses, but rather measure the performance of students in each of the Gen Ed learning outcomes though a series of rubrics. These rubrics are divided into measurable objectives.
- The Gen Ed assessment is independent of the students' grades in a Gen Ed course.

2. Schedule

- All ten Gen Ed Learning Outcomes will be assessed on Fall 2021.
- Reports are due the first week of Winter 2022.

3. Courses to be Assessed

- For this assessment period, the General Education Task Force has selected a set of courses per domain that not only to meet the Gen Ed learning outcomes, but to also include a large number of students, in order to represent as much as possible, the typical NSU student.
- Department Chairs have been notified about these courses and asked to provide the names of faculty that will participate in the assessment of these courses.
- The number of sections of a particular course depends on the number of students enrolled in it. Gen Ed suggests that 25% to 35% of the course's student population be assessed.

Arts and Humanities	ARTS, DANC, FILM, HIST, HUMN, LITR, MUSC, PHIL, SPCH, THEA, or WRIT, or in a Foreign Language.
Mathematics	MATH (At or above MATH 1040).
Science	BIOL, CHEM, ENVS, MBIO, NEUR, SCIE, or PHYS.
Social and Behavioral Sciences	ANTH, COMM, ECN, GEOG, GEST, INST, POLS, PSYC, or SOCL.
Written Composition	COMP (At or above COMP 1500).

Faculty Responsibilities

a. Introductory meeting

- After the courses have been selected for assessment, an introductory meeting with the domain's participating faculty and the Gen Ed domain representative will be scheduled.
- The meeting will provide the faculty the opportunity to hear more about the Gen Ed assessment process, the rubrics that will be used, and to ask questions about the process.

b. Artifacts

- An artifact is an assignment with specific tasks/questions (e.g., a final exam or a midterm paper) that supports a specific learning outcome.
    - The use of homework assignments as an artifact is discouraged.
- The artifacts measure the Gen Ed learning outcomes though a series of rubrics that are divided into measurable objectives.
- The assessment method we are currently using is mainly based on course embedded artifacts.
- Courses can have multiple measures for an individual Gen Ed learning outcome, and faculty will decide upon the artifact(s) to be used in the assessment process.
- Measures are to be direct. These include:
    - *Examination*: standardized tests, portions of exams, quizzes, final exams, etc.
    - *Product*: Research papers, posters, original creative works, etc.
    - *Performance*: presentations, recitals, exhibits, demonstrations, field experiences, etc.
- The assessed student work should be part of the assignments that students are completing for the course and not an additional assignment meant only for the Gen Ed assessment process.
- Faculty is not required to submit students' work as a part of the assessment process.
- The artifacts should comply with each domain's rubric, designed on a 1 to 4 scale: Ineffective (1), Adequate (2), Effective (3), and Outstanding (4).
- The rubrics currently in use (Annex) consist of various measurable objectives created to assess the Gen Ed learning outcomes.
- Question-type artifacts (multiple choice): a minimum of 1 artifact may be used (e.g., a multiple-choice final exam). However, there must be at least 2 questions per rubric objective.
    - Each question used must have a specific rubric.
    - A question cannot be used to assess more than one objective.
- Written-type artifacts: a minimum of 2 artifacts (e.g., a midterm paper and a final paper) are to be used. Generally, each artifact is uses to measure all of the rubric's objectives. However, each objective is considered a question and must be scored separately.
- All sections of the same course must use the same assessment questions, embedded in a similar or different artifact. Thus, faculty teaching those sections should agree on them.
- For courses that will use reviewers, the faculty will collect and make copies of student work, remove any information about the students, and deliver it to the reviewers to be scored.

c. Scoring artifacts

- When faculty give an assignment that includes Gen Ed assessment questions, two scores are possible:
    - Grading score for your course: faculty will score the assignment as they normally do. Faculty should not use this score for Gen Ed purposes.
    - Gen Ed assessment score: faculty will only score the Gen Ed embedded questions
        - An individual score for any Gen Ed question must be an integer number (1, 2, 3 or 4)
        - An individual score cannot have a decimal value, such as 2.5 or 3.3.
- In other words, a course assignment will be graded as explained in the course's syllabus, while a separate scoring of the Gen Ed embedded questions in the same assignment will be given for the assessment. It is understood that we only need the Gen Ed score and that this score will not affect the students' grades in a course.
- Written-type artifacts may use additional reviewers to score the artifacts. In that case, a maximum of 3 reviewers is suggested.

d. Analysis and Conclusions

- Proficiency for each measure must be established. There are two targets related to proficiency:
    - Individual Proficiency Threshold: The score which determines if an individual student has met the outcome. Our target score is 2.5 out of 4. This means a student's performance has to be between *Adequate* and *Effective*, or above, to be considered successful.
    - Learning Outcomes Proficiency Target: The percentage of students expected to meet or exceed the individual proficiency target. The expectation of success for each assessed course is 70%, i.e., 70% of students should be at or above a score of 2.5.
- Faculty members are asked to write a brief conclusion based on their analysis of the results. Faculty can also include any observations about the process.
- Feedback is vital to the Gen Ed program, as it will helps us improve the assessment process and ensure that our methods are working.

e. Final report documents

- At the end of the assessment period, we ask faculty to complete the following on an Excel file:
    - Individual students' scores.
    - Report. Make sure to include the format of the student work product, and a brief data analysis and conclusion of your assessment.
    - Course mapping.
    - A copy of the artifacts used for the assessments.
    - A copy of the course syllabus.
- Send the documents to your domain representative no later than the first week of Winter 2022.

Dissemination of results and program improvement

1. The domain representative will gather all the assessment reports and complete a final report.
2. The report will be then submitted to the Gen Ed Committee in time for submission of the program assessment report.
3. A general education assessment report will be written by the General Education Program. This report will be presented to the Provost's Office.

General Education Assessment Fall 2021
Information for Participating Faculty

NSU Florida
General Education
Task Force

Schedule

- All ten Gen Ed Learning Outcomes will be assessed on Fall 2021.
- Reports are due the first week of Winter 2022.

Courses to be Assessed

Arts and Humanities	HIST 1050, LTR 2010, THEA 1000
Mathematics	MATH 1040, MATH 1200, and MATH 2020 (and MATH 2020 H).
Sciences	BIOL 1040, BIOL 1500, and CHEM 1300 (and CHEM 1300 H).
Social and Behavioral Sciences	ANTH 1020, INST 1500, PSYC 1020 (and PSYC 1020 H), and SOCL 1020
Written Composition	COMP 2000 (and COMP 2000 H)

Introductory meeting with the Gen Ed domain representative

- Learn more about the process and the rubrics to be used.

1

Artifacts

- Decide what artifacts to use (e.g., a final exam or a midterm paper)
- **Question-type** artifacts: minimum of 1 artifact with at least 2 questions per rubric objective.
- **Written-type** artifacts: minimum of 2 artifacts that measures all of the rubric's objectives.

2

Scoring

- Artifacts follow a rubric on a 4 scale (1 equals Ineffective, 2 equals Adequate, 3 equals Effective, and 4 equals Outstanding).
- A question score must be an integer number (1, 2, 3 or 4)

3

Analysis and Conclusions

- **Target score**: 2.5 out of 4. A performance between Adequate and Effective is considered successful.
- **Expectation target**: 70% of students will be at or above a score of 2.5.
- Write a brief conclusion and include any observations about the process.
- Feedback is vital. Help us improve the assessment process.

4

Final report documents

- Complete the following documents:
  - ✓ Course mapping file.
  - ✓ Report form, include a copy of the artifacts used and a copy of the course syllabus.
- Send the documents to your domain representative.

5

Gen Ed Assessment –Instructions for Faculty

Initial Setup

Familiarize yourself with the Gen Ed rubric specifically created for your domain. Each Gen Ed domain has 2 learning outcomes that are assessed using a specific rubric, which in turn is divided into objectives. Please note that the purpose of the Gen Ed assessment if to measure the student's' performance on these objectives (and so, indirectly the learning outcomes) and not their performance on your course.

Essays/Papers

The process of creating/modifying an artifact (assignment) that uses essays/papers for the Gen Ed assessment is as follows:

1. *Choose/create a set of artifacts that fit the rubric's objectives as best as possible*. You need to have at least two artifacts during the semester, each consisting of an essay/paper.
2. *Score the artifacts*. For each artifact used to assess Gen Ed there will be two scoring processes:
   a. *Grading for your course*: You will score each artifact (essay/paper) as you will normally do. This grade is NOT to be used in our Gen Ed assessment.
   b. *Scoring for the Gen Ed assessment*:
      - you will send reviewers a copy of the essay/paper generated by each student.
      - Reviewers will score the (essay/paper) on a 1-4 scale and deliver their score to you or to the domain representative. It is understood that the Gen Ed score WILL NOT affect students' grades in the course.

Multiple Choice Questions

The process of creating/modifying an artifact (assignment) that uses multiple choice questions for the Gen Ed assessment is as follows:

1. *Choose/create a set of questions that fit the rubric's objectives as best as possible*. You need to have at least two questions per objective, and you can use already existing questions.
2. *Create an individual rubric for each question*. The answers for each question are to be "weighted" based on levels of comprehension. In other words, questions are not to be scored on a 0-1 basis (1 right /3 wrong). We use a 1 to 4 range for each answer choice, where 1 is Ineffective, 2 is Adequate, 3 is Effective, and 4 is Outstanding. As an example, the following rubric was used to score a question assessing Objective B for the Science Domain. As you can see, the 4 levels of comprehension are explained (you don't need to do this), so the rubric can be used even is the numbers are changed.

Question 2. What is the correctly reported mass of water based on the following data? Mass of beaker and water 29.62 g Mass of beaker only 28.3220 g				
Choices	(A) 1.2 g	(B) 1.30 g	(C) 1.298 g	(D) 1.2980 g
Rubric	Student incorrectly rounds up the answer.	Correct. Student uses the appropriate level of significant figures.	Student fails to adjust the number of significant figures.	Student incorrectly exaggerates the number of significant figures.
Points	1	4	3	2

3. *Embed these questions in one or more artifacts* (a final exam, a midterm, etc.). For example, a 20-question final exam could have 6 embedded Gen Ed questions, that assess one or more of the objectives.
4. *Score the questions*. For a test that is used to assess Gen Ed there will be two scoring processes:
   c. *Grading for your course*: You will score each test as you will normally do. This grade is NOT to be used in our Gen Ed assessment.
   d. *Scoring for the Gen Ed assessment*: you will only score the embedded questions on a 1-4 scale. It is understood that the Gen Ed score WILL NOT affect students' grades in the course.

If the *test was given on Canvas*, we can extract the information for each question by student:

- Got to your Canvas Course and open the test that has the embedded Gen Ed questions.
- On your top right side click on "Quiz Statistics"
- Now click on "Student Analysis" (top right, second option from the left). This will generate a report (csv file) downloaded to your computer.
- You can send the file to me, along with the questions used and the rubric. I'll extract the information for the assessment questions and send it back to you.

The Excel file

1 Short version

1. Complete every "green" cell in the Excel Workbook.
2. The other cells are locked.

2 Long Version

2.1 Common Tabs (sheets)

1. *Analysis Sheet*. Averages and percentages are calculated. Top right table contains the overall calculations, based on % of success (70%) and target scores (2.5). Other information is available, such as averages for each artifact and for each objective. No input is needed.
2. *Report Sheet*. This is the form to be used to write the assessment report. It summarizes the calculations and information from previous sheets. Your input is needed for:
   - *Assessment type*: Final paper, Midterm paper, Essay, etc.
   - *Comment*: A more detailed view of the artifact (question)
   - *Data Analysis*: Briefly describe the assessment results based on data collected. Indicate the extent to which students are achieving each of the learning outcomes listed above and state whether the standard of success was met for each outcome.
   - *Conclusion*: Make a brief analysis of the overall data, with comments on possible improvements to the assessment process. Also, describe the areas of strength and weakness in students' achievement of the learning outcomes.
3. *Mapping Sheet*. This information will help us:
   a) Make decisions about the current Gen Ed courses to verify that all identified Gen Ed learning outcomes are adequately addressed.
   b) Identify where and how student's learning is, or can be, assessed.
   c) Determine how well a course aligns with the Gen Ed learning outcomes.
   d) Structure the curricula for the Gen Ed program.

   The map compares the learning outcomes
   - *Which of the course's LOs above, closely matches this Gen Ed LO*? (You can select more than one): click on the boxes. The numbers indicate the course's learning outcome.
   - *How is the course content aligned with this Gen Ed LO*? Click on a box. A small triangle will appear on the right-lower corner. Choose between: Not Addressed, Implied, or Explicitly Stated.

- *What emphasis is given to this Gen Ed LO in the course*? Click on a box. A small triangle will appear on the right-lower corner. Choose between: None, Low, or Significant.

2.2 Essay Artifacts

1. *Main Sheet*. Begin here. Write down the information in the green cells.

Section(s)	Write down the course section. If teaching more than one section separate them with commas (DA1, DA2)
Instructor	Name of the instructor

Assessment Information		
Number of Artifacts used:		Number of artifacts created for the course. A minimum of two is required. For example, if you divided the Gen Ed assessment into 2 artifacts, then the number of artifacts is 2.
Artifact	Objective	The "Artifact" column refers to the specific artifacts used in an artifact. It consists of number of the artifact and a number for the objective being assess, separated by a "dot". Following the example of 2 artifacts mentioned above, the numbers shown in the "Artifact" column mean the following: Artifact 1 (one of the essays) assess objective A (1.1), objective B question (1.2), and objective C (1.3) Artifact 2 (the other essay) has a similar set up (2.1, 2.2, and 2.2)
1.1	A	
2.1	A	
1.2	B	
2.2	B	
1.3	C	
2.3	C	

2. *Reviewers' sheets (1 to 3)*

   - A maximum of two reviewer is needed. Reviewers will provide their name above.
   - Input the scores (1, 2, 3 or 4) for each of the artifacts by student.

	Objective A		Objective B		Objective C	
#	1.1	2.1	1.2	2.2	3.1	3.2
1	1	4	3	4	1	3
2	2	2	3	3	3	2

3. *Grades sheet*

   - Averages for each student, as well as per objectives are calculated automatically.
   - No input needed.

2.3 Multiple-choice Artifacts

1. *Main Sheet*. Begin here. Write down the information in the green cells.

Section(s)	Write down the course section. If teaching more than one section separate them with commas (DA1, DA2)
Instructor	Name of the instructor

Assessment Information		
Number of Artifacts used:		Number of artifacts created for the course. This is the number of exams, quizzes, or tests used during the semester for Gen Ed assessment. For example, if you divided the Gen Ed assessment questions into 2 exams and 1 quiz, then the number of artifacts is 3.
Artifact	Objective	A minimum of two questions for each of the rubric's objectives is required. The "Artifact" column refers to the specific question used in an artifact. It consists of number of the artifact and the number of the question separated by a "dot". Following the example of 3 artifacts above, the numbers shown mean the following: Artifact 1 (one of the exams) had 1 objective A question (1.1) and 1 objective B question (1.2) Artifact 2 (the other exam) had a similar set up (2.1 and 2.2) Artifact 3 (the quiz) had 2 objective C questions (3.1 and 3.2).
1.1	A	
2.1	A	
1.2	B	
2.2	B	
3.1	C	
3.2	C	
…	…	

2. *Grades sheet*

- First, input the "key" for each multiple-choice artifact according to the artifact's rubric.

Questions Key							
Q	Artifact	A	B	C	D	No Ans	Obj
1	1.1	1	4	2	3	0	A
2	2.1	4	3	2	1	0	
3	1.2	2	3	4	1	0	B
4	2.2	1	2	3	4	0	
5	3.1	4	2	3	1	0	C
6	3.2	3	4	2	1	0	

- Write down the letter answers (A, B, C or D) for each of the artifacts by student.

	Letter Grades					
	Objective A		Objective B		Objective C	
#	1.1	2.1	1.2	2.2	3.1	3.2
1	B	B	A	D	C	C
2	C	B	D	C	A	A

- Blue columns are filled automatically according to the key.

Annex–4: Gen Ed Learning Outcomes and Assessment Rubrics

Maria Ballester

Arts and Humanities

a. Gen Ed Learning Outcomes Arts and Humanities

Upon successful completion of the General Education Program, students are expected to:

(1) Demonstrate an understanding of and appreciation for the various methods utilized in a variety of arts and humanities disciplines.

(2) Delineate the means by which different scholarly fields reflect, interact with, and influence human thought, culture, and values.

b. Gen Ed Assessment Rubric Arts and Humanities

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
A. Utilize basic critical terminology relevant to the discipline.	Does not utilize critical terminology relevant to the discipline; consistently uses incorrect or inaccurate terminology; consistently uses terminology not relevant to the discipline.	Utilizes some critical terminology relevant to the discipline; employs terminology to explain concepts within the discipline; but also uses inaccurate or incorrect terms.	Consistently utilizes critical terminology relevant to the discipline; regularly uses terminology correctly and accurately to explain concepts within the discipline. Inaccuracy or incorrect use of terms may occur.	Utilizes critical terminology relevant to the discipline in a consistent, accurate and advanced manner. Use of terminology shows sophisticated ease with terms and how they relate to concepts.
B Apply different techniques, methods or approaches used in various arts and humanities disciplines to comprehend and respond to the human condition.	Does not apply any techniques, methods, or approaches to knowledge of the human condition employed by the arts or humanities discipline in question. Shows rudimentary or no understanding of these techniques, methods, or approaches and how they are employed by the arts or humanities discipline in question	Applies several techniques, methods, or approaches to knowledge of the human condition employed by the arts or humanities discipline in question. Shows basic understanding of these techniques, methods, or approaches and how they are employed by the arts or humanities discipline in question, with some lapses of understanding.	Consistently applies different techniques, methods, or approaches to knowledge of the human condition employed by the arts or humanities discipline in question. Shows solid understanding of these techniques, methods, or approaches and how they are employed by the arts or humanities discipline in question, with occasional lapses of understanding.	Applies different techniques, methods, or approaches to knowledge of the human condition employed by the arts or humanities discipline in question in a consistent and sophisticated manner. Shows advanced understanding of these techniques, methods, or approaches and how they are employed by the arts or humanities discipline in question.

Mathematics

a. Gen Ed Learning Outcomes Mathematics

Upon successful completion of the General Education Program, students are expected to:

(3) Demonstrate knowledge of fundamental mathematical principles and concepts.

(4) Achieve basic quantitative literacy to interpret quantitative data into meaningful terms and understand relationships between sets of quantitative data.

b. Gen Ed Assessment Rubric Mathematics

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
A. Understand and apply fractions and percentages.	Lacks understanding fractions and percentages and unable to and apply.	Uses knowledge of theoretical framework, concepts, terms, and important	Uses knowledge of theoretical framework, concepts, terms, and important examples to	Uses knowledge of theoretical framework, concepts, terms, and important examples to describe and apply fractions

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
		examples to describe and apply fractions and percentages.	describe and apply fractions and percentages and carry out specific calculations.	and percentages and carry out specific calculations and explain the meaning of factions and percentages.
B. Explain the use of basic statistical data	Cannot accurately explain the use of basic statistical data.	Can accurately explain the use of basic statistical data via tables and charts.	Can accurately explain the use of basic statistical data via tables and charts and perform specific calculations.	Can accurately explain the use of basic statistical data via tables and charts and perform specific calculations and explain the statistical significance of the data.
C Effectively utilize integers, ratios, percentages, exponents, and logarithms	Cannot accurately utilize integers, ratios, percentages, exponents, and logarithms.	Can accurately and effectively utilize integers, ratios, percentages, exponents, and logarithms.	Can accurately and effectively utilize integers, ratios, percentages, exponents, and logarithms and perform specific calculations.	Can accurately and effectively utilize integers, ratios, percentages, exponents, and logarithms and perform specific calculations and explain the meaning of the integers, ratios, percentages, exponents, and logarithms.
D. Use mathematical methods to solve applied and word problems	Cannot use mathematical methods to solve applied and word problem!	Can use mathematical methods to i. solve applied and word problems,	Can use mathematical methods to solve applied and word problems an demonstrate detailed steps and process of problem solving.	Can use mathematical methods to d solve applied and word problems and demonstrate detailed steps and process of problem solving and further explain the other applications of mathematical methods.
E. Interpret and evaluate quantitative or symbolic models such as graphs, tables, units of measurement, scales, equations, functions, and distributions	Cannot interpret and evaluate quantitative or symbolic models such as graphs, tables, and units of measurement, scales, equations, functions, and distributions.	Can interpret and evaluate quantitative or symbolic models such as graphs, tables, and units of measurement, scales, equations, functions, and distributions.	Can accurately interpret and evaluate quantitative or symbolic models such as graphs, tables, and units of measurement, scales, equations, functions, and distributions with specific examples	Can accurately interpret and evaluate quantitative or symbolic models such as graphs, tables, units of measurement, scales, equations, functions, and distributions with specific examples and explain the applications and meaning of quantitative or symbolic models.

Science

a. Gen Ed Learning Outcomes Science

Upon successful completion of the General Education Program, students are expected to:

(5) Apply methods of scientific inquiry.

(6) Achieve basic scientific literacy to make informed decisions on contemporary consumer or social issues.

b. Gen Ed Assessment Rubric Science

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
A. Differentiate among facts, laws, theories, and hypotheses	Lacks understanding of relationship offsets, law, theories, hypotheses, and conclusions; Applies Ideas inaccurately, or uses irrelevant facts to explain natural phenomena.	Uses knowledge of theoretical and experimental framework, at least one theoretical perspective and empirical fact to differentiate among facts, laws, theories, and hypotheses to the understanding of natural phenomena.	Uses knowledge of theoretical and experimental framework, at least two or three theoretical perspectives and empirical facts to differentiate among facts, laws, theories, and hypotheses to the understanding of natural phenomena.	Displays an in-depth understanding of relationship offsets, law, theories, hypotheses, and conclusions; makes connections among facts, laws, theories, and hypotheses to the understanding of natural phenomena.

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
B. Employ the basic terminology of at least one area of science and define its major concepts, principles, and fundamental theories	Cannot accurately employ the basic terminology of at least one area of science and define its major concepts, principles, and fundamental theories.	Can accurately employ the basic terminology of at least one area of science and define its major concepts, principles, and fundamental theories.	Can accurately employ and apply the basic terminology of at least one area of science and define its major concepts, principles, and fundamental theories with supporting data.	Can accurately describe, employ, and apply the basic terminology of at least one area of science and accurately define its major concepts, principles, and fundamental theories with supporting data.
C. Formulate a hypothesis that relates to a simple problem or question and design a valid experiment to test it	Cannot formulate a hypothesis that relates to a simple problem or question and design a valid experiment to test it	Can formulate a hypothesis that relates to a simple problem or question and design a valid experiment to test it	Can precisely formulate a hypothesis that relates to a simple problem or question and design a valid experiment to test it.	Can precisely formulate a hypothesis that relates to a simple problem or question and design a well-rounded valid experiment to test it thoroughly.

Social and Behavioral Sciences

a. Gen Ed Learning Outcomes Social and Behavioral Sciences

Upon successful completion of the General Education Program, students are expected to:

(7) Understand and appreciate the role of the individual in a group.

(8) Understand the major concepts and methods used by social or behavioral scientists to investigate, analyze, or predict human or group behavior.

b. Gen Ed Assessment Rubric Social and Behavioral Sciences

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
A. Demonstrate knowledge of the major principles, models, and issues under investigation within a specific discipline of the social and behavioral sciences	Does not understand principles, models, and/or issues discussed	Displays minimal understanding or principles, models, and/or issues discussed	Displays good understanding of principles, models and/or issues discussed	Displays an in-depth understanding of principles, models and/or issues discussed
B. Integrate and apply the major theories, principles, and concepts of a social and behavioral science discipline to evaluate research and applied issues within the discipline using critical thinking skills and appropriate discipline-specific methodology for analysis	Does not provide logical argument or support regarding research/issues discussed. Does not understand discipline-specific methodology necessary for analysis	Minimal logical evaluation and support. Minimal understanding of appropriate discipline-specific methodology necessary for analysis	Provides some logical evaluation and support for arguments. Displays some understanding of appropriate discipline-specific methodology necessary for analysis	Logically evaluates research/issues and strongly supports constructed arguments using critical thinking skills and appropriate discipline-specific methodology for analysis.
C. Describe how the individual or groups of individuals are influenced by psychological, social, cultural, geographical, economic, or political forces, both in their own culture and in other cultures, from the perspective of a specific social and behavioral science discipline.	Cannot effectively describe how the individual or group is influenced by forces examined in social and behavioral science.	Can describe in minimal detail how the individual or group is influenced by forces examined in social and behavioral science.	Can describe in some detail how the individual or group is influenced by forces examined in social and behavioral science.	Can describe in extensive detail how the individual or group is influenced by forces examined in social and behavioral science.

Writing Composition

a. Gen Ed Learning Outcomes Writing Composition

Upon successful completion of the General Education Program, students are expected to:

(9) Express ideas clearly and coherently.

(10) Use the English language effectively to construct logical and persuasive arguments.

b. Gen Ed Assessment Rubric Writing Composition

Objective	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
A. Use strategies for writing as a process.	Does not use strategies for writing as a process.	Superficially uses strategies for writing as a process	Uses strategies for writing as a process.	Uses strategies for writing as a process in a substantive way.
B. Apply diverse rhetorical conventions.	Does not apply diverse rhetorical conventions.	Superficially applies diverse rhetorical conventions	Applies diverse rhetorical conventions.	Applies diverse rhetorical conventions in a sophisticated way.
C. Conduct inquiry-based research.	Does not ask and answer a research question.	Asks and superficially answers a research question	Asks and answers a research question using varied sources for support.	Successfully asks and thoroughly answers a research question using multiple methods.

Annex–5: Multiple Choice Assessment Rubrics Examples

Maria Ballester

Assessment Rubrics / PSYC–1020

Assessment Questions Rubrics

PSYC-1020 has carefully chosen six (6) questions to conform with the assessment rubric (Objectives A, B, and C). The questions are:

Question 1 (A) Which of the following best exemplifies the process of negative reinforcement?				
Response	(A) Parents requiring their daughter to perform extra chores for a week because she lied about having finished her homework.	(B) A professor excusing all her students with an A average from having to take the final exam	(C) An animal trainer withholding food from a dolphin each time it makes a mistake performing a trick.	(D) A baker adding a free doughnut to a customer's order.
Rubric	it's neither negative nor reinforcement	it's a correct answer	it is negative but not reinforcement	it's reinforcement but not negative
Points	1	4	2	3
Question 2 (A) Tom calls any small 4-legged animal a mouse. One day he sees a bunny for the first time and says to his mom, "Mom, look! It is a white mouse over there!" Tom's calling the bunny a mouse is an example of				
Response	(A) Assimilation	(B) Accommodation	(C) Disequilibrium	(D) Fixation
Rubric	Correct answer	It's a concept related to assimilation.	It's still a concept Piaget mentioned regarding accommodation	It's not Piaget's but Freud's concept.
Points	4	3	2	1
Question 3 (B) Which of these would be the most effective research method for determining if playing violent video games makes people more violent?				
Response	(A) Compare the rates of violence in the world prior to the introduction of violent video games to the rates of violence in the years since then	(B) Compare the criminal histories of a large random sample of people who grew up playing violent video games to a large random sample of people (of the same ages) who did not play violent video games	(C) Assign a group of research volunteers at random to either play violent video games or to play non-violent (but otherwise similar) video games. Afterward, compare the frequency and severity of violence by the participants assigned to group 1 and those assigned to group 2.	(D) Interview a panel of parents about their children to determine if there is a link between game preferences (violent or not) and real-life incidence of violent outbursts
Rubric	it may be slightly informative but has too many confounds to realistically answer the research question	it's a valid correlational study but not experimental	correct answer (it is an experiment)	it is a qualitative assessment of a small group of people who haven't measured either of the two variables of interest for their own children let alone others' and whose comments will be confabulated guesses
Points	2	3	4	1

Question 4 (B) Dr. Pearce has developed a new method for teaching American Sign Language (ASL) to adults and would like to see if it is more effective than the traditional method is. Which of the research designs listed below would be best for answering the research question?				
Response	(A) Compare the proficiency of adults who have been taught the Pearce method to children who have been taught by the traditional method.	(B) Compare the proficiency of adults who are just beginning to learn the Pearce method with those who have already studied it for a year.	(C) Compare the proficiency of adults when they are beginning to learn the Pearce method to their own proficiency a year later.	(D) Compare the proficiency of adults who have studied the Pearce method for a year to those who have studied the traditional method for a year.
Rubric	the groups being compared will be different regardless of the quality of the two different methods, and one group is explicitly from a population not relevant to the goals of the method (i.e., teaching adults)	comparing samples from the relevant population	a good within-subjects design but lacking the comparison to the other method	correct answer
Points	1	2	3	4

Question 5 (C) Inspired by major world events of the 1940s, Stanley Milgram designed a series of studies in which the research participants believed they were delivering electrical shocks to other participants. What was Milgram really studying?				
Response	(A) Obedience to authority	(B) Effects of punishment on learning	(C) Conformity to group behavior	(D) Effectiveness of alternating current vs. direct current
Rubric	correct answer	matching the cover story of the study	closely related social influence	identifying electrical engineering rather than psychology as the topic of study
Points	4	2	3	1

Question 6 (C) Megan believes that her poor performance on the last quiz was because of her teacher's inability to teach the material. However, she believes that the reason for a good score on today's quiz is because she is naturally smart. This example illustrates the				
Response	(A) fundamental attribution error.	(B) self-serving bias.	(C) cognitive dissonance.	(D) social conformity.
Rubric	it's most closely related to self-serving bias	correct answer	it's about a cognitive process, but not related to attribution errors.	it's about a social process and not related to attribution errors.
Points	3	4	2	1

Assessment Rubrics / BIOL–1500

Assessment Questions Rubrics

BIOL-1500 has chosen five (5) questions to conform with the assessment rubric (Objectives A, B, and C). The questions follow with explicit rubrics below:

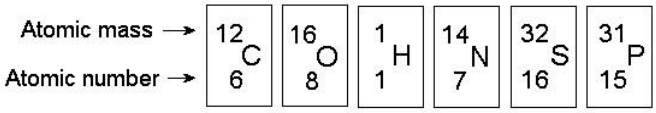
Question 1 (A) What term is used to describe the relationship between catabolic and anabolic pathways?				
Response	(A) Cooperativity	(B) Energy Coupling	(C) Entropy	(D) Antagonistic
Points	3	4	1	2

Question 2 (A) Choose the answer that has these events of protein synthesis in the proper sequence.

1. An aminoacyl-tRNA binds to the A site.
2. A peptide bond forms between the new amino acid and a polypeptide chain.
3. tRNA leaves the P site, and the P site.
4. A small ribosomal subunit binds with mRNA.
5. tRNA translocates to the P site.

Response	(A) 4, 1, 3, 2, 5	(B) 4, 1, 2, 5, 3	(C) 1, 3, 2, 4, 5	(D) 2, 4, 3, 5, 1
Points	3	4	1	2

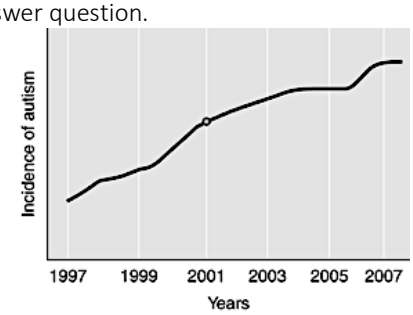
Question 3 (B) How many electrons does phosphorus have in its valence shell? Use the information extracted from the periodic table in the image below to answer the question.



Response	(A) 7.	(B) 14	(C) 5	(D) 8
Points	3	1	4	2

Question 4 (B) Grana, thylakoids, and stroma are all components found in				
Response	(A) vacuoles	(B) mitochondria	(C) nuclei	(D) chloroplasts
Points	1	3	4	2

Question 5 (C) Use the figure below to answer question.



The graph above depicts the relative increase in autism in children from 1997 to 2007 living in California. In 2001, thimerosal was the only reagent removed from childhood vaccines and no other reagent was changed. marked on the graph by the circle. Based on the information presented in the graph, what can be concluded about the hypothesis that thimerosal causes autism?

Response	(A) Thimerosal contributes to the occurrence of autism as evidenced by the increase in children with autism from 2001 to 2007.	(B) Prior to 2001, thimerosal clearly influenced the cases of autism in California	(C) A sharp decrease in the cases of autism would be expected after 2001 if thimerosal was the causative agent of autism.	(D) The results of the study are inclusive.
Points	1	3	4	2

Annex–6: Gen Ed Course Mapping

Maria Ballester

As part of the process for Gen Ed assessment, participating faculty were asked to (1) indicate the extent to which their course aligns to each of the General Education learning objectives (Table 1), and (2) indicate the emphasis in which these learning objectives are been taught (Table 2).

In general, an analysis of these responses shows that Gen Ed courses address the learning objectives intended for their domain. However, some learning objectives overlap in different domains.

	Content Alignment to Gen Ed LO's					
	Arts & Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition	
Gen Ed LO	N = 3 Courses	N = 13 Courses	N = 8 Courses	N = 10 Courses	N = 5 Courses	
LO #1 Demonstrate an understanding of and appreciation for the various methods utilized in a variety of arts and humanities disciplines.	67%	50%	67%	88%	100%	Arts & Humanities
LO #2 Delineate the means by which different scholarly fields reflect, interact with, and influence human thought, culture, and values.	67%	42%	67%	83%	100%	
LO #3 Demonstrate knowledge of fundamental mathematical principles and concepts.	0%	100%	58%	5%	0%	Mathematics
LO #4 Achieve basic quantitative literacy to interpret quantitative data into meaningful terms and understand relationships between sets of quantitative data.	17%	100%	75%	35%	0%	
LO #5 Apply methods of scientific inquiry.	0%	100%	92%	75%	13%	Science
LO #6 Achieve basic scientific literacy to make informed decisions on contemporary consumer or social issues.	17%	50%	83%	70%	0%	
LO #7 Understand and appreciate the role of the individual in a group.	33%	83%	67%	85%	50%	Social & Behavioral Sciences
LO #8 Understand the major concepts and methods used by social or behavioral scientists to investigate, analyze, or predict human or group behavior.	17%	71%	67%	88%	50%	
LO #9 Express ideas clearly and coherently.	67%	100%	83%	68%	88%	Written Composition
LO #10 Use the English language effectively to construct logical and persuasive arguments.	67%	67%	75%	65%	100%	

Table 85. Content alignment of the domains to the Gen Ed LOs (Information taken from instructor's responses in the Gen Ed Course mapping). Numbers inside indicate the % amount and the colors follow the table below.

Color Code	Alignment
	Not Addressed
	Not Addressed/ Implied
	Implied
	Implied/ Explicitly
	Explicitly Stated

Gen Ed LO	Emphasis: Arts & Humanities (N = 3 Courses)	Mathematics (N = 13 Courses)	Science (N = 8 Courses)	Social and Behavioral Sciences (N = 10 Courses)	Written Composition (N = 5 Courses)	
LO #1 Demonstrate an understanding of and appreciation for the various methods utilized in a variety of arts and humanities disciplines.	83%	42%	75%	95%	100%	Arts & Humanities
LO #2 Delineate the means by which different scholarly fields reflect, interact with, and influence human thought, culture, and values.	100%	42%	67%	93%	100%	
LO #3 Demonstrate knowledge of fundamental mathematical principles and concepts.	0%	100%	58%	5%	0%	Mathematics
LO #4 Achieve basic quantitative literacy to interpret quantitative data into meaningful terms and understand relationships between sets of quantitative data.	33%	100%	92%	48%	0%	
LO #5 Apply methods of scientific inquiry.	0%	92%	100%	73%	13%	Science
LO #6 Achieve basic scientific literacy to make informed decisions on contemporary consumer or social issues.	33%	71%	83%	83%	0%	
LO #7 Understand and appreciate the role of the individual in a group.	50%	75%	75%	95%	50%	Social & Behavioral Sciences
LO #8 Understand the major concepts and methods used by social or behavioral scientists to investigate, analyze, or predict human or group behavior.	17%	71%	75%	83%	88%	
LO #9 Express ideas clearly and coherently.	67%	92%	67%	93%	100%	Written Composition
LO #10 Use the English language effectively to construct logical and persuasive arguments.	67%	83%	67%	90%	100%	

Table 86. Course Emphases of the Gen Ed LOs by Gen Ed Domains (Information taken from instructor's responses in the Gen Ed Course mapping). Numbers inside indicate the % amount and the colors follow the table below.

Color Code	Emphasis
	None
	None/Introduced
	Introduced
	Introduced/Significant
	Significant

Annex–7: Gen Ed Proposed Changes to the Students' Learning Outcomes

Maria Ballester

Justification

A review of the data from Gen Ed's current and previous assessments, and faculty feedback, show that

- The current learning outcomes and their associated assessment rubrics have been in place since 2014. To keep it current, Gen Ed's framework and learning outcomes need to be updated.
- In most cases, assessment rubric's objectives do not relate well to the learning outcomes they are trying to assess.
- Faculty find confusing to differentiate between objectives and learning outcomes. It has been suggested that the learning outcomes should be measured directly.

Proposed Changes

- Update the current learning outcomes.
- Create three (3) Gen Ed Program pillars (categories), aligned with the mission of NSU and the Gen Ed program.
  - The pillars will have one learning outcome each (*Gen Ed Program Learning Outcomes*)
  - Each domain will have learning objectives (*Domain's Learning Objectives*) based on the Gen Ed's LOs.
- For each domain, create assessment rubrics that will measure the domain's learning objectives directly.
- Forward the proposal to the deans, chairs, and faculty for their review and approval.

f. General Education Program Learning Outcomes

The pillars and their respective General Education Program Learning Outcomes are as follows:

Category	Description	Learning Outcomes
Foundation	Knowledge and comprehension of the terminology, concepts, methodologies, and theories used within the subject area.	Students will state and explain the terminology, concepts, methodologies, and theories used within the subject area.
Critical thinking	Analysis of problems, issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	Students will locate, define, and critically evaluate problems or information from multiple perspectives and develop reasoned solutions within the subject area.
Communication	Development and expression of ideas in different forms.	Students will clearly and effectively communicate knowledge and ideas in forms appropriate to the subject area.

g. Learning Objectives per Domain

Upon successful completion of the General Education Program, students are expected to:

Domain	Foundation	Critical thinking	Communication
Arts and Humanities	Identify and describe the various methods utilized within the discipline.	Apply different techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Utilize basic critical terminology to express ideas relevant to the discipline.
Mathematics	Describe and explain fundamental mathematical principles and concepts, including at least one of the following: solving equations and inequalities, logic, statistics, algebra, or trigonometry.	Assess and analyze quantitative information into meaningful terms and interpret their results.	Formulate mathematical models, arguments, and solutions clearly and effectively.
Science	Describe and explain basic scientific principles and concepts relevant to the discipline.	Use physical/natural principles to analyze and solve problems within the subject area.	Communicate scientific knowledge, thoughts, and reasoning clearly and effectively.
Social and Behavioral Sciences	Identify and understand the major concepts and methods to investigate,	Use concepts and evidence within the subject area to explain human actions or behaviors.	Communicate knowledge, thoughts, and reasoning clearly and effectively within the subject area.

Domain	Foundation	Critical thinking	Communication
	analyze, or predict human or group behavior relevant to the discipline.		
Written Composition	Illustrate, outline, and explain the basic principles of effective communication in any chosen medium.	Demonstrate competence in communication through organization of a central message with supporting materials in the chosen medium.	Communicate ideas effectively in writing as appropriate to a given context, purpose, and audience, which includes a variety of styles, genres, and media.

Assessment Rubrics

a. Arts and Humanities

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Foundation	Does not identify or describe the various methods utilized within the discipline.	Identifies or describes at least one of the methods utilized within the discipline.	Consistently identifies and describes various methods utilized within the discipline.	Identifies and describes the various methods utilized in the discipline in a consistent, accurate and advanced manner.
Critical thinking	Does not apply any techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Applies several techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Consistently applies different techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Applies different techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline in a consistent and sophisticated manner.
Communication	Does not utilize critical terminology to express ideas relevant to the discipline.	Utilizes critical terminology to express ideas relevant to the discipline in a limited manner; also uses inaccurate or incorrect terms.	Consistently utilizes critical terminology to express ideas relevant to the discipline correctly and accurately.	Utilizes critical terminology to express ideas relevant to the discipline in a consistent, accurate and advanced manner.

b. Mathematics

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Foundation	Does not describe or explain the fundamental mathematical principle or concept.	Describes or explains some of the fundamental mathematical principle or concept.	Consistently describes or explains the fundamental mathematical principle or concept.	Describes or explains the fundamental mathematical principle or concept in a consistent, accurate, and complete manner.
Critical thinking	Does not assess or analyze quantitative information into meaningful terms and does not interpret their results.	Can accurately assess and analyze some of the quantitative information into meaningful terms and can somewhat accurately interpret their results.	Can accurately assess and analyze the majority of the quantitative information into meaningful terms and can mostly correctly interpret their results.	Can accurately assess and analyze all of the quantitative information into meaningful terms and correctly interpret their results completely.
Communication	Cannot formulate mathematical models, arguments, or solutions clearly or effectively.	Can formulate mathematical models, arguments, and solutions, but not clearly or effectively and/or with some inaccuracies.	Can formulate mathematical models, arguments, and solutions clearly and effectively, but with some inaccuracies.	Can formulate mathematical models, arguments, and solutions clearly and effectively with accuracy.

c. Science

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Foundation	Lacks understanding of basic scientific principles and concepts relevant to the discipline.	Describes and explains at least one basic scientific principle or concept relevant to the discipline.	Describes and explains at least two or three basic scientific principles or concepts relevant to the discipline.	Displays an in-depth understanding of the basic scientific principles and concepts relevant to the discipline.

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Critical thinking	Cannot accurately use physical/natural principles to analyze and solve problems within the subject area.	Can accurately employ physical/natural principles to analyze and solve at least one type of problem within the subject area.	Can accurately employ physical/natural principles to analyze and solve at least one or more type of problem within the subject area, with supporting data.	Can accurately employ and apply physical/natural principles to analyze and solve problems within the subject area.
Communication	Cannot communicate, in any way, scientific knowledge, thoughts, and reasoning.	Communicates scientific knowledge, thoughts, and reasoning in an unclear way.	Can communicate scientific knowledge, thoughts, and reasoning in a disorganized way.	Can clearly and effectively communicate scientific knowledge, thoughts, and reasoning.

d. Social and Behavioral Sciences

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Foundation	Does not identify or understand the major concepts and methods relevant to the discipline.	Identifies or describes some of the major concepts and methods relevant to the discipline.	Consistently identifies and describes various concepts and methods utilized within the discipline.	Identifies and describes the various concepts and methods utilized in the discipline in a consistent, accurate and advanced manner.
Critical thinking	Does not apply any techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Applies several techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Consistently applies different techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline.	Applies different techniques, methods, or approaches to examine key elements, biases and influences that shape thoughts within the discipline in a consistent and sophisticated manner.
Communication	Does not utilize critical terminology to express ideas relevant to the discipline.	Utilizes some critical terminology to express ideas relevant to the discipline; but also uses inaccurate or incorrect terms.	Consistently utilizes critical terminology to express ideas relevant to the discipline correctly and accurately; Inaccuracy or incorrect use of terms may occur.	Utilizes critical terminology to express ideas relevant to the discipline in a consistent, accurate and advanced manner.

e. Written Composition

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
Foundation	Fails to illustrate methods and techniques consistent with disciplinary expectations.	Offers a superficial illustration of methods and techniques consistent with disciplinary expectations.	Offers a thorough illustration of methods and techniques consistent with disciplinary expectations.	Offers an advanced or nuanced illustration of methods and techniques consistent with disciplinary expectations.
Critical thinking	Organization fails to reflect an understanding of the subject and audience. Content does not provide a focus and evidence does not support the primary purpose. Multimodal elements are not rhetorically situated within the text or for the reader (i.e., they do not support or advance the central idea, are not framed by the purpose, or arranged for a specific audience, etc.).	Organization reflects a superficial understanding of the subject and audience. Content maintains provides a focus and evidence supporting the primary purpose, although this may be inconsistent. Multimodal elements inconsistently suggest rhetorical purpose (i.e., support or advance the central idea, framed by the purpose, arranged for a specific audience, etc.). but may not be consistently effective.	Organization reflects a thorough understanding of the subject and audience. Content maintains a consistent focus for the most part and provides evidence supporting the primary purpose. Multimodal elements demonstrate rhetorical purpose (i.e., support or advance the central idea, framed by the purpose, arranged for a specific audience, etc.)	Organization reflects an advanced understanding of the subject and audience. Content maintains a consistent focus and provides evidence supporting the primary purpose. Multimodal elements demonstrate an advanced awareness of rhetorical purpose (i.e., support or advance the central idea, framed by the purpose, arranged for a specific audience, etc.)
Communication	Language choice, tone, and style do not indicate an	Language choice, tone, and style indicate an	Language choice, tone, and style indicate a consistent	Language choice, tone, and style indicate an advanced

	understanding or consideration of audience and contextual awareness.	understanding of audience and contextual awareness, although use and structure may be inconsistent.	understanding of audience and contextual awareness.	understanding of audience and contextual awareness.

8.2.b **The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of seeking improvement based on analysis of the results for student learning outcomes for collegiate-level general education competencies of its undergraduate degree programs.** ***(Student outcomes: general education)***

Rationale and Notes

General education is a critical element of undergraduate degree programs, yet the delivery of courses related to general education is often dispersed across multiple academic departments. As a result, there is a tendency for this extremely important part of the undergraduate degree experience to be assessed, revised, and discussed in a haphazard fashion. This standard ensures that general education competencies are specifically addressed by establishing expected learning outcomes, assessing these outcomes, and providing evidence of seeking improvements based on the findings.

The standard does not mandate a specific approach to this outcomes assessment process. The approach is up to the institution, consistent with principles of good practice, the role general education plays in that institution's curricula, and the organizational structure of the institution. The institution is responsible for identifying measures of expected student learning outcomes to determine the extent to which students have attained appropriate college-level competencies.

NOTES

See the Standard 8.2 general discussion as well as this substandard for full coverage of this standard within the Resource Manual. ***Note that "Sampling" does not apply to general education assessment due to the limited number of competencies involved.***

This standard only applies to undergraduate degree programs. The term "collegiate-level" implies that assessment of general education competencies within developmental courses generally is not appropriate. This standard does not apply to noncredit programs.

It is acceptable to implement a schedule of assessment in which only a subset of competencies is evaluated in a given year. It is expected, however, that all competencies would be evaluated within the multiple-year cycle, and that the institution provides evidence of assessment findings and of actions seeking improvement across the full cycle. It is unusual for a multiple-year cycle to exceed three years.

Different institutions use widely different approaches to determine expected general education outcomes for their students, and they may also use very different means to deliver general education. Some institutions have a very prescriptive set of courses, while others offer a smorgasbord of courses. Some institutions augment basic core courses with additional general education outcomes within the major (e.g., writing across the curriculum or discipline-specific critical learning skills). Some institutions collect the bulk of their assessment data regarding general education early in the student's studies, while others rely on assessments closer to the time of graduation. Larger institutions may have multiple approaches across different colleges and schools. Community colleges may have different general education expectations for students earning technical degrees than for those seeking transfer degrees. Some institutions will utilize embedded assignments within broad general

9.3 **The institution requires the successful completion of a general education component at the undergraduate level that:**

(a) is based on a coherent rationale.

(b) is a substantial component of each undergraduate degree program. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours or the equivalent; for baccalaureate programs, a minimum of 30 semester hours or the equivalent.

(c) ensures breadth of knowledge. These credit hours include at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. These courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession. *(General education requirements)* **[CR]**

Rationale and Notes

General education is an integral component of an undergraduate degree program through which students encounter the basic content and methodology of the principal areas of knowledge. This Core Requirement establishes four key principles regarding the general education component of undergraduate degree programs:

- The General education component is based on a coherent rationale.
- General education courses are college level.
- In order to promote intellectual inquiry, general education courses present a breadth of knowledge, not focusing on skills, techniques, and procedures specific to the student's occupation or profession, and are drawn from specific academic areas.
- The general education component constitutes a minimum number of semester hours, or its equivalent, and comprises a substantial component of each undergraduate degree.

It is essential to understand the general education component of the degree program within the context of the institution's mission and within the expectations of a college-level institution. Through general education, students encounter the basic content and methodology of the principal areas of knowledge: humanities and fine arts, social and behavioral sciences, and natural sciences and mathematics. Courses in each of these areas introduce a breadth of knowledge and reinforce cognitive skills and effective learning opportunities for each student. Such courses may also include interdisciplinary studies. It is important, however, that courses selected by students as "general education" do not focus on skills, techniques, and procedures specific to that student's occupation or profession.

The SACSCOC Executive Council adopted the following interpretation in February 2010:

Courses in basic composition that do not contain a literature component, courses in oral communication, and introductory foreign language courses are skill courses and not pure humanities courses. Therefore, for purposes of meeting this standard, none of the above may be the one course designated to fulfill the humanities/fine arts requirement in [this standard].

Note that this interpretation does not preclude the mentioned courses from being part of general education requirements beyond the required courses in the three specifically mentioned areas; while they are "skill courses," these are not skills specific to a particular occupation or profession. Courses that would not be acceptable as meeting this standard are courses such as "dosage calculations" (specific to occupations) or most upper-level courses with multiple prerequisites (lack breadth of knowledge).

The rationale undergirding the courses that meet general education requirements is often published in institutional documents such as the catalog. It is important that institutions have criteria for evaluating courses for inclusion in the core curriculum, both to maintain adherence to the underlying rationale and to ensure the expected breadth of knowledge.

NOTES

In its publications, an institution is obligated to clearly designate the specific general education courses included in the three areas of knowledge: humanities and fine arts, social and behavioral sciences, and natural sciences and mathematics. Publications should clearly indicate or direct students in their options for selecting general education courses and, in particular, those considered pure humanities/fine arts that are in accord with the interpretation above. Finally, the institution should indicate how it ensures that all students follow the pathway for selecting general education courses as described in its publications.

In its assessment of institutions, the SACSCOC review committee will specifically evaluate whether each of the three subparts in the standard have been addressed. This review should specifically determine (with narrative supporting) its findings under part (c), whether credit hours that constitute the general education program at an institution are (1) drawn from and include at least one course from each of the following areas: humanities/fine arts, social/ behavioral sciences, and natural science/mathematics; (2) are consistent with the Executive Council's interpretation cited above; and (3) include courses that do not narrowly focus on those skills, techniques, and procedures specific to a student's particular occupation or profession.

Questions to Consider

- Does the institution have a formal guideline or policy that establishes a rationale for its general education requirements?
- How does the institution ensure that the student's breadth of knowledge acquired through the general education component of the degree program is sufficient and appropriate to its mission?
- What measures does the institution use to ensure that general education represents a substantial component of the undergraduate degree program?

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