

Fall 2022 – Winter 2025

General Education
Taskforce

**Three-year Cycle
Report**

Submitted by
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General Education Program

The General Education Program is designed to foster critical skills by helping students develop the ability to solve problems, 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; and social, biological, and physical science requirements. As a result of the General Education Program, students develop effective communication skills in speaking, listening, writing, reading, and critical interpretation. The program also helps students place ideas in their proper context and appreciate the role of different cultural traditions.

All students are required to complete general education requirements. Students normally complete these requirements by the end of their junior year through a series of courses in the areas of written communication; mathematics; arts and humanities (including literature, history, ethics, and general humanities the performing arts); social and behavioral sciences; and biological and physical sciences.

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.

Learning Outcomes

The General Education program learning outcomes are based on three (3) pillars (categories), aligned with the mission of NSU and the Gen Ed program: Foundation, Critical Thinking, and Communication. 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.

Table 1. Learning Outcome based on 3 pillars.

Domains

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

Domain	Prefixes Accepted	Credits
Arts and Humanities	ARTS, DANC, FILM, HIST, HUMN, LITR, MUSC, PHIL, SPCH, THEA, WRIT, or in a Foreign Language.	6
Mathematics	MATH at or above MATH 1040	6
Science	BIOL, CHEM, ENVS, MBO, NEUR, SCIE, or PHYS.	6
Social and Behavioral Sciences	ANTH, COMM, ECN, GEOG, INST, POLS, PSYC, or SOCL.	6
Written Composition	COMP at or above COMP 1500.	6

Table 2. General Education Requirements and Domains.

General Education Taskforce

- Maria Ballester, *Chair*
- Meline Kevorkian
- Ramina Benjamin
- Hyungkee Baek
- David Griffin
- Gregory Simco
- 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.*

In 2021, a new General Education Taskforce was established with members from various academic colleges across the Nova Southeastern University (NSU). The taskforce was initially tasked with developing and recommending an assessment process for Fall 2021, that would serve as evidence of student learning for the Gen Ed's learning outcomes. We successfully accomplishing this task and introduced a series of clear and

Three-year Cycle Achievements

- ◆ The three-year cycle has been successfully implemented from Fall 2022 until Winter 2025 using clear standards and methodologies put in place by the General Education taskforce.
- ◆ We assessed the General Education learning outcomes, using assessment rubrics created for each domain. These new learning outcomes are based on three (3) pillars, aligned with the mission of NSU: Foundation, Critical Thinking, and Communication (Appendix 1).
- ◆ Domain representatives were responsible for overseeing the assessment process while helping faculty and chairs.
- ◆ We assessed at least 20% of the student population in a broad selection of courses that included daytime, evening, online sections.
- ◆ We selected and used a series of core courses to assess each domain. These courses are based on a list we generated while evaluating the General Education courses used as core courses in every undergraduate program at NSU.
- ◆ Deans and chairs assisted us in identifying the final list of courses to be assessed, as well as the faculty members who volunteered to participate. They

practical guidelines and recommendations as well. One of these recommendations was the introduction of "Three-year Cycles", to ensure continuous quality improvements on our assessment methods and the General Education program in general. This report examines the cycle that started on Fall 2022 until Winter 2025.

also provided input on the development of the assessment rubrics.

- ◆ Faculty was involved in the creation of the artifacts/items used.
- ◆ Following SACSCOC guidelines, we streamlined the [list of General Education courses available](#). These courses do not narrowly focus on skills, techniques, and procedures specific to a particular field. These courses are at the 1000 or 2000 level and closely match the learning outcomes of General Education.
- ◆ We updated the report document (Excel file) to facilitate data gathering, and report writing for all courses assessed.
- ◆ We set standard criteria for expectation targets on student performance:

AIP: average individual proficiency threshold of 2.5 points was established.

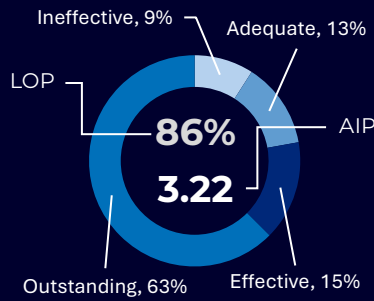
LOP: learning outcome proficiency target was set at 75%. In other words, we expect that at least 75% our students score at or above an AIP of 2.5 points.

- ◆ We updated the [General Education webpage](#). It is now available to the NSU community. It also has current information about the program.

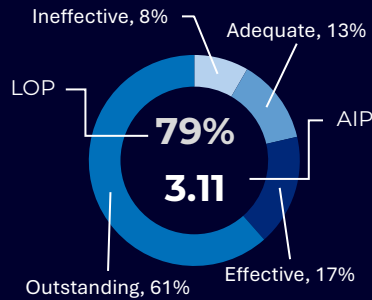
At a Glance

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 assessment generated a considerable body of evidence that our students are meeting successfully all General Education learning outcomes. We can confidently say that our goals for the Fall 2022 – Winter 2025 three-year cycle were met.

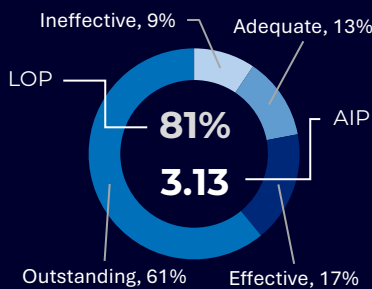
Foundation



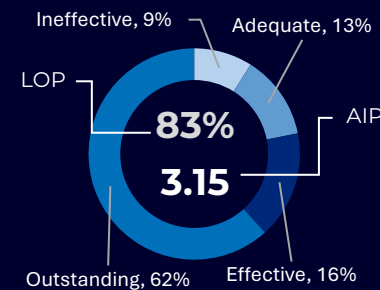
Critical Thinking



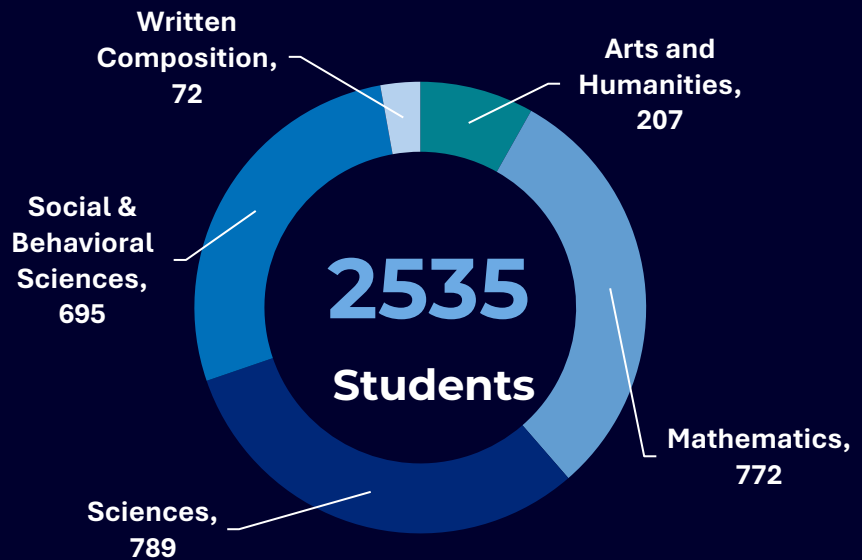
Communication



Overall



2022–2025 Results



80 Faculty Members



28 Reviewers



129 Course Sections



175 Artifacts



356 Items

Our goals:

AIP (average individual proficiency): 2.5 points or above.
LOP (learning outcome proficiency): 75% or above.

Assessment Analysis Summary

Please refer to the appendices 3, 4, and 5 for complete analysis and report documents on each academic year since Fall 2022. Table 3 below shows the results for all the assessment rounds since Fall 2014. The table includes the averages for the pre-2021 rounds and our current 3-year cycle. For comparison purposes, we have chosen two reference points, the pre-2021 average and Fall 2021 which was the first assessment after a two-year hiatus (2018 – 2020).

Trends

To assess the presence of a monotonic trend in each domain, we performed a Mann-Kendall trend test on all our data (Table 3). We determined a trend using two parameters: the sign of the τ -value (tau) indicates an increasing (+) or decreasing (–) trend, and the p -value.

Arts & Humanities: $\tau = -0.309$ with a p -value of 0.22. Although τ is negative, the p -value indicates that there is **no significant trend**.

Mathematics: $\tau = +0.5344$ with a p -value of 0.016. It has an **increasing trend** that is significant.

Science: $\tau = +0.394$ with a p -value of 0.086. It also has an **increasing trend** that is significant.

Social & Behavioral Sciences: $\tau = +0.809$ with a p -value of 0.001225. It has a very significant **increasing trend**.

Written Composition: $\tau = -0.382$ with a p -value of 0.121. Although τ is negative, there is **no significant trend**.

Overall Assessment 2022 – 2025

At the end of this round, we close our **three-year cycle**. During this assessment cycle, participating faculty assessed:

- **2535 students**, more than all pre-2021 assessment rounds put together.
- **42 courses**, divided into **129 sections**.
- **175 artifacts**, divided into **356 items** selected/created by faculty of each domain and standardized for each course.
- An overall **AIP of 3.15** points was an improvement of 8.6% and 7.5% when compared to pre-2021 average and Fall 2021 respectively.

Assessment 2022 – 2023

Between Fall 2022 and Winter 2023 we performed our **first assessment** round. Faculty assessed:

- **744 students**, third highest since 2014.
- **14 courses**, divided into **40 sections**.
- *Average individual proficiency (AIP) of 3.10* points increased by 6.6% and 5.5% respectively compared to pre-2021 average and Fall 2021, respectively.
- Individually, the domains fared well, as can be seen in Table 3.

Assessment 2023 – 2024

Our **second assessment** was carried out during the Fall 2023 and Winter 2024. Faculty assessed:

- **942 students**, highest of all assessments.
- **14 courses**, divided into **47 sections**.
- Overall, the **AIP (3.10** points) increased by 6.7% and 5.7% compared to pre-2021 average and Fall 2021 respectively.
- Individually, the domains fared well compared to Fall 2021, as can be seen in Table 3.

Assessment 2024 – 2025

Our **third and final assessment** for this cycle was performed during Fall 2024 to Winter 2025, we carried out our round, closing our **three-year cycle**. Participating faculty assessed:

- **849 students**.
- **14 courses**, divided into **42 sections**.
- The overall **AIP of 3.28** points was an improvement of 12.3% and 11.3% compared to pre-2021 average and Fall 2021 respectively.
- Compared to Fall 2021, the AIP of all domains show a positive percentage difference

Artifacts

The artifacts used during this assessment were course embedded and designed/chosen to measure the General Education learning outcomes through a series of assessment rubrics, divided into measurable objectives. Below, all artifacts used during this three-year cycle are shown.

Assessments

Academic year 2022 – 2023		Academic year 2023 – 2024		Academic year 2024 – 2025	
55 artifacts, divided into 107 items selected/created by faculty of each domain.		65 artifacts, divided into 128 items selected/created by faculty of each domain and standardized for each course.		55 artifacts, divided into 121 items selected/created by faculty of each domain and standardized for each course.	
Course	Artifacts / # Items	Course	Artifacts / # Items	Course	Artifacts / # Items
Arts and Humanities					
HIST 1050	1 Essay / 3 1 Exam / 3	HIST 1050	1 Essay / 3 1 Exam / 3	HIST 1050	1 Essay 1 / 3 1 Essay 2 / 3
PHIL 1010	1 Exam / 6 1 Essay / 3	LITR 2031	1 Midterm Essay / 3 1 Final Essay / 3	LITR 2031	1 Textual Analysis / 3 1 Final Essay / 3
ARTS 1000	1 Discussion A / 3 1 Discussion B / 3	ARTS 1000	1 Discussion A / 3 1 Discussion B / 3	ARTS 1000	1 Discussion A / 3 1 Discussion B / 3
Mathematics					
MATH 1040	2 Exam / 6 2 Midterm Exam 3 3 Final Exam / 5 1 Test Chapter 6 / 2 1 Test Chapter 7 / 2	MATH 1040	2 Assignments / 6 2 Exams / 6 1 MyLab / 6 3 Final Exam / 4 1 Test 1 / 1 3 Test 2 / 3 1 Test 3 / 1 1 Test 4 / 1 2 Test 7 / 2	MATH 1250	2 Test one / 3 2 Test three / 1 1 Midterm / 1 4 Final Exam / 3 1 Quiz 1 / 1 1 Quiz 2 / 1 1 Test 3 / 1 1 Test 4 / 1 1 MyLab Math / 6
MATH 1200	1 Test 3 / 2 1 Test 4 / 1 1 Test 5 / 1 1 Final Exam / 2	MATH 2100	2 Final Exams / 6	MATH 2020	2 Exams / 6 3 Midterms / 6 3 Final Exams / 6
MATH 2020 / MATH 2020H	2 Midterm / 5 2 Final Exam / 5 1 Project / 2	MATH 2020 / MATH 2020H	1 Test / 6 2 Test 2 / 3 4 Final / 10 1 Exam 1 / 1 1 Exam 2 / 1 1 Exam 3 / 1 1 Exam 5 / 2	MATH 2100 / MATH 2100H	1 Exam / 6 1 Midterm / 3 1 Final Exam / 3 1 T1 / 1 1 T2 / 1 1 T3 / 3 1 T4 / 1
Science					
BIOL 1040	1 Final Exam / 6	BIOL 1500	2 Final Exams / 5 2 Lab Reports / 2	BIOL 1500	4 Final Exams / 6
BIOL 1500	2 Final Exam / 5 2 Lab Report / 2	CHEM 1300	2 ACS Final Exams / 5 2 Lab Practical / 2	CHEM 1300	2 ACS Final Exams / 5 2 Lab Practical / 2
CHEM 1300	2 ACS Final Exams / 5 2 Lab Practical / 2	PHYS 2350	1 Final Exam / 6	PHYS 2350	1 Final Exam / 6
Social and Behavioral Science					
PSYC 1020	9 Final Exams / 6	PSYC 1020 /PSYC 1020H	8 Exam / 6	PSYC 1020 /PSYC 1020H	3 MC Quiz / 12
INST 1500	1 Research paper / 3 1 Essay on Final / 3	POLS 1010	1 Research paper / 3 1 Essay on Final / 3	INST 1500	1 Global Issue paper / 3 1 UN Policy paper / 3
ECN 2025	1 Final Exam / 6	ECN 2025	1 Final Exam / 6	ECN 2020	2 Final Exam / 6
Written Composition					
COMP 2000	4 Midterm Essay / 3 4 Final Essay / 3	COMP 2000	4 Midterm Essay / 3 4 Final Essay / 3	COMP 2000	3 Final Essay / 3
COMP 2000H	1 Midterm Essay / 3 1 Final Essay / 3	COMP 2000H	1 Midterm Essay / 3 1 Final Essay / 3	COMP 2000H	1 Final Essay / 3

Semester	Art and Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition	AIP	LOP	Students
2014 Fall	2.86	2.77	3.13	2.88	2.87	2.9		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	3.3	2.91		279
2016 Winter	N/A	2.17	3.03	N/A	N/A	2.6		102
2016 Fall	2.93	2.06	3.18	N/A	2.48	2.66		195
2017 Winter	2.7	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	3.2	2.88	2.77		275
Pre-2021 Averages	2.83	2.53	3.03	2.81	2.89	2.80		1879
2021 Fall	2.60	2.88	3.28	3.23	2.64	2.93	89%	803
2022 Fall - 2023 Winter	2.92	2.94	3.45	3.30	2.88	3.10	82%	744
2023 Fall - 2024 Winter	2.67	3.29	3.37	3.45	2.73	3.10	82%	942
2024 Fall - 2025 Winter	2.85	3.49	3.57	3.64	2.85	3.28	94%	849
3-Year Cycle Average	2.81	3.24	3.47	3.46	2.82	3.16	86%	2535

Table 3. Summary of the results of each domain from the Fall 2014 until Winter 2024.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	71	72%	2.92	3	3	6	21
Mathematics	167	72%	2.94	3	8	18	36
Sciences	195	96%	3.45	3	12	9	20
Social and Behavioral Sciences	283	94%	3.30	4	12	12	18
Written Composition	28	89%	2.88	2	5	10	12
Total Results	744	88%	3.10	15	40	55	107

Table 4. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains. Fall 2022 to Winter 2023.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	65	45%	2.67	3	3	6	18
Mathematics	340	79%	3.29	3	15	29	60
Sciences	222	94%	3.37	3	13	9	20
Social and Behavioral Sciences	291	98%	3.45	3	11	11	18
Written Composition	24	75%	2.73	2	5	10	12
Total Results	942	86%	3.10	14	47	65	128

Table 5. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains. Fall 2023 to Winter 2024.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	71	66%	2.85	3	3	6	18
Mathematics	265	92%	3.49	3	12	29	54
Sciences	372	96%	3.57	3	18	9	19
Social and Behavioral Sciences	121	95%	3.64	3	5	7	24
Written Composition	20	80%	2.85	2	4	4	6
Total Results	849	92%	3.28	14	42	55	121

Table 6. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains.

Comparison Between Delivery Modes

Many courses offered at NSU offer two main delivery modes: face-to face or online. In fact, some courses offer both types of delivery. One of our concerns when we started our tenure was to see if students' learning had suffered because of the pandemic period (2020 – 2021) when students took only online classes. In our report for Fall 2021 we compared not only face-to face (daytime) students against online ones, but we also included students that take evening courses. We were gladly surprised that there were no major differences between delivery modes which talks greatly about our students and faculty.

During this 3-year cycle we continue to monitor the differences between daytime, evening, or online courses achievements. Table 7 below, shows the main comparison results between these delivery methods separated by General Education domain and overall results. We used a Welch's *t*-test –a two-sample assuming unequal variance– to check the data. We calculated the *p*-value to determine if the difference between the two means is statistically significant ($p < 0.05$) or not ($p > 0.05$). We also determined the percentage difference between the means.

Daytime/Evening: there is no statistically significant differences in any of the domains, except for *Science* which shows a statistical difference in the means (8.2%) in favor of daytime students. Although *Written Composition* shows a 7.1% difference, the *p*-value (0.230) did not prove it was statistically significant. However, the overall results show an 8.4% significant difference in favor of the daytime students.

Daytime/Online: results were mixed for these two groups of students. The *Arts & Humanities domain* showed the biggest significant difference (14.1%) followed by *Social and Behavioral Sciences* (9.2%) and *Science* (3.3%). These three domains' results lead to an overall result (7.9% mean difference) in favor of the daytime students.

Evening/Online: similar to the previous analysis, results were mixed with both *Social and Behavioral Sciences* (7%) and *Science* (7%) domains show a statistical difference in favor of the evening students. *Mathematics* and *Written composition* have mixed results in terms of what group of students is favored, although the results are not statistically different. As in the other two analysis, the overall result show a statistical difference of 7.9% in favor of the evening students.

Domain	Daytime/Evening				Daytime/Online				Evening/Online			
	Daytime	Evening	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference	Evening	Online	% Mean diff	Statistical difference
Arts and Humanities					2.87	2.49	14.1%	Yes				
Mathematics	3.09	3.10	0.3%	No	3.09	3.18	2.7%	No	3.10	3.18	2.4%	No
Science	3.43	3.72	8.2%	Yes	3.43	3.32	3.3%	Yes	3.45	3.21	7.0%	Yes
Social and Behavioral Sciences	3.45	3.53	2.2%	No	3.53	3.21	9.2%	Yes	3.45	3.21	7.0%	Yes
Written Composition	2.85	2.65	7.1%	No	2.65	2.73	2.9%	No	2.85	2.73	4.3%	No
Overall	3.31	3.04	8.4%	Yes	3.29	3.04	7.9%	Yes	3.29	3.04	7.9%	Yes

Table 7. The differences between the means of daytime, evening, or online courses.

Item Analysis

As mentioned before, faculty design the items to be used in the artifacts we carried out during this cycle. After all the data was gathered, we analyzed the quality of these questions in three particular courses that used multiple-choice questions: (a) CHEM 1300, a general chemistry course that used American Chemical Society standardized test questions, (b) BIOL 1500, an introductory biology course which used questions developed by the Department of Biological Sciences, and (c)

PSYC 1020, an introductory psychology course that used test questions developed within the Department of Psychology and Neuroscience.

One of the reasons to carry this analysis is the argument against employing multiple-choice questions in general education assessments since they have a dichotomous nature which can fail to evaluate conceptual comprehension and higher-order cognitive abilities. However, we developed a polytomous method,

structured around a set of rubrics that categorized understanding into our 4-point scale to assess students' level of knowledge. Faculty created these rubrics for every question. Thus, each multiple-choice question had four options: the correct one that receives four points, the next two levels receive three and two points (effective and adequate), and the obvious incorrect answer receives one point.

The method we used to determine if an item (question) could discern between performance levels, is called Item Response Theory (IRT). The method models the nonlinear relationship between the examinee's knowledge level θ (also called trait or ability) and the probability $P(\theta)$ of having a correct response. In our case, we used a polytomous "graded" method that measures the discrimination parameter (called the slope or a) and the difficulty parameters (or abilities) b_1, b_2, \dots, b_{m-1} where m is the number of options.

Specifically, parameter a measures how well an item differentiates respondents with different levels of latent knowledge θ . If a question has a low discrimination, it is not capable of discerning between skilled students and the rest, regardless of the difficulty of the question. In similar fashion, questions that are either too easy or too difficult provide no information in evaluating knowledge.

These parameters can also be visualized using an item level information plot. Higher levels of information, which correspond to higher values of a , lead to more accurate score estimates. In other words, the larger parameter a is, the more information the item provides.

Thus, our analysis looks for low discrimination items so they can be discarded or fixed before being them in our next assessment cycle.

	a	b_1	b_2	b_3
CHEM 1300				
Item.1	0.983	-4.242	-2.318	0.127
Item.2	-0.042	40.282	37.860	28.857
Item.3	1.301	-1.876	-0.123	0.144
Item.4	0.779	-3.655	-0.998	-0.595
Item.5	0.394	-3.534	-2.432	-0.043
Item.6	0.559	-2.661	0.145	2.494
BIOL 1500				
Item.1	0.725	-3.441	-2.805	-2.629
Item.2	0.911	-4.495	-2.898	-2.529
Item.3	1.727	-3.031	-2.040	-1.595
Item.4	0.848	-6.682	-3.128	-2.613
Item.5	1.042	-2.118	-2.029	-1.006
Item.6	1.392	-2.802	-2.121	-0.892
PSYC 1020				
Item1	0.353	-4.672	-0.290	-0.213
Item2	0.603	-4.319	-2.886	-1.732
Item3	0.662	-5.409	-3.467	-1.564
Item4	0.817	-3.416	-2.955	-2.010
Item5	1.434	-2.254	-1.783	-1.298
Item6	0.685	-5.751	-3.556	-1.637

Table 8. Results for the three courses analyzed using an IRT polytomous method.

CHEM 1300

In table 8, we can see that parameter a is quite low for items 2 and 5. Furthermore, item 2 shows extremely big numbers for the b parameters. The same result can be deduced from Fig. 1, which shows basically flat lines for these two items, indicating very low discrimination information. Item 6 appears to show certain similarities with the items 2 and 5, although the discrimination value is not too low. On the other hand, items 1, 3 and 4 had the highest discrimination values and thus provide the highest amount of statistical information. Items tended to provide the most information between -4.0 to $+2$ in the theta range. We can conclude that items 2 and 5 (and perhaps item 6) need to be revised or changed for our next three-year assessment cycle.

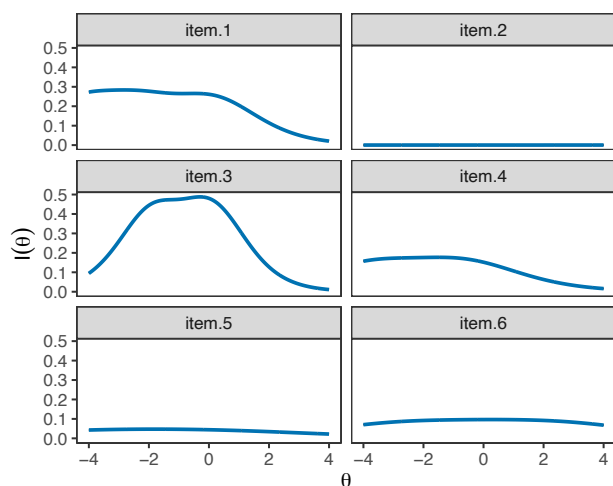


Figure 1. Item level information plot for CHEM 1300 questions.

BIOL 1500

For biology we only see a low discrimination values in item 1. However, it is well within our parameters, and thus we do not have any recommendations for changes. Item 3 had the highest slope and is, therefore, the more informative item. Items tended to provide most information between -4.0 to $+1$ in the theta range.

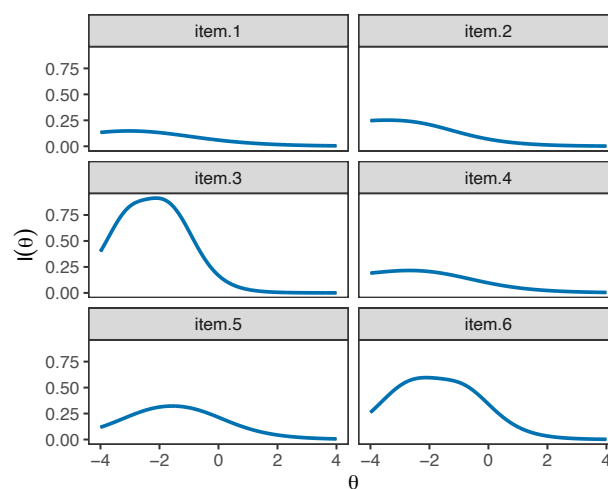


Figure 2. Item level information plot for BIOL 1500 questions.

PSYC 1020

Finally, in psychology only item 1 needs to be revised. Its a parameter is the lowest of the six items and its information plot is quite flat indicating no information. Item 5 had the highest discrimination value (and peak in the plot) and provides the highest amount of statistical information. Items tended to provide the most information between -4.0 to $+1$ in the theta range as in BIOL 1500. We recommend updating item 1, and perhaps revise items 2, 3, and 6 as well.

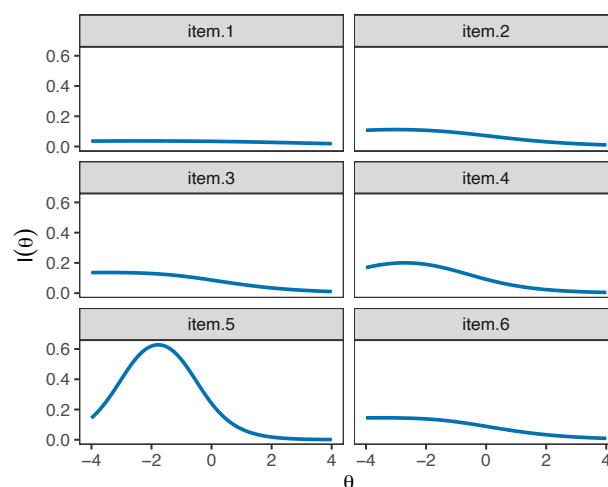


Figure 3. Item level information plot for PSYC 1020 questions.

Three-year Cycle

Phase 1 (Fall 2022/Winter 2023)	Phase 2 (Fall 2023/Winter 2024)	Phase 3 (Fall 2024/Winter 2025)
<ul style="list-style-type: none"> Revised the new LOs and assessment rubrics. Began the process of reviewing/cleaning the Gen Ed courses list and set a general guideline. Discussed establishing core courses for assessment purposes. Involved faculty and department chairs in the course review process, following the guideline created. Discussed ideas to educate the NSU community about Gen Ed. 	<ul style="list-style-type: none"> Continued reviewing the Gen Ed courses list. Feedback from faculty and department about the course review process. Began the process of updating the web space for Gen Ed. Emphasis on educating our community about its importance. 	<ul style="list-style-type: none"> Discussed results of the course review process. Reviewed results of the Gen Ed webpage. Discussed possible changes. Wrote a final report for this cycle. Close the cycle.

Table 9. General Education three-year program improvements plan.

Our current assessment plan is based on a three-year periodicity. The cycle, that ran from Fall 2022 until Winter 2025, was established with a clear set of rules and guidelines to ensure optimum continuous quality improvements on our assessment methods and the General Education program in general. We are pleased to report that we have successfully completed all three phases of our first three-year cycle. (Table 8).

Assessment Plan

The main evidence that the General Education program has attained its goals is through an assessment plan and its results. Our primary goal was to determine whether students have demonstrated their proficiency in the General Education learning outcomes, rather than assessing the courses chosen or the performance of faculty members.

We followed a schedule that allowed us to design, implement, and analyze the assessments. Assessments covered all the domains, and in general follow a similar procedure as the one we established during the Fall 2021 assessment round. However, our assessment plan is divided in two parts that are carried out through the entire cycle (Table 9):

Fall semester–Assessment A

We assessed the *Mathematics, Science*, first half of *Social and Behavioral Science (Psychology)* domains.

Winter semester–Assessment B

We assessed the *Arts and Humanities*, second half of *Social and Behavioral Science*, and *Written Composition* domains.

Domains	Type	2022 – 2023			2023 – 2024			2024 – 2025		
		Fall	Winter	Summer	Fall	Winter	Summer	Fall	Winter	Summer
Arts & Humanities	Assessment		⊗			⊗			⊗	
	Analysis			A			A			A
Mathematics	Assessment	⊗			⊗			⊗		
	Analysis		A			A			A	
Science	Assessment	⊗			⊗			⊗		
	Analysis		A			A			A	
Social & Behavioral Science	Assessment	⊗	⊗		⊗	⊗		⊗	⊗	
	Analysis		A	A		A	A		A	A
Written Communication	Assessment		⊗			⊗			⊗	
	Analysis			A			A			A

Table 10. General Education assessment Schedule 2022-2025. An **A** stands for analysis, and an ⊗ stands for assessment.

Core Courses

In Fall 2021 assessment round, participating faculty were asked to (1) indicate the extent to which their course aligns to each of the General Education learning outcomes, and (2) indicate the emphasis in which these learning outcomes are been taught. In general, the responses overwhelming showed that the courses complied and addressed the learning outcomes.

Our next step was to check the relevance of the courses we assessed previously. For that, we made a thorough review of the 55 undergraduate programs NSU currently offered in 2022. The study was based on the Four-year curriculum plans suggested by each program. Although this analysis largely confirmed most of our previous assessment choices, it also showed that some courses need to be replaced. Table 10 below shows the suggested/required courses.

Based on this information, we decide to use three core courses per domain that were (a) frequently used in many programs and (b) had the greatest number of students enrolled. As the table shows, we expanded our normal choices housed in the Halmos College of Arts and Sciences and the College of Psychology. Thus, we

selected a couple of courses from the College of Business and Entrepreneurship. Additionally, to reach more students we used other courses from the list. Some courses used that are low on the list, as ARTS-1000, were requested by department chairs and might change in the future.

Courses Assessed

For each assessment round, we selected a set of courses per domain that met our learning outcomes and were part of the list in Table 10 below. Table 11 lists all these courses and also shows how we have settled for a set of core courses. As mentioned before, we also wanted to include a large sample of students to represent as much as possible the typical NSU student. For that reason, we chose a number of sections per course that depended on the number of students enrolled in it. We decided that around 20% of the course's student population to be assessed was a big enough population to make statistical analysis with confidence.

Arts and Humanities		Mathematics		Science		Social and Behavioral Sciences		Written Composition	
HIST 1050	10	MATH 2020	23	BIOL 1500	10	PSYC 1020	13	COMP 1500	22
HIST 1170	4	MATH 1040	18	CHEM 1300	9	ECN 2025	10	COMP 2000	22
LITR 2010	4	MATH 2100	10	PHYS 1020	7	ECN 2020	8		
LITR 2020	4	MATH 2200	7	BIOL 1400	6	POLS 1010	8		
LITR 2021	4	MATH 1050	6	CHEM 1310	6	SOCL 1020	3		
LITR 2030	4	MATH 1200	3	PHYS 2350	6	GEOG 2050	2		
ARTS 1200	3	MATH 1250	3	BIOL 1510	5	INST 1500	2		
ARTS 2050	3			CHEM 2400	4	POLS 1200	2		
LITR 2031	3			CHEM 2410	4	POLS 2010	2		
PHIL 1010	2			PHYS 2360	4				
ARTS 1000	0			PHYS 2400	3				

Table 11. Data gathered for most suggested/required courses in General Education based on NSU 55 undergraduate programs. Only courses with 3 or more programs using it are listed, with the exception of Social & Behavioral Science. Courses in blue were used as core courses during the assessment rounds. Courses in light blue were used sporadically.

Assessment	Arts and Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition
Fall 2022	HIST-1050	MATH 2020/H	BIOL 1500	PSYC 1020/H	
Winter 2023	PHIL-1010	MATH 1200	BIOL 1040	ECN-2025	COMP 2000/H
	ARTS-1000	MATH 1040	CHEM 1300	INST 1500	
Fall 2023	HIST-1050	MATH-2020	BIOL-1500	PSYC 1020/H	
Winter 2024	LITR-2031	MATH-2100	CHEM-1300	ECN-2025	COMP 2000/H
	ARTS-1000	MATH-1040	PHYS-2350/H	POLS 1010	
Fall 2024	HIST-1050	MATH-2020/H	BIOL-1500	PSYC 1020/H	
Winter 2025	LITR-2031	MATH-2100	CHEM-1300	ECN-2020	COMP 2000/H
	ARTS-1000	MATH-1250	PHYS-2350/H	INST 1500	

Table 12. General Education courses selected for assessment per academic year.

Methodology

In our previous assessment round, we standardized the process, setting scoring rules and the type of artifacts we will use. We subsequently developed a guideline that every domain followed and trained the participating faculty to oversee the assessment for each of their selected courses, gather the results, analyze the data, and deliver a brief report to us. (Appendix-2).

Artifacts and Items

We use the term **artifact** to name a direct measure (an assignment or an exam, for example), divided into specific tasks/questions, we 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 cycle were **course embedded**. And were designed/chosen to measure the General Education learning outcomes through a series of assessment rubrics divided into **measurable objectives**. These artifacts should be part of the regular assignments of the course and not a special assignment meant only for the General Education process. Courses can also use multiple measures to assess any individual 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).

Process

Faculty had an important role in deciding which artifact(s) to use during the assessment process. Assisted by the domain representatives, faculty teaching met and decided which assessment items to use. The process was divided between faculty teaching the same course, as they are experts in their fields. For items such as multiple-choice questions, a rubric was developed for each of them. Faculty also had the freedom to embed these questions in the artifact of their choice.

Analysis and Conclusions

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

Average Individual Proficiency (AIP) threshold.

This is the score that determines if an individual student has met our targets. Our goal is for students to have an average of 2.5 points out of 4. This means a student's performance is

considered successful if the AIP is "*between adequate and effective*" or above.

Learning Outcomes Proficiency (LOP) target.

This is the percentage of students expected to meet or exceed the average individual proficiency target. This percentage was set to 75%. In other word, our goals are to have 75% 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.

Closing the Cycle

We believe that feedback is vital for our assessment process as it will help us improve it and ensure that our methods are working. Thus, at the end of the assessment period, we ask participating faculty members to include in their reports an analysis of the data and a conclusion with any observations about the process. Additionally, data collected from this activity was further analyzed for patterns and trends related to achievement of learning outcomes. After each academic year, these results and comments are included in partial reports that it is later distributed to the domain representative, participating faculty, and department chairs for their evaluation and review. Their feedback is essential to write a final version of the report. At the end of the 3-year cycle, the taskforce will additionally write a general report with an extended analysis, performance indicators, and suggestions for the following cycle.

Each final approved version is sent to the Provost's Office, college deans, department chairs, and participating faculty. Additionally, it will also be available for all NSU members on the [General Education webpage](#). We hope these document opens up wide discussions about the role of General Education in student learning, and how to improve it.

Key Contributors

The implementation of the three-year cycle could not have been possible without the invaluable contributions of deans, department chairs, and most importantly, faculty. The following list compiles the courses assessed and the individuals involved during these three years. We extend our sincere gratitude to each and every one of them for their indispensable assistance and dedication. Without their support, it would have been an impossible task to achieve our objectives.

Arts and Humanities		Domain representative: Yvette Fuentes	
Halmos College of Arts and Sciences		Robin Cooper	
<i>Department of Humanities and Politics</i>		<i>Nelson Bass</i>	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	<i>Reviewers</i>
	HIST 1050 The United States: From Settlement to Superpower		
Winter 2023	D01	Teng Li	David Kilroy and Katy Doll
Winter 2024	D01	Teng Li	Yair Solan and Vicki Toscano
Winter 2025	D01	Teng Li	Charles Zelden and Yvette Fuentes
	LITR 2031 World Literature II		
Winter 2024	L01	Ying Ma	Marlisa Santos and Joanne Pol Urrechaga
Winter 2025	D01	Ying Ma	Yair Solan and Marlisa Santos
	PHIL 1010 Introduction to Philosophy		
Winter 2023	D01	Jeremy Weissman	Darren Hibbs and Vicky Toscano
<i>Department of Communication, Media, and the Arts</i>		<i>Shanti Bruce</i>	
	ARTS 1000 Art and Society		
Winter 2023	L03	Carlo Ricchi	Bill Adams and Elana Lanczi
Winter 2024	L03	Carlo Ricchi	D Gelbmann and Bill Adams
Winter 2025	L01	Jihong Adams-Park	Jihong Park and Bill Adams

Table 13. Arts & Humanities domain courses. Includes domain representative, deans, chairs, and participating faculty.

Science		Domain representative: Victor Castro Junca	
Halmos College of Arts and Sciences		Robin Cooper	
<i>Department of Biological Sciences</i>		<i>Emily Schmitt Lavin</i>	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	
	BIOL 1500 Biology I/Lab		
Fall 2022	D06, D07, D08 E05, E06	Katie Crump Sabina Joseph	
Fall 2023	D04, D05, D06 E01, E02, E03	Katie Crump Adriana Alegre	
Fall 2024	D01, D02, D03 D10, D11, D12 D13, D14, D15 E07, E08, E09	Adriana Alegre Adriana Alegre Adriana Alegre Andrew Ozga	
Fall 2022	BIOL 1040 Environmental Studies LO1	Adriana Alegre	
<i>Department of Chemistry and Physics</i>		<i>Reza Razeghifard</i>	
	CHEM 1300 General Chemistry I/Lab		
Fall 2022	D05, D06, D07 E03, E04, E05	Maria Ballester Graeme Gardner	
Fall 2023	D05, D06, D07 E03, E04, E05	Maria Ballester Graeme Gardner	
Fall 2024	D07 D13, D15	Maria Ballester Zahilyn Roche Allred	
	PHYS 2350 General Physics I/Lab		
Fall 2023	D01, D02	Victor Castro Junca	
Fall 2024	D01, D02	Victor Castro Junca	

Table 14. Science domain courses. Includes domain representative, deans, chairs, and participating faculty.

Mathematics		Domain representative: Eric Samansky	
Halmos College of Arts and Sciences		Robin Cooper	
Department of Mathematics		Jason Gershman	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	
	MATH 1040 Algebra for College Students		
Fall 2022	D03, D08	Iuliana Stanculescu	
	D19, D20	Miguel Montanez-Martinez	
	L10	Teresita Lemus	
Fall 2023	D02, D06	Isabelle Kumar	
	D12, 23	Mario Nunez	
	E02	Ozkan Kesinkaya	
	L06, L07	Julienne Kabre	
	L13	Abushieba Ibrahim	
	MATH 2020 Applied Statistics		
Fall 2022	D05	Matthew He	
	D02H	Radleigh Santos	
Fall 2023	D01H	Jason Gershman	
	D03, D05, D06	Ginny Tesser	
	L07	Jing Chen	
Fall 2024	D03, D04	Matthew He	
	E01	Heather Hanson	
	L01, L02	Fuzhen Zhang	
	MATH 2100 Applied Statistics		
Fall 2023	D04	Eric Samansky	
	L03	Eric Samansky	
Fall 2024	L01	Evan Haskell	
	D04	Abdelkrim Bourouihiya	
	D01H	Ricardo Carrera	
	MATH 1200 Precalculus Algebra		
Fall 2023	L02	Abdel Bourouihiya	
	MATH 1250 Trigonometry		
Fall 2024	D03, D04	Lei Cao	
	E01	Abushieba Ibrahim	
	L03	Nargess Hakim	

Table 15. Mathematics domain courses. Includes domain representative, deans, chairs, and participating faculty.

Written Composition		Domain representative: Kelly Anne Concannon Mannise	
Halmos College of Arts and Sciences		Robin Cooper	
Department of Communication, Media, and the Arts		Shanti Bruce	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	<i>Reviewers</i>
	COMP 2000/2000H Advanced College Writing / Honors		
Winter 2023	D26	Melissa Bianchi	
	D29	Mary Adele Leon	Claire Lutkewitte, Mario D'Agostino, and Logan Bearden
	L07	Daniel Malinconico	
	D27	Janine Morris	
	D02H	Star Vanguri	
Winter 2024	D05	Rachel Panton	Adele Leon, Logan Bearden
	E01	Billy Jones	
	L03	Juliette Kitchens	
	L05	Shoorangiz Rahimi	
	D02H	Star Vanguri	
Winter 2025	E02	Billy Jones	Janine Morris, Claire Lutkewitte, and Eric Mason
	L08	Carrie Katz	
	L03	Logan Bearden	
	D02H	Star Vanguri	

Table 16. Written Composition domain courses. Includes domain representative, deans, chairs, and participating faculty.

Social and Behavioral Sciences		Domain representative: Aya Shigeto	
College of Psychology		Karen Grosby	
Department of Psychology and Neuroscience		Jaime Tartar	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	
	PSYC 1020 Introduction to Psychology		
	D06, D10, D23	Myron Burns	
Fall 2022	L04, L05	Michael Durnam	
	D07	Justin Landy	
	D18, D21, E01	Leticia Lopez	
Fall 2023	D01H	Leanne Boucher Gill	
	D04, D07	Timothy Razza	
	D11, D18	Aya Shigeto	
	E01, D16, D21	Leticia Lopez	
Fall 2024/Winter 2025	D01H	Leanne Boucher Gill	
	D08	Timothy Razza	
	D02	Glenn Scheyd	
College of Business and Entrepreneurship		Andrew Rosman	
Department of Finance and Economics		Albert Williams	
	ECN 2025 Principles of Macroeconomics		
Winter 2023	D01, D02	David Cho	
Winter 2024	D01, D02	David Cho	
	ECN 2020 Principles of Microeconomics		
Winter 2025	D02	Albert Williams	
Halmos College of Arts and Sciences		Robin Cooper	
Department of Humanities and Politics		Nelson Bass	
<i>Semester</i>	<i>Course/Section</i>	<i>Faculty</i>	<i>Reviewers</i>
	INST 1500 Global Issues*		
Winter 2022	D01	Drewry Wofford	Nelson Bass, Ransford Edwards
Winter 2025	D01	Johnathon Vsetecka	Nelson Bass, Ransford Edwards
	POLS 1010 American Government and Politics*		
Winter 2024	D02	Charles Zelden	Darren Hibbs, Stephen Levitt

Table 17. Social & Behavioral Sciences domain courses. Includes domain representative, deans, chairs, and participating faculty. * Yvette Fuentes collaborated with this course.

2025 – 2028 Three-year Cycle

General Education is a vital part of higher education, providing students with a solid foundation of knowledge and skills that will benefit them throughout their academic and professional lives. It is not only a fundamental part of every undergraduate academic program at NSU but also one of the main elements for SACSCOC accreditation. We aim to keep reviewing and

Assessment Plan

As before, the assessment plan focuses on finding whether students have attained the General Education learning outcomes or not. We plan to keep using the same 4.0 points scale as in previous assessment cycles. Table 17 shows the general schedule we will follow to design, implement, and analyze the assessments. As before, assessment will cover all the domains, and we will follow the similar procedure. In other words, we will have three full assessment

improving the program’s quality by consistently using rules and guidelines.

Our next three-year cycle will be focused on refining our current plan to ensure optimum continuous quality improvements. Below we introduce some of the proposed activities we will carry out from Fall 2025 until Winter 2028.

processes during the cycle, each of them divided in two parts as follows:

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

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

	Phase 1 (Fall 2025 – Winter 2026)	Phase 2 (Fall 2026 – Winter 2027)	Phase 3 (Fall 2027 – Winter 2028)
Fall	<p>Design Action Plan</p> <ul style="list-style-type: none"> Act on the assessment findings from previous cycle. Identify areas for improvement and develop an action plan. Determine recommended changes from previous cycle report and faculty feedback. <p>Design Assessments</p> <ul style="list-style-type: none"> Identify the course(s) to assess during the 3-year plan and review their syllabi. The list can be updated during the cycle. Set the tools and review the rubrics. Validate selected assessment tool(s). Identify data to be collect, based on previous cycle. Discuss criteria for expectation targets and set student performance metrics. <p>Perform First Assessment A</p> <ul style="list-style-type: none"> Utilize the assessment rubrics to gather data on student performance and store data. 	<p>Design Assessments</p> <ul style="list-style-type: none"> Identify the course(s) to assess if needed. Discuss the possibility of assessing guest courses. <p>Perform Second Assessment A</p> <ul style="list-style-type: none"> Utilize the assessment rubrics to gather data on student performance and store data. 	<p>Design Assessments</p> <ul style="list-style-type: none"> Identify the course(s) to assess if needed. Discuss the possibility of assessing guest courses. <p>Perform Third Assessment A</p> <ul style="list-style-type: none"> Utilize the assessment rubrics to gather data on student performance and store data.
Winter	<p>Analyze First Assessment A</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. <p>Perform First Assessment B</p> <ul style="list-style-type: none"> Utilize the assessment rubrics to gather data on student performance and store data. 	<p>Analyze Second Assessment A</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. <p>Perform Second Assessment B</p> <ul style="list-style-type: none"> Utilize assessment rubric(s) to gather data on student performance and store data. 	<p>Analyze Third Assessment A</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. <p>Perform Third Assessment B</p> <ul style="list-style-type: none"> Utilize assessment rubric(s) to gather data on student performance and store data.
Summer	<p>Analyze First Assessment B</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. Write First report. 	<p>Analyze Second Assessment B</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. Write Second report. 	<p>Analyze Third Assessment B</p> <ul style="list-style-type: none"> Involve faculty in the analysis of the assessment collected. Sort and tabulate data and compare findings to expectation targets. Write Third report <p>Develop and Implement Action Plan</p> <ul style="list-style-type: none"> Domain representatives will review the assessment results and indicate whether to implement changes and plan appropriate revisions. Recognize challenges and recommend appropriate adjustments. Document any changes and modifications. Engage department faculty in preparing an assessment follow-up report. Close the assessment cycle.

Table 18. 2025 – 2028 Three-year plan for General Education assessments.

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Appendix 1

General Education Program Learning Outcomes

The General Education program learning outcomes are based on three (3) pillars (categories), aligned with the mission of NSU and the Gen Ed program: Foundation, Critical Thinking, and Communication. 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.

For each domain in the Gen Ed program, assessment rubrics were created to measure the domain's learning outcomes directly. The rubrics follow the 1 through 4 points method: 1 = Ineffective, 2 = Adequate, 3 = Effective, and 4 = Outstanding.

Arts and Humanities

Learning Objectives

Foundation	Critical thinking	Communication
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.

Rubrics

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.

Mathematics

Learning Objectives

Foundation	Critical thinking	Communication
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.

Rubrics

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.

Science

Learning Objectives

Foundation	Critical thinking	Communication
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.

Rubric

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.
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.

Category	1 = Ineffective	2 = Adequate	3 = Effective	4 = Outstanding
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.

Social and Behavioral Sciences

Learning Objectives

Foundation	Critical thinking	Communication
Identify and understand the major concepts and methods to investigate, analyze, or predict human behavior and cognition relevant to the discipline.	Use concepts and evidence within the subject area to explain human behavior and cognition.	Communicate knowledge, thoughts, and reasoning clearly and effectively within the subject area.

Rubrics

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.

Written Composition

Learning Objectives

Foundation	Critical thinking	Communication
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.

Rubrics

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 understanding or consideration of audience and contextual awareness.	Language choice, tone, and style indicate an understanding of audience and contextual awareness, although use and structure may be inconsistent.	Language choice, tone, and style indicate a consistent understanding of audience and contextual awareness.	Language choice, tone, and style indicate an advanced understanding of audience and contextual awareness.

Appendix 2

General Education Assessment Information for Participating Faculty

NSU Florida
General Education
Task Force

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.

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, SPCH, 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, M BIO, NEUR, SCIE, or PHYS.

Table 19. Current General Education domains and requirements.

Assessment Process

Why?

The General Education Task Force is responsible for assessing the **General Education (Gen Ed) learning outcomes** at the **course level**.

How?

We measure the performance of students in each of the Gen Ed learning outcomes through a series of **rubrics**. We **do not** assess the Gen Ed courses *per se*.

When?

The Gen Ed Learning Outcomes will be assessed in two blocks. One block during the Fall semester and the other one during Winter.

Initial Setup

Familiarize yourself with the Gen Ed rubric specifically created for your domain. Each Gen Ed domain has 3 learning outcomes that are assessed using specific rubrics. Please note that the purpose of the Gen Ed assessment is to measure the student's performance on these learning outcomes and **not their performance (or yours) in the course**.

Essays/Papers

If you are going to use essays/papers in your assessment, the process of creating/modifying artifacts (assignments) is as follows:

1. **Choose/create a set of artifacts that fit the rubric's learning outcomes 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. You will create each artifact (essay/paper) as you will normally do following your course’s syllabus. You will also grade it as you normally do.
- b. Reviewers (or you) will then score the (essay/paper) on a 1-4 scale (1 is Ineffective, 2 is Adequate, 3 is Effective, and 4 is Outstanding), based only on the Gen Ed rubrics. Use the Excel file provided to you to store these scores and deliver it to the domain representative. It is understood that the Gen Ed score **WILL NOT** be part of your course’s grades and so it will not affect students’ grades.

Multiple Choice Questions

If you use multiple choice questions in your assessment, the process of creating/modifying artifacts (assignments) is as follows:

1. **Choose/create a set of questions that fit the rubric’s learning outcomes as best as possible.** You need to have at least two questions per learning outcome (a minimum of 6 in total). You can use already existing questions you might have.
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 (right or wrong). We use a 1 to 4 scale 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 multiple-choice question. The 4 levels of comprehension are explained (you don’t need to do this), so the rubric can be used even if the options are changed.

Question. 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 learning outcomes.
4. **Score the questions.** For a test that is used for assessment
 - a. Grade the test/exam/quiz as you will normally do following according to your course’s syllabus. This grade is **NOT** to be used in our Gen Ed assessment.
 - b. Score the assessment embedded question in your test/exam/quiz on a 1-4 scale based only on the Gen Ed rubrics. Use the Excel file to store these scores and deliver it to the domain representative. It is understood that the Gen Ed score **WILL NOT** be part of your course’s grades and so it will not affect students’ grades.
5. 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

Common sheets for all Excel files

Calculations-Analysis Sheet (Information only – no input needed)

Averages and percentages are calculated. Top right table contains the overall calculations, based on % of success (75%) and target scores (2.5). Other information is available, such as averages for each artifact and for each learning outcome.

Report Sheet

This is the form to be used to write your 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.
- **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.

Assessments that use Essays/Papers

Main Sheet

Begin here. Write down the information in the green cells. This is an example for the ARTS 1000 course in the Arts and Humanities domain.

General Education Assessment			
Write down the information requested in the green cells. Instructions are in the blue boxes.			
Basic information			
Domain	Arts and Humanities		
Course	ARTS 1000		
Section(s)	Write down the course section. If teaching more than one section separate them with commas (DA1, DA2)		
Semester			
Instructor	Name of the instructor		
Assessment Information			
Number of Artifacts used:	<input type="text"/>	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	L.O.	1.1	LO1
1.1	LO1	2.1	LO1
2.1	LO1	1.2	LO2
1.2	LO2	2.2	LO2
2.2	LO2	3.1	LO3
1.3	LO3	3.2	LO3
2.3	LO3	Using the example of 3 artifacts above, we can fill the Artifact column and the LOs as follows: Artifact 1 (one of the exams) has 1 LO1 question (1.1) and 1 LO2 question (1.2). Artifact 2 (the other exam) had a similar set up (2.1 and 2.2) Artifact 3 (the quiz) had 2 LO3 questions (3.1 and 3.2).	
Learning Outcomes			
LO1		Foundation	
LO2		Critical Thinking	
LO3		Communication	

Reviewers' sheet

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

Reviewers						
Name of reviewer 1				Name of reviewer 2		
#	Artifact 1			Artifact 2		
	1.1	1.2	1.3	2.1	2.2	2.3
1						
2						
3						

Calculations-Analysis sheet

Averages for each student, as well as per learning outcome are calculated automatically. No input needed.

Assessments that use Multiple-Choice Questions

Main Sheet.

Begin here. Write down the information in the green cells. This is an example for the PSYC 1020 course in the Social and Behavioral Sciences domain.

General Education Assessment																			
Please complete the sections in green																			
Basic information																			
Domain	Social and Behavioral Sciences																		
Course Code	PSYC-1020H																		
Section(s)	Write down the course section . If teaching more than one section separate them with commas (DA1, DA2)																		
Semester		Fall 2024																	
Instructor	Name of the instructor																		
Assessment Information																			
# of Artifacts used:	1																		
Artifact	LO																		
1.1	LO1																		
1.2	LO1																		
1.3	LO2																		
1.4	LO2																		
1.5	LO3																		
1.6	LO3																		
Learning Outcomes																			
LO1	Foundation																		
LO2	Critical Thinking																		
LO3	Communication																		
<p>Number of artifacts used in the course. This is the number of exams or quizzes 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.</p> <p>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". Using the example of 3 artifacts above, we can fill the Artifact and LOs as follows:</p> <table border="1"> <thead> <tr> <th>Artifact</th> <th>LO</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1.1</td> <td>LO1</td> <td rowspan="2">Artifact 1 (one of the exams) has 1 LO1 question (1.1) and 1 LO2 question (1.2).</td> </tr> <tr> <td>2.1</td> <td>LO1</td> </tr> <tr> <td>1.2</td> <td>LO2</td> <td rowspan="2">Artifact 2 (the other exam) had a similar set up (2.1 and 2.2)</td> </tr> <tr> <td>2.2</td> <td>LO2</td> </tr> <tr> <td>3.1</td> <td>LO3</td> <td rowspan="2">Artifact 3 (the quiz) had 2 LO3 questions (3.1 and 3.2).</td> </tr> <tr> <td>3.2</td> <td>LO3</td> </tr> </tbody> </table>		Artifact	LO	Description	1.1	LO1	Artifact 1 (one of the exams) has 1 LO1 question (1.1) and 1 LO2 question (1.2).	2.1	LO1	1.2	LO2	Artifact 2 (the other exam) had a similar set up (2.1 and 2.2)	2.2	LO2	3.1	LO3	Artifact 3 (the quiz) had 2 LO3 questions (3.1 and 3.2).	3.2	LO3
Artifact	LO	Description																	
1.1	LO1	Artifact 1 (one of the exams) has 1 LO1 question (1.1) and 1 LO2 question (1.2).																	
2.1	LO1																		
1.2	LO2	Artifact 2 (the other exam) had a similar set up (2.1 and 2.2)																	
2.2	LO2																		
3.1	LO3	Artifact 3 (the quiz) had 2 LO3 questions (3.1 and 3.2).																	
3.2	LO3																		

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	E	No Ans	LO
Q1	1.1	1	4	2	3	0	0	Foundation
Q2	1.2	4	3	2	1	0	0	
Q3	1.3	2	3	4	1	0	0	Critical Thinking
Q4	1.4	1	2	3	4	0	0	
Q5	1.5	4	2	3	1	0	0	Communication
Q6	1.6	3	4	2	1	0	0	

- Write down the letter answers (A, B, C or D) for each student for each on the **Data Input** columns. Match the letter with the learning outcome and the item.
- The **Scores by Key** columns are filled automatically according to the key.

#	Data Input						Scores by Key					
	LO 1		LO 2		LO 3		LO 1		LO 2		LO 3	
	1.1	1.2	1.3	1.4	1.5	1.6	1.1	1.2	1.3	1.4	1.5	1.6
1	B	A	C	D	A	A	4	4	4	4	4	3
2	C	A	C	D	A	B	2	4	4	4	4	4
3	C	D	C	D	A	B	2	1	4	4	4	4
4	C	B	C	D	A	B	2	3	4	4	4	4

Calculations-Analysis Sheet

Averages and percentages are calculated automatically. Top right table contains the overall calculations, based on % of success (75%) and target scores (2.5). No input is needed.

Appendix 3

Fall 2022 - Winter 2023

Assessment Analysis and Report Summary

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1. Introduction

The General Education Task Force is responsible for assessing the **Gen Ed learning outcomes** at the **course level**. During the Fall 2022 and Winter 2023 we carried out our **first assessment** round of the **three-year cycle** we are currently running. Our goal was to measure the performance of students in each of the Gen Ed learning outcomes through a series of preestablished assessment **rubrics**. The assessment rubrics were written for each of the 5 domains and their results were evaluated against two per-established benchmarks: a *Learning Outcome Proficiency (LOP)* target of 75% and an *Average Individual Proficiency (AIP)* threshold of 2.5 points out of 4. This means that we were expecting at least 75% of our students to have an average individual proficiency of 2.5 points or higher. During this assessment round, participating faculty assessed:

- 744 students. The second largest number of students ever assessed at NSU in a single process.

- 5 domains: Arts and Humanities (Winter 2023), Mathematics (Fall 2022), Science (Fall 2022), Social and Behavioral Sciences, and Written Composition (Winter 2023).
- 15 courses, divided into 40 sections.
- 55 artifacts, divided into 107 items selected/created by faculty of each domain.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	71	72%	2.92	3	3	6	21
Mathematics	167	72%	2.94	3	8	18	36
Sciences	195	96%	3.45	3	12	9	20
Social and Behavioral Sciences	283	94%	3.30	4	12	12	18
Written Composition	28	89%	2.88	2	5	10	12
Overall Results	744	88%	3.10	15	40	55	107

Table 1. 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
22 Fall - 23 Winter	2.92	2.94	3.45	3.30	2.88	3.10	744
%difference to Fall 21	11.5%	2.1%	5.1%	2.0%	8.5%	5.5%	-7.6%
%difference to Fall 14	2.0%	6.0%	9.8%	13.5%	0.2%	6.6%	63.4%

Table 2. Summary of the results of each domain from the Fall 2014 until Winter 2023.

Overall, the *learning outcome proficiency* (LOP) was 88%, a decrease of 1.5% with respect to the Fall 2021 assessment. Additionally, the *average individual proficiency* (AIP) of 3.10 points increased by 5.5%, the highest AIP so far. Individually, the domains fared very well, as can see on Table 1 and Table 2, thus we can confidently say that our goal for the Fall 2022- Winter 2023 assessment was met. Comparing to previous assessment periods, results are very promising (Table 2):

- We assessed close to 20% of the total amount of undergraduate students enrolled in the assessed courses (744).
- All domains had an increase in their AIP, ranging from 2.0 to 11.5%, compared to the 2021 assessment.

Domain	Daytime				Evening				Online			
	Daytime	Evening	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference
Arts and Humanities					2.99	2.28	26.9%	Yes				
Mathematics					2.83	3.07	8.0%	No				
Sciences	3.45	3.24	6.3%	Yes	3.45	3.72	7.7%	Yes	3.24	3.72	14.0%	Yes
Social and Behavioral Sciences	3.36	3.56	5.7%	Yes	3.36	3.21	4.4%	No	3.56	3.21	10.1%	Yes
Written Composition					2.84	2.47	14.0%	Yes				
Overall	3.19	3.32	3.9%	Yes	3.19	3.06	4.2%	Yes	3.32	3.06	8.1%	Yes

Table 3. The differences between the means of daytime, evening, or online courses. The overall values are calculated using the whole data.

Table 3 shows the mean scores differences between daytime, evening, or online courses. 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. Some results were unexpected but not all surprising.

- Between daytime and evening students, there is a statistically significant difference in both the *Science* domain in favor of the daytime students. The opposite happens to the *Social and Behavioral Sciences* domain, where evening students are favored. When evaluating the data from both domains, the overall outcome is in favor of the evening students.
- Between daytime and online students there was a statistically significant difference in *Arts and Humanities*, *Science*, and *Written Communication* domains. The results were mixed showing an advantage for online students in the *Mathematics* and *Science* domains, while the opposite happens to the other three domains. Overall, there was a statistical difference in favor of the daytime students.
- Finally, we found statistically significant difference between evening and online students in the *Science* and *Social and Behavioral Sciences* domains. Although results were mixed, the overall results show a statistical difference in favor of the evening students.

2. Procedure

2.1. Courses Assessed

For this assessment period, the General Education Task Force selected a set of courses per domain that met our learning outcomes. We also wanted to include 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 of around 20% of the course’s student population to be assessed. Additionally, we would like to thank all the participating faculty that helped us with this assessment round. Without their invaluable effort it would be impossible to accomplish our goals. Due to unforeseen events, faculty responsible for two of the selected courses (MBIO 2410 and SOCL 1020) were not able to complete their assessments. Thus, their data does not appear in this report.

Domain	Courses Assessed
Arts and Humanities	ARTS-1000, HIST-1050, and PHIL-1010.
Mathematics	MATH 1040, MATH 1200, and MATH 2020 (and MATH 2020H).
Sciences	BIOL 1040, BIOL 1500, CHEM 1300 (and CHEM 1300H) and MBIO 2410.
Social and Behavioral Sciences	INST 1500, PSYC 1020 (and PSYC 1020H), SOCL 1020, and ECN-2025
Written Composition	COMP 2000 and COMP-2000H.

Table 4. Courses assessed per domain.

2.2. 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 through 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).

2.3. Process

Faculty had an important role in deciding which artifact(s) to use during this assessment process. 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.

2.4. Analysis and Conclusions

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

- **Average Individual Proficiency (AIP) threshold:** 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 (LOP) target:** 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 75% 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 help us improve the process and ensure that our methods are working.

3. Gen Ed Course Mapping

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 outcomes (Table 5), and (2) indicate the emphasis in which these learning outcomes are being taught (Table 5). In general, responses show that domains address the learning outcomes. The content of the courses implies or explicitly state the learning outcomes either by introducing subjects related to them or significantly employing them in the domains’ courses.

	Mathematics	Science	Social and Behavioral Sciences	Overall	
% Course mapped	60%	75%	60%	66%	
Learning Outcomes					
Foundation	70%	83%	88%	80%	
Critical thinking	70%	92%	63%	75%	
Communication	73%	67%	63%	68%	
Content Alignment					
Foundation	100%	100%	75%	92%	
Critical thinking	75%	100%	75%	83%	
Communication	92%	88%	75%	85%	
Emphasis					
Foundation	100%	100%	100%	100%	
Critical thinking	100%	100%	100%	100%	
Communication	92%	88%	100%	93%	
Color Code					
Content Alignment	Not Addressed	Not Addressed/ Implied	Implied	Implied/ Explicitly stated	Explicitly Stated
Emphasis	None	None/Introduced	Introduced	Introduced/Significant	Significant

Table 5. Information taken from instructor's responses in the Gen Ed Course mapping. Numbers indicate the % amount the Gen Ed LO aligns with the courses’ LO. The colors refer to the emphasis put in each LO.

4. Gen Ed Courses Review

In order to check the relevance of the courses we are assessing, a thorough review of the 55 undergraduate programs NSU currently offers was made. The study used the four-year plans suggested by each program. In six particular cases where this information was not available, courses were classified as *open*. The table below shows the suggested/required courses in at least 2 programs. Although this data confirmed most of our assessment courses choices, it also showed that some courses need to be replaced. Also, the list would also allow us to choose relevant courses to assess in the future.

Arts and Humanities		Mathematics		Science		Social and Behavioral Sciences		Written Composition	
Open 1	32	MATH 2020	23	Open 1	36	Open 1	26	Open 1	30
Open 2	26	Open 1	21	Open 2	35	Open 2	26	Open 2	30
HIST 1050	10	Open 2	20	BIOL 1500	10	PSYC 1020	13	COMP 1500	22
HIST 1170	4	MATH 1040	18	CHEM 1300	9	ECN 2025	10	COMP 2000	22
LITR 2010	4	MATH 2100	10	PHYS 1020	7	ECN 2020	8		
LITR 2020	4	MATH 2200	7	BIOL 1400	6	POLS 1010	8		
LITR 2021	4	MATH 1050	6	CHEM 1310	6	SOCL 1020	3		
LITR 2030	4	MATH 1200	3	PHYS 2350	6	GEOG 2050	2		
ARTS 1200	3	MATH 1250	3	BIOL 1510	5	INST 1500	2		
ARTS 2050	3			CHEM 2400	4	POLS 1200	2		
HIST 1030	3			CHEM 2410	4	POLS 2010	2		
HIST 1040	3			PHYS 2360	4				
LITR 2010	3			PHYS 2400	3				
LITR 2031	3			BIOL 1070	2				
ARTS 1250	2			BIOL 2400	2				
ARTS 1700	2			MBIO 2410	2				
ARTS 1800	2			PHYS 2500	2				
ARTS 2190	2								
ARTS 2200	2								
HIST 1120	2								
HIST 1170	2								
HIST 2150	2								
HUMN 1200	2								
LITR 2011	2								
MUSC 1000	2								
MUSC 1250	2								
MUSC 1960	2								
MUSC 2050	2								
MUSC 2600	2								
MUSC 2960	2								
PHIL 1010	2								
PHIL 2400	2								
SPCH 1010	2								
SPCH 2000	2								
SPCH 2020	2								

Table 6. Data gathered for most suggested/required courses in General Education. Courses listed as open mean that a program does not have a specific requirement. Courses in green were used during this assessment round. Courses in blue were used in previous assessments.

5. Arts and Humanities

Courses Assessed: HIST-1050, PHIL-1010, and ARTS-1000.

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

Details		LO	AIP	Score is:	LOP	LOP is:
#Artifacts	6	LO 1	2.96	Between Adequate and Effective	73%	Below expectations
#Items	21	LO 2	2.78	Between Adequate and Effective	66%	Below expectations
#Sections	3	LO 3	3.01	Between Effective and Outstanding	74%	Below expectations
# Students	71	Overall	2.92	Between Adequate and Effective	72%	Below expectations
# Students at or above % of success	51	out of	71		Faculty	3

Table 7. Overall analysis for the Arts and Humanities domain.

Table 7 contains a summary of the *Arts and Humanities* domain for Winter 2023. Additionally, Fig. 1 shows how students overwhelmingly scored at the effective and outstanding levels. The summary for this assessment round is:

- A total of 71 students were assessed in 3 sections spread through 2 departments.
- Students were assessed using 6 artifacts, divided into 21 items.
- Multiple choice items and essays were selected/created by faculty as part of required course assignments.
- **Foundation:** 73% of students were between *adequate* and *effective* with an AIP score of 2.96.
- **Critical Thinking:** the AIP score was 2.78. The LOP was 66%, between *adequate* and *effective*, below the 75% target.
- **Communication:** had the highest AIP score of 3.01 with a LOP of 74%, just below the 75% target.

Overall, 51 students (72%) exceeded the LOP target with an AIP score of 2.92 points. Faculty members were generally pleased with student performance on this assessment. However, it is obvious that the Critical Thinking LO needs improvement.

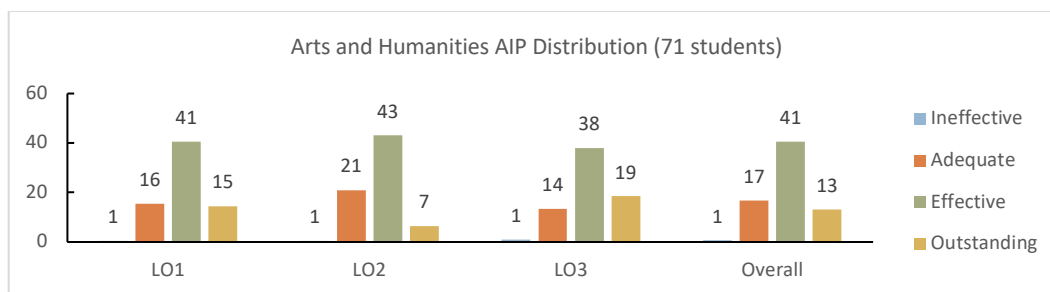


Figure 1. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Assessment Round	Overall Score	#Students
2014 Fall	2.86	59
2015 Winter	2.89	45
2015 Fall	2.88	87
2016 Fall	2.93	27
2017 Winter	2.70	46
2017 Fall	2.76	33
2018 Winter	2.77	32
2021 Fall	2.61	56
2023 Winter	2.92	71

Table 8. Summary of the results of the Science domain from the Fall 2014 until Winter 2023.

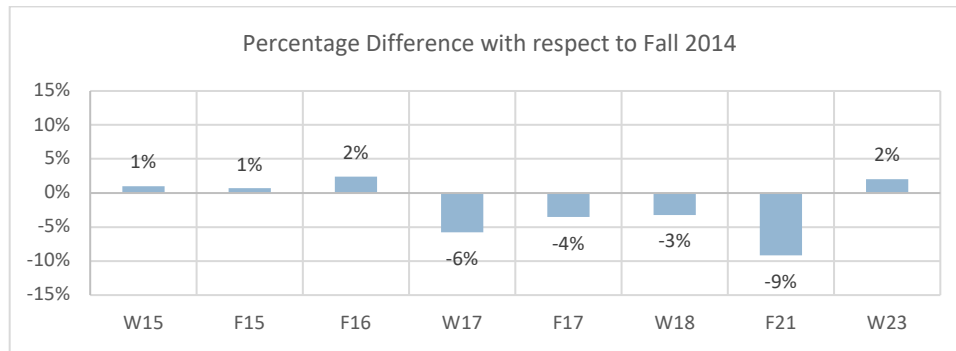


Figure 2. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

Table 8 contains a summary of the *Arts and Humanities* domain from Fall 2014 until our last assessment. During this time, 9 assessments rounds were performed. Additionally, Fig. 2 shows the percentage difference between the overall averages of these assessment rounds. During Winter 2023 we assessed 71 students, the second highest since 2014. The overall AIP of 2.92 is also the second highest score so far; an improvement of 11% compared to Fall 2021, and 2% compared to the Fall 2014 baseline (Fig 2).

5.1. HIST 1050 – The United States: From Settlement to Superpower

Section (s)	# Sections	# Students	Instructor
D01	1	19	Teng Li
Totals	1	19	

Table 9. Sections assessed and participating faculty.

5.1.1. Artifacts

Artifacts	Learning Outcome	Assessment type	Comment
1.1	LO1	an 800-1000 words essay	"Foundation" in this essay-writing artifact would be how well a student understands the narrative in the textbook.
2.1	LO1	an essay question in an open-note exam	"Foundation" in this time-sensitive exam setting would be how well a student shows the familiarity with basic historical terms.
1.2	LO2	an 800-1000 words essay	"Critical thinking" in this essay-writing artifact would be how well a student analyzes the materials and construct an argument of their own according to the detailed requirements in the prompt.
2.2	LO2	an essay question in an open-note exam	"Critical thinking" in this time-sensitive exam setting would be how well a student organizes the materials to address the question directly.
1.3	LO3	an 800-1000 words essay	"Communication" in this essay-writing artifact would be how well a student adheres to the writing conventions for an analytical essay at college level.
2.3	LO3	an essay question in an open-note exam	"Communication" in this time-sensitive exam setting would be how well a student composes and develops a clear answer that is accessible to the instructor and any educated reviewer.

Table 10. Artifact for HIST-1050.

5.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	2	11	6	3.21
2.1	LO1	1	2	14	2	2.89
1.2	LO2	0	6	8	5	2.95
2.2	LO2	1	3	13	2	2.84
1.3	LO3	0	3	11	5	3.11
2.3	LO3	1	2	14	2	2.89

Table 11. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

5.1.3. Data Analysis

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	3.05	Between Effective and Outstanding	16	84%	Above expectations
#Items	6	LO 2	2.89	Between Adequate and Effective	15	79%	Above expectations
#Sections	1	LO 3	3.00	Between Effective and Outstanding	16	84%	Above expectations
# Students	19	Overall	2.98	Between Adequate and Effective	16	84%	Above expectations
# Students at or above % of success					16	out of	19

Table 12. Overall analysis for HIST-1050.

- Foundation (LO1) and Communication (LO3) reached the LOP of 84%. For either of these two outcomes, the standard of success was met. It shows the students improved remarkably on their understandings of historical events, and they can express their ideas in written language at a level accepted in college.
- Critical Thinking (LO2) reached the LOP of 79%. The targeted percentage of success is 75%; therefore, the standard of success for LO2 was met as well. Critical thinking is an essential goal for liberal arts education. HIST 1050 trains students’ critical thinking capacities by asking them to articulate sophisticated connections between historical events. It is a long-term goal that requires consistent efforts.

5.1.4. Conclusions

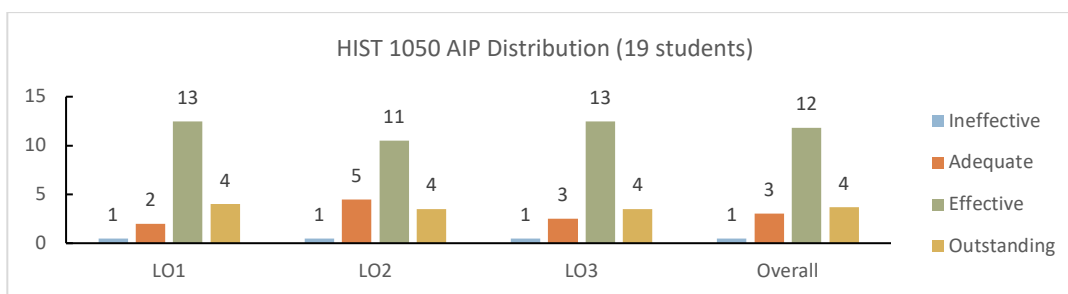


Figure 3. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Faculty observed:

- Faculty learned a lot from the data. Particularly, they appreciate the work of the reviewers, who are experts in the field and at the same time bring their fresh eyes to view students' performance.
- Although there were no suggestions to the assessment process itself, faculty thinks that most of the work is done before the assessment process: the design and selection of artifacts.
- Course instructors need to design the assessment methods according to the course learning outcomes.
- As for students’ strength and weakness, in addition to the slight difference between LO1 and LO2 and LO3, another interesting way to look at the data is the different between Artifact 1 and Artifact 2. Students perform better at the essay writing assignment (Artifact 1) than the essay question in the middle of an exam (Artifact 2).

5.2. PHIL 1010 – Introduction to Philosophy

Section (s)	# Sections	# Students	Instructor
D01	1	28	Jeremy Weissman
Totals	1	28	

Table 13. Sections assessed and participating faculty.

5.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	Question on foundational concepts of rationalism vs. empiricism
1.2	LO1	Multiple Choice	Question on foundational concepts in Buddhist philosophy

Artifact	Learning Outcome	Assessment type	Comment
2.1	LO1	Essay	Students must demonstrate foundational knowledge of a philosopher's work for the essay
1.3	LO2	Multiple Choice	Question requires thinking critically on Parmenides' criticisms of the concept of 'nothing'
1.4	LO2	Multiple Choice	Question requires thinking critically on Aristotle's characterization of virtue
2.2	LO2	Essay	Students must exercise critical thinking in applying philosophical insights from course material to experiences from their lives
1.5	LO3	Multiple Choice	Question requires correctly understanding the name for a key term in Indian philosophy
1.6	LO3	Multiple Choice	Question requires correctly understanding the name for a key term in Taoist philosophy
2.3	LO3	Essay	Students must communicate their argument for applying philosophy from class to experiences from their lives.

Table 14. Artifact for PHIL-1010.

5.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	1	1	3	24	3.77
2.1	LO1	0	1	18	9	3.29
1.2	LO2	6	0	1	21	3.25
2.2	LO2	0	4	22	2	2.93
1.3	LO3	1	0	1	27	3.91
2.3	LO3	0	0	13	15	3.54

Table 15. Results for each rubric Learning Outcome. The Table shows the number of students per score and the AIP for each item/learning outcome.

5.2.3. Data Analysis

- 100% of students met the standard of success for each learning outcome. Learning Outcome 1 had a LOP of 96%. Learning Outcome 2 had a LOP of 86%. Learning Outcome 3 had a LOP of 100%. The overall AIP was 3.25 which exceeded the target of 2.5.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	3.29	Between Effective and Outstanding	27	96%	At or above expectations
#Items	9	LO 2	2.93	Between Adequate and Effective	24	86%	At or above expectations
#Sections	1	LO 3	3.54	Between Effective and Outstanding	28	100%	At or above expectations
# Students	28	Overall	3.25	Between Effective and Outstanding	28	100%	At or above expectations
# Students at or above % of success				28	out of	28	

Table 16. Overall analysis for PHIL-1010.

5.2.4. Conclusions

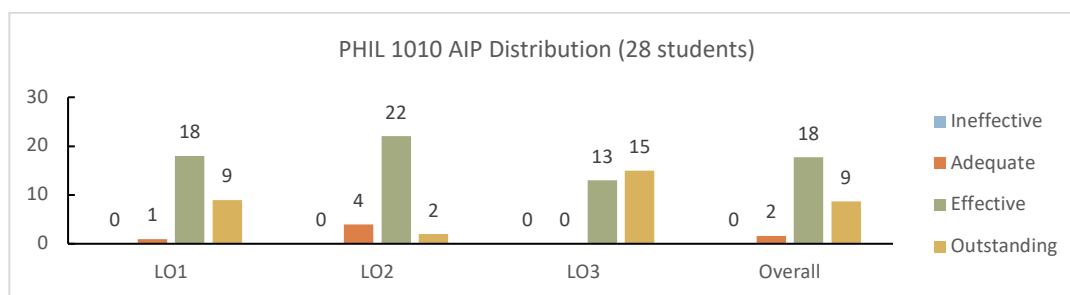


Figure 4. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- Students met or exceeded expectations for performance. They did particularly well on their multiple-choice exam questions. However, these were open note exams. Faculty was glad my students paid close attention,

took good notes, and understood the material well enough to perform strongly on their exams. He would like to move away from the open note format in the future and see if they do comparably well.

- For the essays, faculty felt the need to have my students do in-class handwritten essays in order to avoid their using ChatGPT or other generative AI to complete their assignments. Unfortunately, this meant they had relatively little time to write their essays (two-hours allotted for the midterm period), no time to brainstorm, and no ability to revise. Their performance on their essays was not as strong as faculty would have liked, but not unexpected given the restraints. Generative AI presents a major challenge for assessing student writing and over time faculty hopes to refine in-class writing assignments to make them as meaningful learning experiences as possible. This is particularly important for my class since my students performed lowest in the Critical Thinking Learning Outcome, and it is in their writing assignments where critical thinking can best be demonstrated. However, faculty was pleased that my students performed at a 100% LOP on the Communication Learning Outcome, and this was notable in their essays. This gives faculty confidence that an in-class essay is still an effective assessment measure, albeit there is room for improvement.

5.3. ARTS 1000 – Art and Society

Section (s)	# Sections	# Students	Instructor
L03	1	24	Carlo Ricchi
Totals	1	24	

Table 17. Sections assessed and participating faculty.

5.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Discussion A	Students discuss the elements of a production, a reaction post.
1.2	LO1	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”
1.3	LO2	Discussion A	Students discuss the elements of a production, a reaction post.
1.4	LO2	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”
1.5	LO3	Discussion A	Students discuss the elements of a production, a reaction post.
1.6	LO3	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”

Table 18. Artifact for ARTS-1000.

5.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	15	9	0	2.38
1.2	LO1	0	10	11	3	2.71
1.3	LO2	0	16	8	0	2.33
1.4	LO2	0	9	13	2	2.71
1.5	LO3	0	14	10	0	2.42
1.6	LO3	1	8	15	0	2.58

Table 19. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

5.3.3. Data Analysis

Students are scoring at expectation individually (2.52); there is a rise in average score for each learning outcome which demonstrates improved learning during the course. However, only 7 of 24 students scored above the target threshold (29%).

- **Foundation:** 38% of students were at or above expectations with an AIP of 2.54.

- **Critical thinking:** 33% of students were at or above expectations with an AIP of 2.52.
- **Communication:** 38% of students were at or above expectations with an AIP of 2.50.

Details		LO	AIP	Score is:	LOP	LOP %	LOP is:
#Artifacts	2	LO 1	2.54	Between Adequate and Effective	9	38%	Below expectations
#Items	6	LO 2	2.52	Between Adequate and Effective	8	33%	Below expectations
#Sections	1	LO 3	2.50	Between Adequate and Effective	9	38%	Below expectations
# Students	24	Overall	2.52	Between Adequate and Effective	7	29%	Below expectations
# Students at or above % of success					7	out of	24

Table 20. Overall analysis for ARTS-1000.

5.3.4. Conclusions

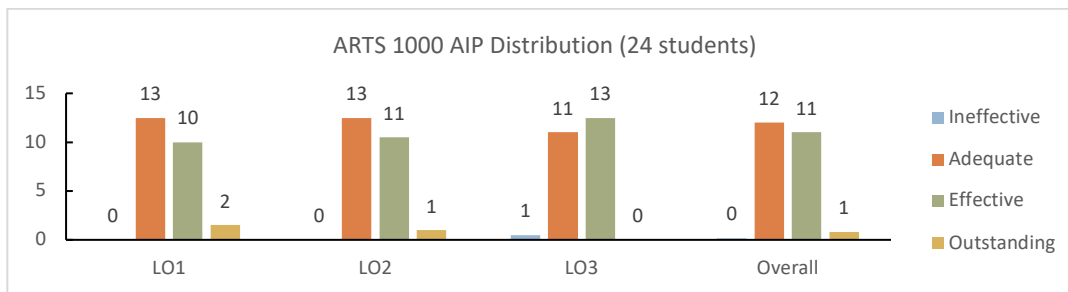


Figure 5. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Generally, students are successfully accomplishing the learning outcomes for this course. Learning Outcome 2 requires analytical skill which is a natural area of development in college - ARTS 1000 is an introductory, lower-level course. In the future, the critiques might serve this process better as they are more analytical assignments.

6. Mathematics

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

Departments involved: Department of Mathematics

Details			AIP	Score is:	LOP	LOP is:	
#Artifacts	18	LO 1	3.09	Between Effective and Outstanding	83%	At or above expectations	
#Items	36	LO 2	2.95	Between Adequate and Effective	77%	At or above expectations	
#Sections	8	LO 3	2.78	Between Adequate and Effective	78%	At or above expectations	
# Students	167	Overall	2.94	Between Adequate and Effective	72%	Below expectations	
# Students at or above % of success					121	out of	167
					Faculty	8	

Table 21. Overall analysis for the Mathematics domain.

Table 21 contains a summary of the *Mathematics* domain for the assessment of Fall 2022. Overall, out of the 167 students assessed, 121 (72.5%) exceeded the LOP target with an AIP score of 2.94 points. Although it is somehow below the LOP target of 75%, the majority of students scored at the outstanding level for all LOs (Fig. 6). In this assessment round:

- A total of 167 students were assessed in 8 sections.
- Students were assessed using 18 artifacts, divided into 36 items.
- **Foundation:** 83% of students were between *effective* and *outstanding* with an AIP score of 3.09.
- **Critical Thinking:** students had an AIP score of 2.95 for this learning outcome. The LOP was 77%, between *effective* and *outstanding*.
- **Communication:** the lowest AIP score was 2.78, with a LOP of 78%, which still is well of the 75% target.

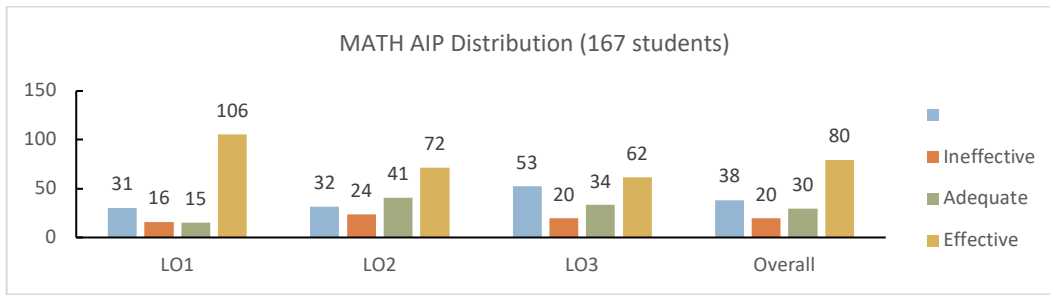


Figure 6. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

A summary of the 10 assessments rounds were performed *Mathematics* domain from Fall 2014 until our last assessment can be seen in table 22. In the Fall 2022 round, we assessed 167 students, the second highest since 2014. The overall AIP of 2.94 is the highest score so far; an improvement of 2% compared to Fall 2021, and 6% compared to the Fall 2014 baseline, as can be seen in Fig. 7.

Assessment Round	Overall Score	#Students
2014 Fall	2.77	107
2015 Winter	2.25	18
2015 Fall	2.49	38
2016 Winter	2.17	35
2016 Fall	2.06	37
2017 Winter	2.83	27
2017 Fall	3.27	45
2018 Winter	2.43	34
2021 Fall	2.87	270
2022 Fall	2.94	167

Table 22. Summary of the results of the Mathematics domain from the Fall 2014 until Fall 2022.

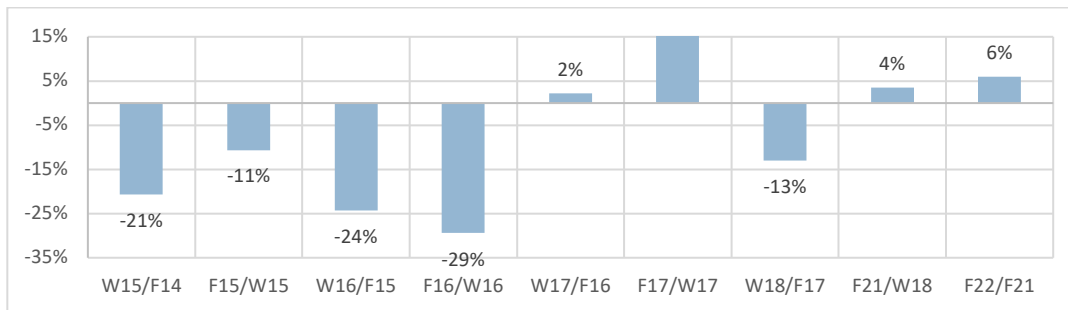


Figure 7. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

6.1. MATH 1040 – Algebra for College Students

Section (s)	# Sections	# Students	Instructor
D03, D08	2	48	Iuliana Stanculescu
D19, D20	2	35	Miguel Montanez-Martinez
L10	1	24	Teresita Lemus
Totals	5	107	

Table 23. Sections assessed and participating faculty.

6.1.1. Artifacts

Artifact	Learning Outcome	Assessment Type	Comment		
1.1	LO1	Short Answer	solving equations with roots	Test Chapter 6	Solve radical equations with one radical term.
1.2	LO1	Short Answer	solving log/exp equations	Test Chapter 6	Add and subtract radicals, then simplify
1.3	LO2	Short Answer	finding LCM	Test Chapter 7	Determine the nature of the solutions of a quadratic equation.

Artifact	Learning Outcome	Assessment Type	Comment		
1.4	LO2	Short Answer	applying properties of logs	Test Chapter 7	Find the vertex, line of symmetry, the maximum or minimum value, and then graph the function.
1.5	LO3	Short Answer	word problem speed, time, etc..	Final Exam #5	Word Problems with quadratic equations
1.6	LO3	Short Answer	word problem min/max.	Final Exam #7	Word problems with growth and decay questions

Table 24. Artifact for MATH-1040.

6.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	15	8	4	80	3
1.2	LO1	26	5	12	64	3
1.3	LO2	26	13	10	58	3
1.4	LO2	23	18	15	51	3
1.5	LO3	44	13	20	30	2
1.6	LO3	40	11	16	40	3

Table 25. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

6.1.3. Data Analysis

According to faculty:

- Learning outcomes LO1 and LO2 were achieved. This denotes that students are studying and understanding how to directly apply the concepts they learn in most of their mathematics problems.
- The communication part, tested by LO3, seems to need a lot of improvement; understanding and solving word problems seems to be a challenge for many of the students.
- The Fall 2022 academic term was uniquely challenging; first-year students were away from a classroom for two years. Students lacked the mathematical foundation to be successful in some of their classes. However, there was a more fundamental issue: students lacked the study and social skills required to be successful. Students know they lacked the skills, yet, unfortunately, students did not put the effort to gain those skills. Students showed no effort to learn the material.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	9	LO 1	3.23	Between Effective and Outstanding	91	85%	At or above expectations
#Items	18	LO 2	2.91	Between Adequate and Effective	75	70%	Below expectations
#Sections	5	LO 3	2.43	Between Adequate and Effective	62	58%	Below expectations
# Students	107	Overall	2.86	Between Adequate and Effective	73	68%	Below expectations
# Students at or above % of success					73	out of	107

Table 26. Overall analysis for MATH-1040.

6.1.4. Conclusions

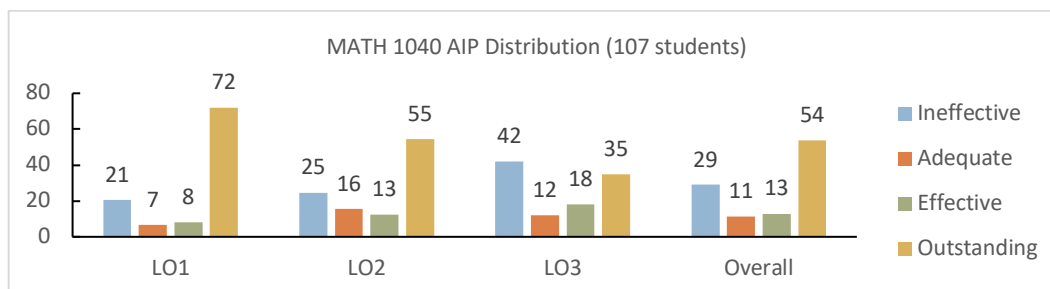


Figure 8. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- Some of the results presented here are those of an 8 week - MATH 1040 class. The LO3 results denote that more practice is needed; evidently, to solve word problems a more detailed comprehension of the studied material is needed. It may also denote that a better assessment of the students is needed before they are placed in an online class.
- The artifacts used for this analysis were based on chapters covered after the midterm exam (i.e., quadratic, exponential, and logarithmic equations, and functions). For most students, these topics were new material; thus, my assumption was that having a solid or weak foundation would not skew the data.
- Students who dedicated time to learn the topics prior to the exams and attended zoom or tutoring, performed better than students who neither attended zoom nor spent sufficient time to review the material.
- One of weakest objective was LO2, this presented the greatest challenge to students. They showed difficulty in analyzing quantitative information into meaningful terms, in this case they had to analyze the data for a parabola and correctly identify the equation, the vertex, the maximum or minimum, as well as the domain and range of the equation or graph.
- The students' strength was in LO1, they effectively worked with radicals and solving radical equations.

6.2. MATH 1200 Precalculus Algebra

Section (s)	# Sections	# Students	Instructor
LO2	1	24	Abdel Bourouhiya
Totals	1	24	

Table 27. Sections assessed and participating faculty.

6.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Test 4, 23	
1.2	LO1	Test 5, 1	
1.3	LO2	Test 3, 22	
1.4	LO2	Final, 2	
1.5	LO3	Test 3, 21	
2.1	LO3	Final, 1	

Table 28. Artifacts for MATH-1200.

6.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	4	3	5	12	3.04
1.2	LO1	5	8	3	8	2.58
1.3	LO2	2	2	12	8	3.08
1.4	LO2	0	1	14	9	3.33
1.5	LO3	3	8	8	5	2.63
1.6	LO3	2	1	10	11	3.25

Table 29. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

6.2.3. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	4	LO 1	2.81	Between Adequate and Effective	17	71%	Below expectations
#Items	6	LO 2	3.21	Between Effective and Outstanding	22	92%	At or above expectations
#Sections	1	LO 3	2.94	Between Adequate and Effective	21	88%	At or above expectations
# Students	24	Overall	2.99	Between Adequate and Effective	21	88%	At or above expectations
# Students at or above % of success					21	out of	24

Table 30. Overall analysis for MATH-1200.

According to faculty:

- This assessment included 6 items from the final exam and 1 item on the effectiveness of a hypothesis statement within a lab report.
- **Foundations:** 71% of the students performed below expectations. It was the lowest LOP for this assessment. However, it is not far from the target of 75%.
- **Critical Thinking:** 92% of the students performed effective and outstanding. The results demonstrate that most students can problem-solve fundamental problems.
- **Communication:** 92% of the students performed effective and outstanding. The majority of the student performed well, at or above expectations.

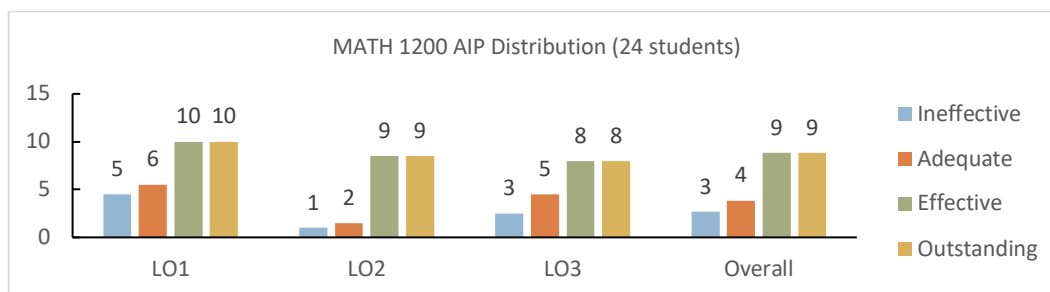


Figure 9. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

6.2.4. Conclusions

- Overall, the results showed that students performed well above the expected target (88%). The overall AIP was 2.99, between effective and outstanding.
- The students exhibit strengths critical thinking and communication. However, there can be improvement in foundation.

6.3. MATH 2020/2020H Applied Statistics

Section (s)	# Sections	# Students	Instructor
D05	1	21	Matthew He
D02H	1	15	Radleigh Santos
Totals	2	36	

Table 31. Sections assessed and participating faculty.

6.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Miterm#1 Mid#9b	Part of the in-class, on paper Midterm (Chapters 4-6) exam
2.1	LO1	Final Exam #1 Fin#36	Part of the in-class, on paper Final (Chapters 7-10) exam. Equation Sheet was given
1.2	LO2	Miterm#2 Mid#3	Part of the in-class, on paper Midterm (Chapters 4-6) exam
2.2	LO2	Final Exam #2 Fin#3b	Part of the in-class, on paper Final (Chapters 7-10) exam. Equation Sheet was given
1.3	LO3	Miterm#3 Project 1	Students presented their PowerPoints in class to the entire class, and submitted them in Canvas
2.3	LO3	Final Exam #3 Project 2	Students presented their PowerPoints in class to the entire class, and submitted them in Canvas

Table 32. Artifacts for Math-2020.

6.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	1	3	3	29	3.67
2.1	LO1	10	5	3	18	2.81
1.2	LO2	3	7	23	3	2.72
2.2	LO2	9	6	7	14	2.72
1.3	LO3	4	0	3	29	3.58
2.3	LO3	12	6	10	8	2.39

Table 33. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is given.

6.3.3. Data Analysis

- Foundational artifacts seem to reflect a strong success in this learning outcome from the students.
- Critical Thinking artifacts also met minimal standards but with a lower overall result.
- Student projects seems extremely effective in meeting Communication learning outcomes.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	5	LO 1	3.24	Between Effective and Outstanding	34	94%	At or above expectations
#Items	12	LO 2	2.72	Between Adequate and Effective	25	69%	Below expectations
#Sections	2	LO 3	2.99	Between Adequate and Effective	32	89%	At or above expectations
# Students	36	Overall	2.98	Between Effective and Outstanding	27	75%	At or above expectations
# Students at or above % of success					27	out of	36

Table 34. Overall analysis for MATH-2020.

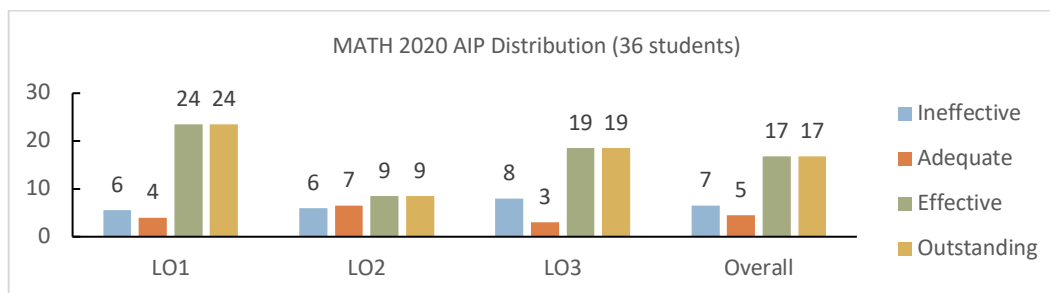


Figure 10. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

6.3.4. Conclusions

According to faculty:

It is possible that the artifacts chosen for Critical Thinking, which were designed to highlight the depth of subject associated with the Honors section of this course, may have been on the difficult side for this assessment process. Projects were a clear source of strength, with students overall doing excellent work.

7. Science

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

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

Details	LO	AIP	Score is:	LOP	LOP is:
# Artifacts	9	LO 1	3.55	Between Effective and Outstanding	97%
# Items	20	LO 2	3.51	Between Effective and Outstanding	92%
# Sections	12	LO 3	3.29	Between Effective and Outstanding	88%
# Students	195	Overall	3.45	Between Effective and Outstanding	96%
# Students at or above % of success				188	out of
				195	Faculty
					5

Table 35. Overall analysis for the Science domain.

The *Science* domain was assessed during the Fall 2022 assessment round. Table 35 contains a summary of the results. In summary,

- A total of 195 students were assessed in 12 sections spread through 2 departments.
- Students were assessed using 9 artifacts, divided into 20 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 97% of students were between *effective* and *outstanding* with an AIP score of 3.55.
- **Critical Thinking:** Students had an AIP score of 3.51. The LOP success was 92%, between *effective* and *outstanding*.
- **Communication:** had the lowest AIP score was 3.29, with a LOP of 88%, which still is well above of the 75% target.

Overall, 188 students (96%) exceeded the LOP target with an AIP score of 3.45 points. This is well above the LOP target of 75%. Students overwhelmingly scored at the outstanding level for all learning outcomes as shown in Fig. 11.

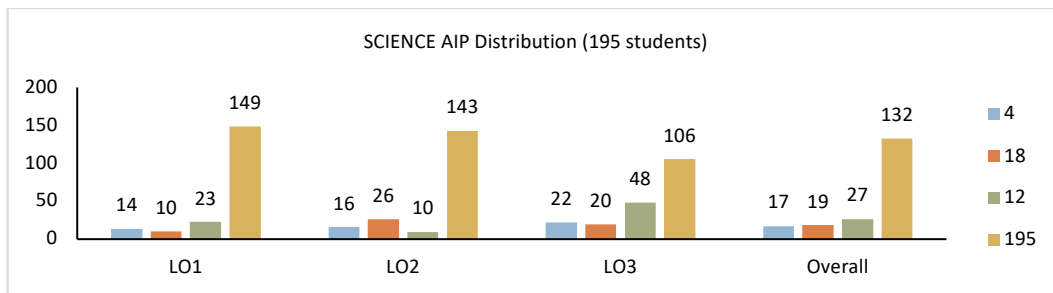


Figure 11. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Assessment Round	Overall Score	#Students
2014 Fall	3.13	94
2015 Winter	3.02	48
2015 Fall	3.21	111
2016 Winter	3.03	67
2016 Fall	3.18	89
2017 Winter	3.17	73
2017 Fall	2.95	62
2018 Winter	2.56	78
2021 Fall	3.28	293
2022 Fall	3.45	195

Table 36. Summary of the results of the Science domain from the Fall 2014 until Fall 2022.

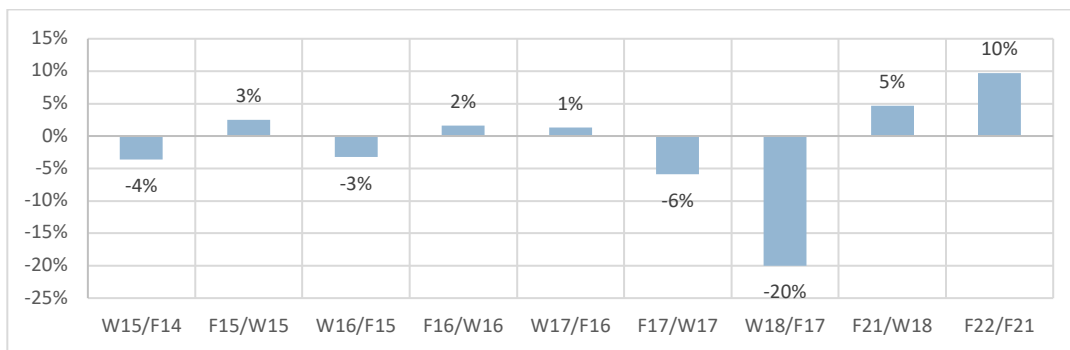


Figure 12. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

Compared to 10 previous assessment rounds (Table 36), the *Science* domain had clear improvements shown in Fig. 12 as well. We assessed 195 students, the second highest since 2014. The overall AIP of 3.45 is the highest score so far; an improvement of 5% compared to Fall 2021, and 10% compared to the Fall 2014 baseline.

7.1. BIOL 1040 – Environmental Studies

Section (s)	# Sections	# Students	Instructor
L01	1	26	Adriana Alegre
Totals	1	26	

Table 37. Sections assessed and participating faculty.

7.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	
1.2	LO1	Multiple Choice	
1.3	LO2	Multiple Choice	
1.4	LO2	Multiple Choice	
1.5	LO3	Multiple Choice	
1.6	LO3	Multiple Choice	

Table 38. Artifact for BIOL-1040. The Final exam used 6 items to assess the 3 rubric learning outcomes.

7.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	2	1	0	23	3.7
1.2	LO1	0	6	1	19	3.5
1.3	LO2	1	0	1	24	3.8
1.4	LO2	0	0	0	26	4.0
1.5	LO3	1	0	0	25	3.9
1.6	LO3	0	4	7	15	3.4

Table 39. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.1.3. Data Analysis

According to faculty:

- **Foundation:** 100% of students answered the questions correctly, that represent an outstanding result: knowledge and comprehension of terminology related with environmental studies. Students have demonstrated the understandings of ecological footprint and sustainability practices.
- **Critical thinking:** students have demonstrated an accurate analysis of problems, and evaluation of evidence to reach to a conclusion, 100% of them respond correctly.
- **Communication:** the data collected has demonstrated that 96% of students were able to express ideas in different forms and applied their knowledge to a subject area. They have demonstrated outstanding results.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	1	LO 1	3.60	Between Effective and Outstanding	26	100%	At or above expectations
#Items	6	LO 2	3.92	Between Effective and Outstanding	26	100%	At or above expectations
#Sections	1	LO 3	3.65	Between Effective and Outstanding	25	96%	At or above expectations
# Students	26	Overall	3.72	Between Effective and Outstanding	26	100%	At or above expectations
# Students at or above % of success				26	out of	26	

Table 40. Overall analysis for BIOL-1040.

7.1.4. Conclusions

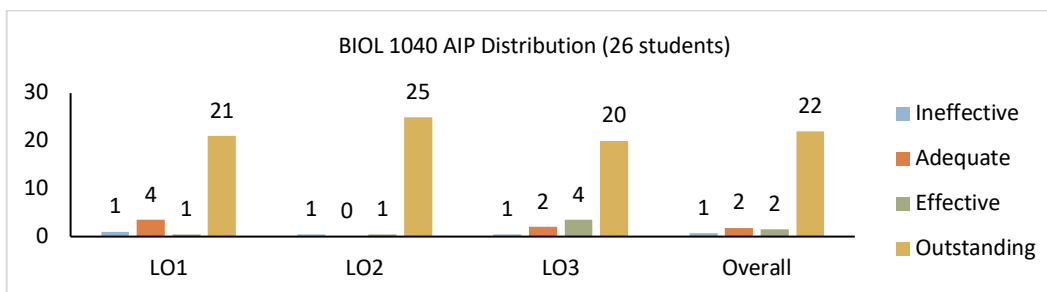


Figure 13. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- The data collected in the course BIOL-1040 has shown that the learning outcomes has been reached. Students were able to explain scientific terminology, critically evaluate problems and applied their knowledge to solved problems and provide the solutions, as well as to be able to communicate knowledge and ideas in an appropriate scientific way.
- The possible areas of strength in students’ achievements based on the assessment results would be the first two pillar: Foundation and Critical thinking. The weaknesses would be Communication of scientific ideas. However, the whole class data were outstanding.

7.2. BIOL 1500 Biology I with Lab

Section (s)	# Sections	# Students	Instructor
D06, D07, D08	3	55	Katie Crump
E05, E06	2	39	Sabina Joseph
Totals	5	94	

Table 41. Sections assessed and participating faculty.

7.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	Question 30 on Final Exam
1.2	LO1	Multiple Choice	Question 31 on Final Exam
1.3	LO2	Multiple Choice	Question 10 on Final Exam
1.4	LO2	Multiple Choice	Question 11 on Final Exam
1.5	LO3	Multiple Choice	Question 41 on Final Exam
2.1	LO3	Lab Report	Hypothesis of Lab Report

Table 42. Artifacts for BIOL-1500. The Final exam assessed learning outcomes 1, 2, and 3 using 5 items, while a lab report was used to assess the Communication LO using 1 item.

7.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	7	2	1	84	3.72
1.2	LO1	2	4	1	87	3.84
1.3	LO2	1	2	2	89	3.90
1.4	LO2	12	3	4	74	3.47
1.5	LO3	15	0	21	58	3.30
1.6	LO3	2	3	25	64	3.61

Table 43. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.2.3. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	4	LO 1	3.78	Between Effective and Outstanding	93	99%	At or above expectations
#Items	7	LO 2	3.69	Between Effective and Outstanding	92	98%	At or above expectations
#Sections	5	LO 3	3.45	Between Effective and Outstanding	90	96%	At or above expectations
# Students	94	Overall	3.64	Between Effective and Outstanding	93	99%	At or above expectations
# Students at or above % of success					93	out of	94

Table 44. Overall analysis for BIOL-1500.

According to faculty:

- **Foundations:** 99% of the students performed between effective and outstanding, representing that the vast majority of the class understands basic cell biology terminology. The results demonstrate that most students within the sample understand basic cell biology terminology.
- **Critical Thinking:** 98% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. The results demonstrate that most students can problem-solve fundamental biological problems.
- **Communication:** while students didn't perform as high as LO1 and LO2 the majority of the class still performed very well (96%) and understand biological problems and communication in today's society.

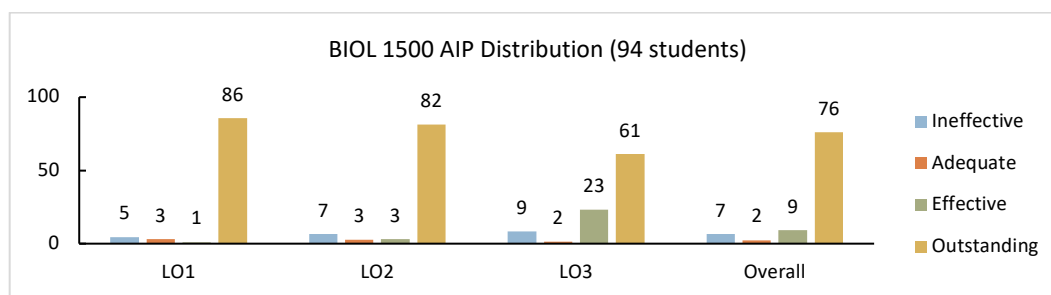


Figure 14. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

7.2.4. Conclusions

According to faculty:

- Overall, the data was outstanding with the majority of the class knowing basic cell biology concepts, critical thinking in cell biology, and science communication.
- The students exhibit strengths in foundation and critical thinking. However, there can be improvement in science communication.

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

Section (s)	# Sections	# Students	Instructor
D05, D06, D07	3	39	Maria Ballester
E03, E04, E05	3	36	Graeme Gardner
Totals	6	75	

Table 45. Sections assessed and participating faculty.

7.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	ACS Final	Questions: 10 (gray exam) and 11 (yellow exam)
1.2	LO1	ACS Final	Questions: 28 (gray exam) and 33 (yellow exam)
1.3	LO2	ACS Final	Questions: 22 (gray exam) and 19 (yellow exam)
1.4	LO2	ACS Final	Questions: 35 (gray exam) and 36 (yellow exam)
1.5	LO3	ACS Final	Questions: 64 (gray exam) and 44 (yellow exam)
1.6	LO3	Lab Practical	

Table 46. Artifacts for Chem-1300. The Final exam was used to assess the three learning outcomes using 5 items. Additionally, a second artifact (1 items) was used to assess learning outcome 3 (Communication).

7.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	3	6	31	35	3.31
1.2	LO1	14	1	11	49	3.27
1.3	LO2	13	28	6	28	2.65
1.4	LO2	5	19	6	45	3.21
1.5	LO3	17	6	20	32	2.89
2.1	LO3	9	26	23	17	2.64

Table 47. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.3.3. Data Analysis

- Students did generally well on the Foundation and Critical Thinking learning outcomes, however there is noticeable room for improvement in interpreting atomic properties and chemical reactions (item 1.3).
- Communication LO also 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 1.5 and 2.1 were lower than expected. The LOP of 73% is less than the LOP target.
- Foundation and Critical Thinking had a LOP above the goal of 75%. Foundation: 93% of students (70) were between *effective* and *outstanding* while in Critical Thinking the percentage was 77% (58 students).
- Overall, students averaged an AIP score of 3.00, with 69 of them (92%) at or above the 2.5 points threshold.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	4	LO 1	3.29	Between Effective and Outstanding	70	93%	At or above expectations
#Items	7	LO 2	2.93	Between Adequate and Effective	58	77%	At or above expectations
#Sections	6	LO 3	2.77	Between Adequate and Effective	55	73%	Below expectations
# Students	75	Overall	3.00	Between Effective and Outstanding	69	92%	At or above expectations
# Students at or above % of success					69	out of	75

Table 48. Overall analysis for CHEM-1300.

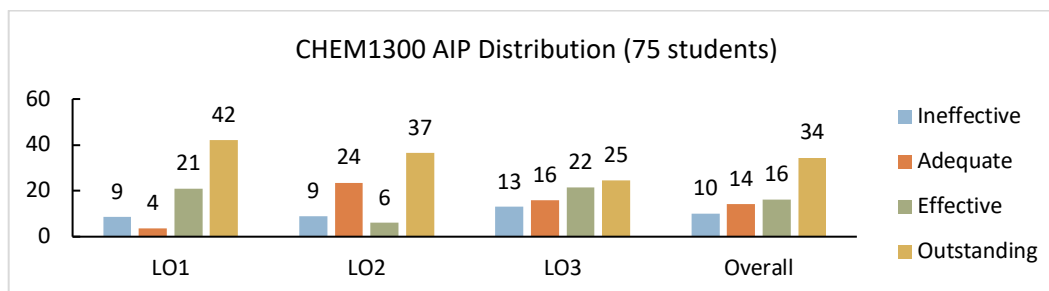


Figure 15. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

7.3.4. Conclusions

- Students did generally well within the quantitative aspects of the assessment, but there needs to be more emphasis on the conceptual aspects (Fig. 15).
- Communication LO, 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.

8. Social and Behavioral Sciences

Courses Assessed: PSYC-1020, INST-1500, and ECN-2025

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

Details		LO	AIP	Score is:	LOP	LOP is:
# Artifacts	12	LO 1	3.21	Between Effective and Outstanding	81%	At or above expectations
# Items	18	LO 2	3.29	Between Effective and Outstanding	86%	At or above expectations
# Sections	12	LO 3	3.30	Between Effective and Outstanding	87%	At or above expectations
# Students	283	Overall	3.30	Between Effective and Outstanding	94%	At or above expectations
		# Students at or above % of success		266	out of	283

Table 49. Overall analysis for the Science domain.

A summary of the *Social and Behavioral Sciences* domain for Fall 2022 and Winter 2023 can be seen in table 49 that can be summarized as:

- A total of 266 students were assessed in 12 sections spread through 3 departments.
- Students were assessed using 12 artifacts, divided into 18 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 81% of students were *at or above expectations* with an AIP score of 3.21.
- **Critical Thinking:** the AIP score was 3.29, between *effective* and *outstanding*. The LOP was 86% was also above of the 75% target.
- **Communication:** had the highest AIP score of 3.30 with a LOP of 87%, also above of 75%.

Overall, 266 students (94%) exceeded the LOP target with an AIP score of 3.27 points. Faculty members were pleased with student performance on this assessment round (Fig. 16).

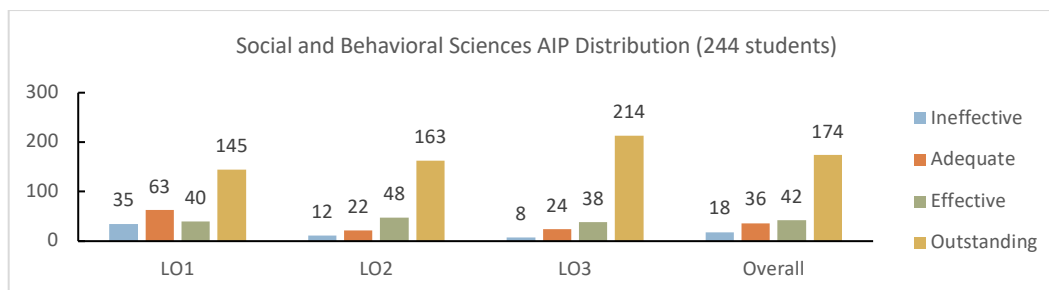


Figure 16. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Assessment Round	Overall Score	#Students
2014 Fall	2.90	101
2015 Winter	2.60	41
2015 Fall	2.70	31
2017 Winter	2.60	59

Assessment Round	Overall Score	#Students
2017 Fall	2.90	48
2018 Winter	3.20	59
2021 Fall	3.23	161
2023 Winter - 2022 Fall	3.27	244

Table 50. Summary of the results of the Science domain from the Fall 2014 until Winter 2023.

A comparison from Fall 2014 until our last assessment for the *Social and Behavioral Sciences* domain can be seen in table 14. During this time, 7 assessments rounds were performed. We assessed 244 students, the highest since 2014. The overall AIP of 3.27 is also the highest score so far; an improvement of 1% compared to Fall 2021, and 12% compared to the Fall 2014 baseline.

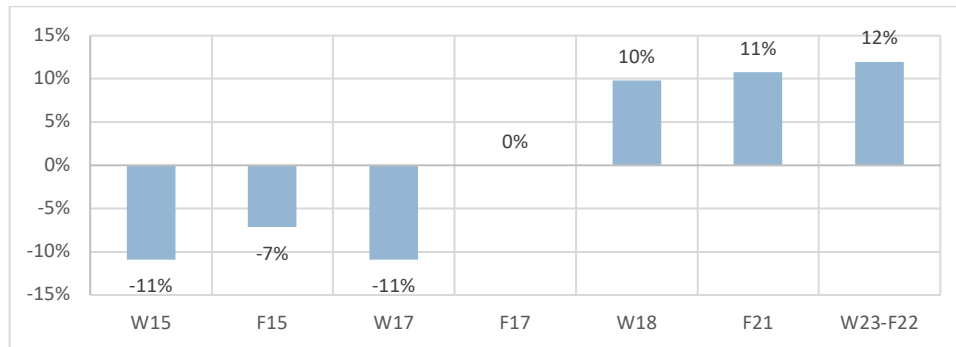


Figure 17. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

8.1. PSYC 1020/1020H Introduction to Psychology/Honors

Section (s)	# Sections	# Students	Instructor
D06, D10, D23	3	80	Myron Burns
L04, L05	2	28	Michael Durnam
D07	1	30	Justin Landy
D18, D21, E01	3	77	Leticia Lopez
Totals	9	215	

Table 51. Sections assessed and participating faculty.

8.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	
1.2	LO1	Multiple Choice	
1.3	LO2	Multiple Choice	
1.4	LO2	Multiple Choice	
1.5	LO3	Multiple Choice	
1.6	LO3	Multiple Choice	

Table 52. Artifact for PSYC-1020.

8.1.2. Data Presentation

Artifact	Learning Outcome	Score				AIP
		1 Ineffective	2 Adequate	3 Effective	4 Outstanding	
1.1	LO1	44	99	2	70	2.46
1.2	LO1	22	10	49	134	3.37
1.3	LO2	6	19	58	132	3.47
1.4	LO2	14	8	8	185	3.69
1.5	LO3	5	10	16	184	3.76
1.6	LO3	6	19	25	165	3.62

Table 53. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

8.1.3. Data Analysis

- **Foundation:** 85% of students (182) answered the questions at or above expectations. Students have clearly demonstrated the understandings of basic concepts in psychology.
- **Critical thinking:** students have demonstrated an accurate analysis of problems, and evaluation of evidence to reach to a conclusion. A number of 211 students (98%) have been at or above expectations.
- **Communication:** the data collected has demonstrated that students do better at communicating ideas. 99% of students (213) were able to express their ideas in different forms and applied their knowledge. They have demonstrated results between effective and outstanding.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	9	LO 1	2.91	Between Adequate and Effective	182	85%	At or above expectations
#Items	6	LO 2	3.58	Between Effective and Outstanding	211	98%	At or above expectations
#Sections	9	LO 3	3.69	Between Effective and Outstanding	213	99%	At or above expectations
# Students	215	Overall	3.40	Between Effective and Outstanding	211	98%	At or above expectations
# Students at or above % of success					121	out of	138

Table 54. Overall analysis for PSYC-1020.

8.1.4. Conclusions

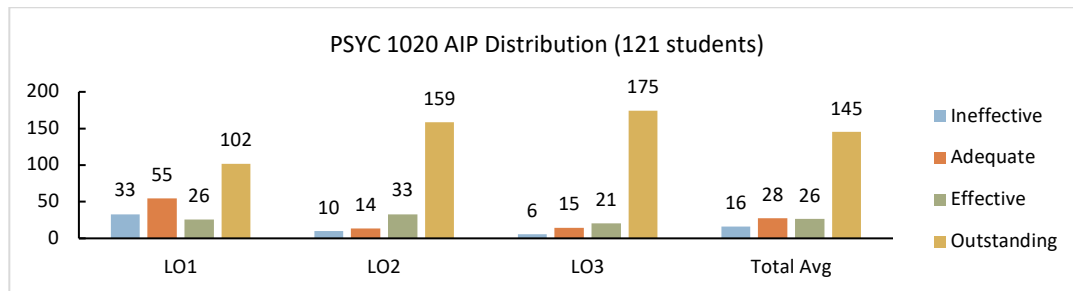


Figure 18. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- The data collected in the course PSYC-1020 has shown that the learning outcomes has been reached. Students were able to explain terminology, critically evaluate problems and applied their knowledge to solve and provide solutions, as well as to be able to communicate knowledge and ideas in an appropriate scientific way.
- The possible area of weaknesses in students' achievements based on the assessment results would be the first pillar: Foundation.

8.2. INST 1500 Global Issues

Section (s)	# Sections	# Students	Instructor
D01	1	29	Drewry Wofford
Totals	1	29	

Table 55. Sections assessed and participating faculty.

8.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Research paper	3-5 page research paper on a crisis of student's choice
1.2	LO1	Research paper	3-5 page research paper on a crisis of student's choice
1.3	LO2	Research paper	3-5 page research paper on a crisis of student's choice
1.4	LO2	Essay on final exam	Students choose one out of 2 prompts on a problem and use 3 methodologies studied and write essay.
1.5	LO3	Essay on final exam	Students choose one out of 2 prompts on a problem and use 3 methodologies studied and write essay.

Artifact	Learning Outcome	Assessment type	Comment
1.6	LO3	Essay on final exam	Students choose one out of 2 prompts on a problem and use 3 methodologies studied and write essay.

Table 56. Artifact for INST-1500.

8.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	3	9	10	7	2.72
1.2	LO1	1	7	17	4	2.83
1.3	LO2	2	9	12	6	2.76
1.4	LO2	1	8	18	2	2.72
1.5	LO3	3	8	11	7	2.76
1.6	LO3	1	8	15	5	2.83

Table 57. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

8.2.3. Data Analysis

It's hard to understand the results without understanding why the artifacts were graded as they were. Without any understanding of how the artifacts were evaluated, the results seem disappointing. However, faculty believes that the students performed better than the assessment would indicate.

- **Foundation:** 59% of students (17) answered the questions at or above expectations. Students clearly have problems with the course's foundations. Geography was a principal foundation in the course, and it was used effectively in the artifacts submitted as well as those not submitted. Other foundational elements were writing skills, use of the methodologies in the course, and discussion and engagement.
- **Critical thinking:** A number of 18 students (62%) have been at or above expectations. For critical thinking, students were challenged to use the methodologies in our text. International Studies is interdisciplinary, and students were challenged to use geography, history, economics, political science, and cultural anthropology in their evaluation of the critical issues. They did this very effectively on their final exam, and to a slightly lesser degree, in their research papers.
- **Communication:** the data collected seems to show that students can do better at communicating ideas. 62% of students (18) were able to express their ideas in different forms and applied their knowledge. There was an entirely separate project that students participated in, which was an individual presentation based upon one country and the issues and geography for that country. That demonstrated their communication skills as well as their research skills.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	2.78	Between Adequate and Effective	17	59%	Below expectations
#Items	6	LO 2	2.74	Between Adequate and Effective	18	62%	Below expectations
#Sections	1	LO 3	2.79	Between Adequate and Effective	18	62%	Below expectations
# Students	29	Overall	2.77	Between Adequate and Effective	16	55%	Below expectations
# Students at or above % of success				16	out of	29	

Table 58. Overall analysis for INST-1500.

8.2.4. Conclusions

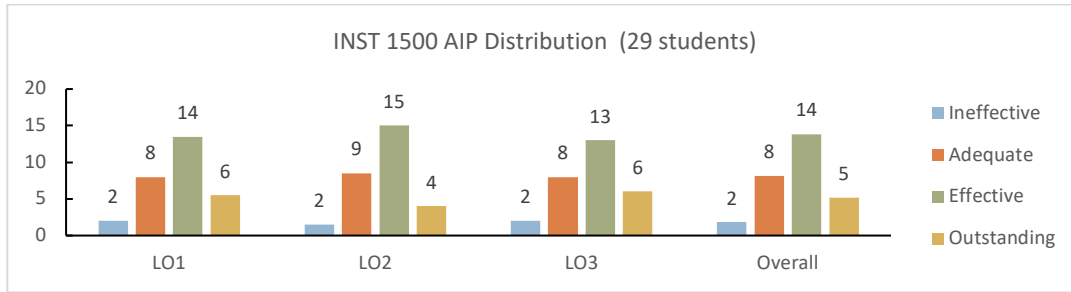


Figure 19. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- It would make sense for a brief discussion prior to the assessment between the reviewers and the instructor. This would allow the instructor to explain the artifacts and the instructor's expectations from the students.
- There are no actual comments from the reviewers. It would be helpful to understand why they graded artifacts as they did, and where they saw the deficiencies. Although the numerical data is helpful, an actual understand of what the reviewers were looking for and what they perceived as missing would improve the feedback process.
- Suggestions for improvement. Since the reviewers assessed the artifacts, it would be helpful to the instructor to understand how the artifacts might have been improved.

8.3. ECN 2025 Principles of Macroeconomics

Section (s)	# Sections	# Students	Instructor
D01, D02	2	39	David Cho
Totals	2	39	

Table 59. Sections assessed and participating faculty.

8.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	
1.2	LO1	Multiple Choice	
1.3	LO2	Multiple Choice	
1.4	LO2	Multiple Choice	
1.5	LO3	Multiple Choice	
1.6	LO3	Multiple Choice	

Table 60. Artifact for ECN-2025.

8.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	1	1	37	3.92
1.2	LO1	0	0	1	38	3.97
1.3	LO2	2	5	9	23	3.36
1.4	LO2	0	2	5	32	3.77
1.5	LO3	0	2	3	34	3.82
1.6	LO3	0	1	6	32	3.79

Table 61. Results for each rubric Learning Outcome. The Table shows the number of students per score.

8.3.3. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	1	LO 1	3.95	Between Effective and Outstanding	39	100%	At or above expectations
#Items	6	LO 2	3.56	Between Effective and Outstanding	38	97%	At or above expectations
#Sections	2	LO 3	3.81	Between Effective and Outstanding	39	100%	At or above expectations
# Students	39	Overall	3.77	Between Effective and Outstanding	39	100%	At or above expectations
# Students at or above % of success					39	out of	39

Table 62. Overall analysis for ECN-2025.

- **Foundation:** 100% of students (39) answered the questions at or above expectations. Students have clearly demonstrated the understandings of basic concepts.
- **Critical thinking:** students have demonstrated an accurate analysis of problems, and evaluation of evidence to reach to a conclusion. A number of 38 students (97%) have been at or above expectations.
- **Communication:** the data collected has demonstrated that students do better at communicating ideas. 100% of students (39) were able to express their ideas in different forms and applied their knowledge.

8.3.4. Conclusions

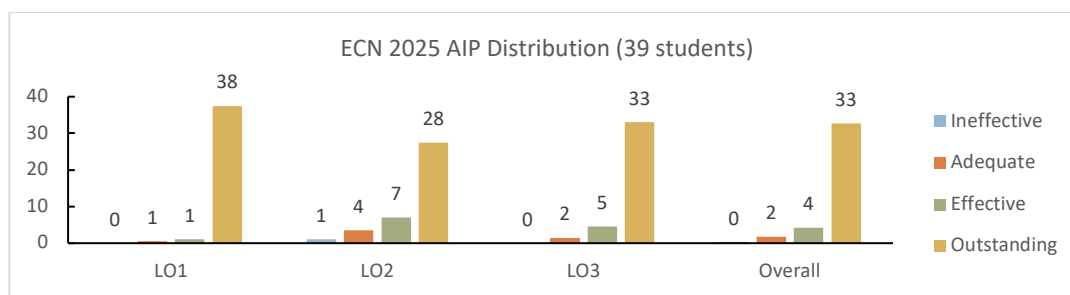


Figure 20. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

The data collected in the course ECN-2025 has shown that the learning outcomes has been reached on the 3 learning outcomes. Students were able to explain terminology, critically evaluate problems and applied their knowledge to solve and provide solutions, as well as to be able to communicate knowledge and ideas in an appropriate scientific way.

9. Written Composition

Courses Assessed: COMP-2000 and COMP-2000H.

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

Details	LO	AIP	Score is:	LOP	LOP is:
# Artifacts	10	LO 1	3.04	Between Effective and Outstanding	96%
# Items	12	LO 2	2.71	Between Adequate and Effective	82%
# Sections	5	LO 3	2.88	Between Adequate and Effective	93%
# Students	28	Overall	2.88	Between Adequate and Effective	89%
# Students at or above % of success			25	out of	28

Table 63. Overall analysis for the Written Composition domain.

Table 63 contains a summary of the *Written Composition* domain for Winter 2023. Additionally, Fig. 21 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:

- A total of 28 students were assessed in 5 sections.

- Students were assessed using 10 artifacts, divided into 12 items.
- Essays were selected/created by faculty as part of required course assignments.
- **Foundation:** 96% of students were at or above the expected outcome of 75%, with an AIP score between *adequate* and *effective* of 3.04.
- **Critical Thinking:** Students had the lowest AIP score of 2.71, between *adequate* and *effective*. The LOP success was 83%, above the 75% target.
- **Communication:** the AIP score was 2.88 (between *adequate* and *effective*) with a LOP of 95%, well above of the 75% target.

Overall, 25 students (89%) exceeded the LOP target with an AIP score of 2.88 points.

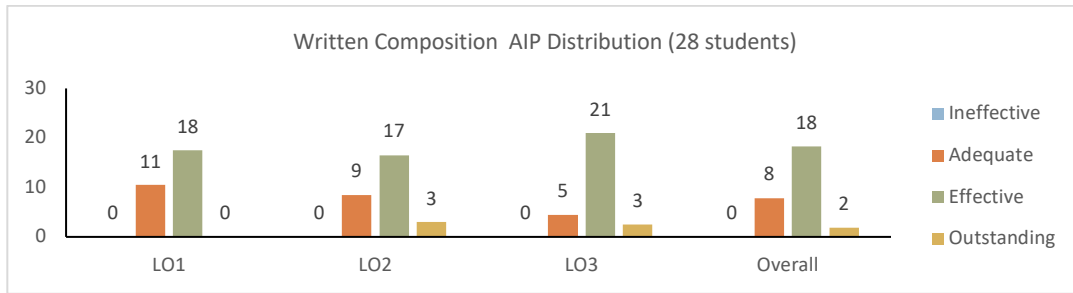


Figure 21. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 64 contains a summary of the *Written Composition* domain 9 assessments rounds from Fall 2014 until our last assessment. Compared to our previous assessment, we assessed 28 students obtaining an overall AIP of 2.81, an improvement of 6% compared to Fall 2021 (Fig 22).

Assessment Round	Overall Score	#Students
2014 Fall	2.87	25
2015 Winter	3.16	28
2015 Fall	3.30	12
2016 Fall	2.48	42
2017 Winter	2.71	37
2017 Fall	2.85	32
2018 Winter	2.88	72
2021 Fall	2.64	23
2023 Winter	2.81	28

Table 64. Summary of the results of the Science domain from the Fall 2014 until Fall 2022.

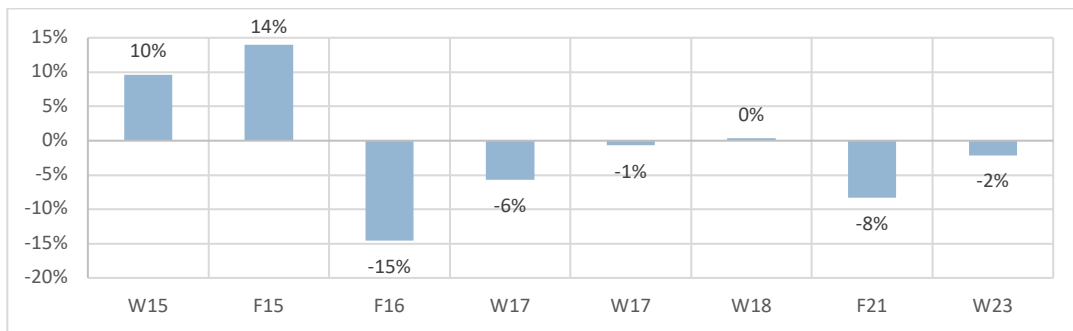


Figure 22. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

9.1. COMP 2000/2000H– Advanced College Writing/Honors

Section (s)	# Sections	# Students	Instructor
D26	1	5	Melissa Bianchi
D29	1	6	Mary Adele Leon
L07	1	5	Daniel Malinconico
D27	1	6	Janine Morris
Totals	4	22	

Table 65. Sections assessed and participating faculty.

9.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Essay	
1.2	LO1	Essay	
1.3	LO2	Essay	
1.4	LO2	Essay	
1.5	LO3	Essay	
1.6	LO3	Essay	

Table 66. Artifact for COMP-2000. The Final exam used 6 items to assess the 3 rubric learning outcomes.

9.1.2. Data Presentation

Artifact	Learning Outcome	Score				AIP
		1 Ineffective	2 Adequate	3 Effective	4 Outstanding	
1.1	LO1	0	7	15	0	2.68
1.2	LO1	0	11	11	0	2.50
1.3	LO2	0	7	12	3	2.82
1.4	LO2	0	7	15	0	2.68
1.5	LO3	0	4	16	2	2.91
1.6	LO3	0	3	16	3	3.00

Table 67. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

9.1.3. Data Analysis

- Overall, 18 students (82%) scored between effective and outstanding on all learning objectives, with an average score of 2.77 points. This is well above the learning outcome proficiency threshold of 75%.
- The three learning outcomes were above the LOP target, with Foundation at 77% (17 students) with an average score of 2.59, Critical thinking at 82% (18 students) with 2.75, and Communication at 91% (20) with 2.95.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	8	LO 1	2.59	Between Adequate and Effective	17	77%	At or above expectations
#Items	6	LO 2	2.75	Between Adequate and Effective	18	82%	At or above expectations
#Sections	4	LO 3	2.95	Between Adequate and Effective	20	91%	At or above expectations
# Students	22	Overall	2.77	Between Adequate and Effective	18	82%	At or above expectations
# Students at or above % of success				18	out of	22	

Table 68. Overall analysis for COMP-2000.

9.1.4. Conclusions

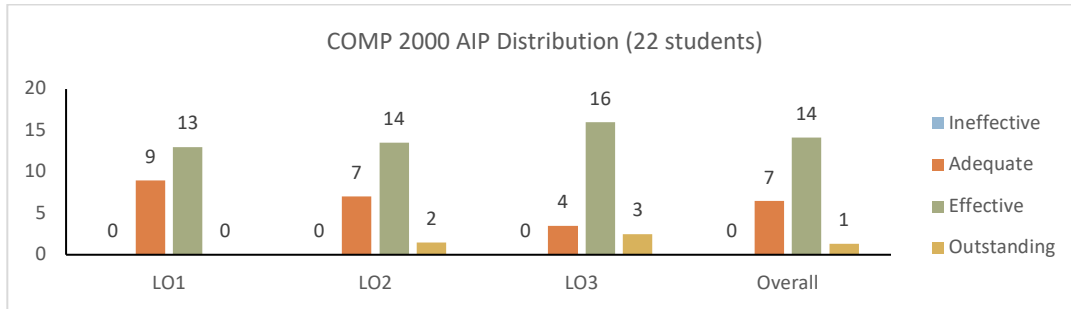


Figure 23. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- The possible areas of strength in students’ achievements based on the assessment results would be Critical thinking and Communication. Foundation seems to be the weakens at 77% LOP.

9.2. COMP 2000H– Advanced College Writing Honors

Section (s)	# Sections	# Students	Instructor
D02	1	6	Star Vanguri
Totals	1	6	

Table 69. Sections assessed and participating faculty.

9.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Essay	
1.2	LO1	Essay	
1.3	LO2	Essay	
1.4	LO2	Essay	
1.5	LO3	Essay	
1.6	LO3	Essay	

Table 70. Artifacts for COMP-2000H. The Final exam assessed learning outcomes 1, 2, and 3 using 5 items, while a lab report was used to assess the Communication LO using 1 item.

9.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	1	5	0	2.83
1.2	LO1	0	2	4	0	2.67
1.3	LO2	0	1	3	2	3.17
1.4	LO2	0	2	3	1	2.83
1.5	LO3	0	1	5	0	2.83
1.6	LO3	0	1	5	0	2.83

Table 71. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/LO is also given.

9.2.3. Data Analysis

Details	LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	LO 1	2.75	Between Adequate and Effective	5	83%	At or above expectations
#Items	LO 2	3.00	Between Effective and Outstanding	5	83%	At or above expectations
#Sections	LO 3	2.83	Between Adequate and Effective	6	100%	At or above expectations
# Students	Overall	2.86	Between Adequate and Effective	5	83%	At or above expectations
# Students at or above % of success				5	out of	6

Table 72. Overall analysis for COMP-2000H.

- Overall, 5 students (83%) scored between effective and outstanding on all learning objectives, with an average score of 2.86 points. This is well above the learning outcome proficiency threshold of 75%.

- The three learning outcomes were above the LOP target, with Foundation at 83% with an average score of 2.75, Critical thinking at 83% with 3.00, and Communication at 100% with 2.83.

9.2.4. Conclusions

- Based on the assessment results, the possible areas of strength in students' achievements would be Critical thinking and Communication. Foundation seems to be the weakens at 2.75 AIP.

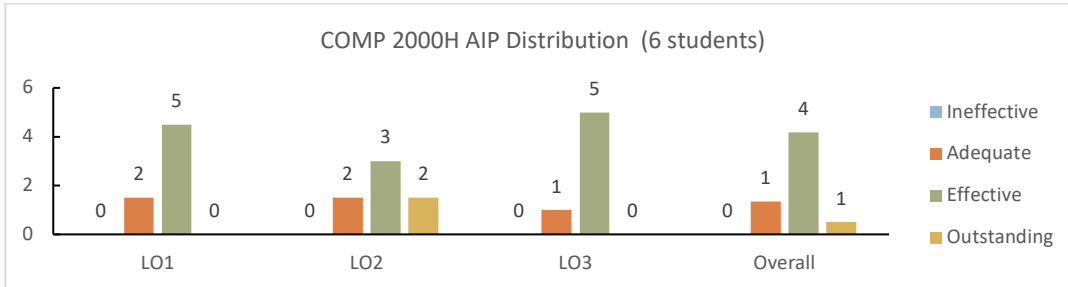


Figure 24. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

10. Learning Outcomes and Assessment Rubrics

The General Education program learning outcomes are based on three (3) pillars (categories), aligned with the mission of NSU and the Gen Ed program: Foundation, Critical Thinking, and Communication. 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.

10.1. Arts and Humanities

10.1.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

10.1.2. Rubric

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.

10.2. Mathematics

10.2.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

10.2.2. Rubric

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.

10.3. Science

10.3.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

10.3.2. Rubric

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.
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.

10.4. Social and Behavioral Sciences

10.4.1. Learning Objectives

Foundation	Critical thinking	Communication
Identify and understand the major concepts and methods to investigate, analyze, or predict human behavior and cognition relevant to the discipline.	Use concepts and evidence within the subject area to explain human behavior and cognition.	Communicate knowledge, thoughts, and reasoning clearly and effectively within the subject area.

10.4.2. Rubric

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.

10.5. Written Composition

10.5.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

10.5.2. Rubric

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 understanding or consideration of audience and contextual awareness.	Language choice, tone, and style indicate an understanding of audience and contextual awareness, although use and structure may be inconsistent.	Language choice, tone, and style indicate a consistent understanding of audience and contextual awareness.	Language choice, tone, and style indicate an advanced understanding of audience and contextual awareness.

Appendix 4

Fall 2023 - Winter 2024

Assessment Analysis and Report Summary

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1. Introduction

The General Education Taskforce is responsible for assessing the **General Education learning outcomes** at the **course level**. This goal could only be carried out by the invaluable help made by the participating faculty. The taskforce would like to recognize the effort every single one of them put into this duty. During the Fall 2023 and Winter 2024 we carried out our **second assessment** round of the **three-year cycle** we are currently running. We measured the performance of students in each of the General Education learning outcomes through a series of preestablished assessment **rubrics**. The assessment rubrics were written for each of the 5 domains and their results were evaluated against two per-established benchmarks: a *Learning Outcome Proficiency (LOP)* target of **75%** and an *Average Individual Proficiency (AIP)* threshold of **2.5** points out of 4. This means that we were expecting at least 75% of our students to have an average individual proficiency of 2.5 points or higher. During this assessment round, participating faculty assessed:

- 942 students.

- 5 domains: Arts and Humanities (Winter 2024), Mathematics (Fall 2023), Science (Fall 2023), Social and Behavioral Sciences (Fall 2023/Winter 2024), and Written Composition (Winter 2024).
- 14 courses, divided into 47 sections.
- 65 artifacts, divided into 128 items selected/created by faculty of each domain and standardized for each course.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	65	45%	2.67	3	3	6	18
Mathematics	340	78%	3.29	3	15	29	60
Sciences	222	94%	3.37	3	13	9	20
Social and Behavioral Sciences	291	98%	3.45	3	11	11	18
Written Composition	24	75%	2.73	2	5	10	12
Overall Results	942	86%	3.10	14	47	65	128

Table 1. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains.

Semester	Art & Humanities	Mathematics	Science	Social & 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
22 Fall - 23 Winter	2.92	2.94	3.45	3.30	2.88	3.10	744
23 Fall - 24 Winter	2.67	3.29	3.37	3.45	2.73	3.10	942
%difference to Fall 21	2.7%	13.4%	2.7%	6.5%	3.3%	5.7%	15.9%
%difference to Fall 14	-6.8%	17.2%	7.4%	17.9%	-5.0%	6.7%	83.7%

Table 2. Summary of the results of each domain from the Fall 2014 until Winter 2024. The difference are taken with respect to Fall 2014, our first recorded assessment using a similar format, and Fall 2021 when the current format was put in place.

Overall, the *learning outcome proficiency* (LOP) was 86%, a decrease of 3.6% with respect to Fall while the *average individual proficiency* (AIP) was 3.10 points, an increase of 5.7%. Individually, the domains fared well, as can see in Table 1. Only the Arts and Humanities domain showed a lower LOP than expected (45%). However, we can confidently say that overall, our goal for the Fall 2023- Winter 2024 assessment was met.

- We assessed close to 20% of the total amount of undergraduate students (942).
- Our AIP of **3.10** is the same as our previous assessment round; the **highest** so far.
- All domains had an increase in their AIP, ranging from 2.7 to 13.4% with respect to Fall 2021.

Domain	Daytime				Evening				Online			
	Daytime	Evening	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference	Daytime	Online	% Mean diff	Statistical difference
Arts and Humanities					2.81	2.54	10.1%	No				
Mathematics	3.09	3.36	8.3%	No	3.09	3.06	1.1%	No	3.36	3.06	9.4%	No
Science	3.44	3.33	3.2%	No								
Social and Behavioral Sciences	3.49	3.49	0.2%	No								
Written Composition	2.77	2.53	8.8%	No	2.77	2.80	1.1%	No	2.53	2.80	9.9%	No
Overall	3.33	3.33	0.2%	No	3.33	2.96	11.7%	Yes	3.33	2.96	12.0%	Yes

Table 3. The differences between the means of daytime, evening, or online courses.

Table 3 shows the mean scores differences between daytime, evening, or online courses. 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 the 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. Between daytime and evening students, there is not a statistically significant difference in any domain. The same can be said when comparing daytime and online students. However, when analyzing at all the data it appears there is a statistically significant difference of 11.7% in favor of daytime students. A similar situation arises when comparing making a comparison between evening and online students. Again, no other domain showed any statistical difference but overall, there was a 12% difference in favor of evening students.

2. Procedure

2.1. Courses Assessed

For this assessment period, the General Education Taskforce selected a set of courses per domain that met our learning outcomes. We also wanted to include 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. The General Education Taskforce suggested to assess a number close to 20% of the course’s student population.

Domain	Courses Assessed
Arts and Humanities	ARTS-1000, LITR-2031, and HIST-1050.
Mathematics	MATH-1040, MATH-2100, and MATH-2020 (and MATH 2020H).
Sciences	BIOL-1500, CHEM-1300 (and CHEM-1300H) and PHYS-2350.
Social and Behavioral Sciences	PSYC-1020 (and PSYC-1020H), ECN-2025, and POLS-1010.
Written Composition	COMP-2000 and COMP-2000H.

Table 4. Courses assessed per domain.

2.2. 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 that final exam is an item. Midterm papers or final projects are also considered artifacts. The artifacts used during this assessment were **course embedded** and designed/chosen to measure the General Education learning outcomes through a series of assessment rubrics, divided into **measurable objectives**. Courses were allowed to use multiple measures to assess any individual General Education 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).

2.3. Process

Faculty had an important role in deciding which artifact(s) to use during this assessment process. 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.

2.4. Analysis and Conclusions

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

- **Average Individual Proficiency (AIP) threshold:** 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 (LOP) target:** 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 75% of our students at or above an average individual proficiency of 2.5 points.

Faculty completed a report though a Microsoft Excel file. This file included individual students’ scores and various analysis of the data. 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 General Education program assessment, as it will help us improve the process and ensure that our methods are working.

3. General Education Courses Used

In our previous assessment, we made a review of the General Education courses offered in the 55 NSU undergraduate programs. The study of each program’s four-year plans allowed us to build the table below. This table, divided by domain, shows how many programs (a minimum of 3 was used) require a particular domain course. Our selection of courses for this assessment round is highlighted in green. Only ARTS-1000, suggested by the department chair, is not in the list.

Arts and Humanities		Mathematics		Science		Social and Behavioral Sciences		Written Composition	
HIST 1050	10	MATH 2020	23	BIOL 1500	10	PSYC 1020	13	COMP 1500	22
HIST 1170	4	MATH 1040	18	CHEM 1300	9	ECN 2025	10	COMP 2000	22
LITR 2010	4	MATH 2100	10	PHYS 1020	7	ECN 2020	8		
LITR 2020	4	MATH 2200	7	BIOL 1400	6	POLS 1010	8		
LITR 2021	4	MATH 1050	6	CHEM 1310	6	SOCL 1020	3		
LITR 2030	4	MATH 1200	3	PHYS 2350	6				
ARTS 1200	3	MATH 1250	3	BIOL 1510	5				
ARTS 2050	3			CHEM 2400	4				
HIST 1030	3			CHEM 2410	4				
HIST 1040	3			PHYS 2360	4				
LITR 2010	3			PHYS 2400	3				
LITR 2031	3								

Table 5. Data gathered for most suggested/required courses in General Education. Courses in green were used during this assessment round.

4. Arts and Humanities

Courses Assessed: HIST-1050, LITR-2031, and ARTS-1000.

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

Details	LO	AIP	AIP is:	LOP	LOP is:	
#Artifacts	6	LO 1	2.69	Between Adequate and Effective	51%	Below expectations
#Items	18	LO 2	2.71	Between Adequate and Effective	50%	Below expectations
#Sections	3	LO 3	2.62	Between Adequate and Effective	51%	Below expectations
# Students	65	Overall	2.67	Between Adequate and Effective	45%	Below expectations
		# Students at or above % of success	29	out of	65	

Table 6. Overall analysis for the Arts and Humanities domain.

Table 6 contains a summary of the *Arts and Humanities* domain for Winter 2024. Additionally, Fig. 1 shows how students overwhelmingly scored at the adequate or effective levels. In this assessment round:

- A total of 65 students were assessed in 3 sections spread through 2 departments.
- Students were assessed using 6 artifacts, divided into 18 items.
- Multiple choice items and essays were selected/created by faculty as part of required course assignments.
- **Foundation:** 51% of students were at or above expectation, with an AIP score between *adequate* and *effective* of 2.69.
- **Critical Thinking:** had the highest AIP score of 2.71, between *adequate* and *effective*. The LOP was 50%, below the 75% target.
- **Communication:** the AIP score was 2.62 with a LOP of 51%, also below the 75% target.
- Overall, 29 students (45%) exceeded the LOP target with an AIP score of 2.67 points. Faculty members were generally pleased with student performance on this assessment. However, it is obvious that all learning outcomes need improvement.

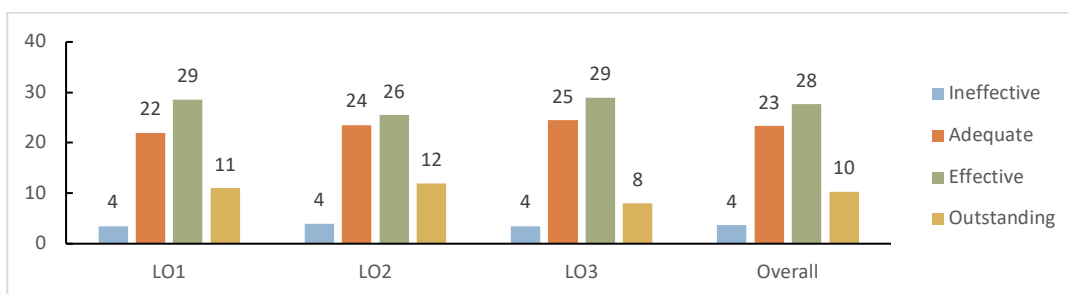


Figure 1. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 7 contains a summary of the *Arts and Humanities* domain from Fall 2014 until our last assessment. During this time, 10 assessments rounds were performed. Additionally, Fig. 2 shows the percentage difference between the overall averages of these assessment rounds. During Winter 2024 we assessed 65 students. The overall AIP of 2.67 is one of the lowest so far. Results show a slight improvement (2%) compared to Fall 2021, and a decrease (7%) compared to the Fall 2014 baseline. The drop is more pronounced (9%) if we compare it to last year's assessment.

Assessment Round	Overall Score	#Students
2014 Fall	2.86	59
2015 Winter	2.89	45
2015 Fall	2.88	87
2016 Fall	2.93	27
2017 Winter	2.70	46
2017 Fall	2.76	33
2018 Winter	2.77	32
2021 Fall	2.61	56
2023 Winter	2.92	71
2024 Winter	2.67	65

Table 7. Summary of the results of the Arts and Humanities domain from the Fall 2014 until Winter 2024.

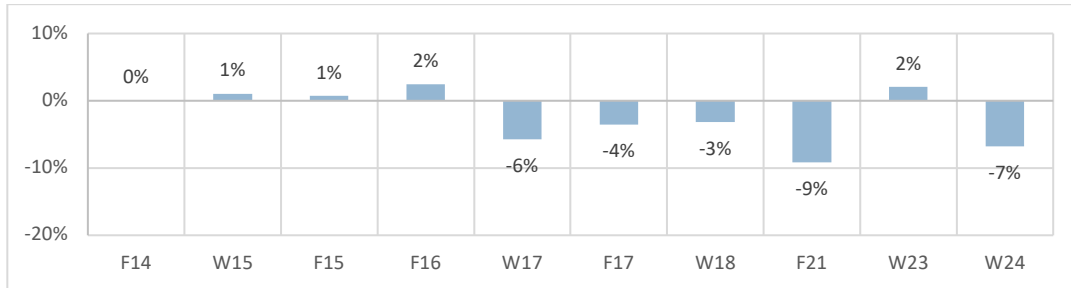


Figure 2. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014.

4.1. HIST 1050 – The United States: From Settlement to Superpower

Section (s)	# Sections	# Students	Instructor
D01	1	26	Teng Li
Totals	1	26	

Table 8. Sections assessed and participating faculty.

4.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	an 800-1000 words essay	"Foundation" in this essay-writing artifact would be how well a student understands the narrative in the textbook.
1.2	LO1	an essay question in an open-note exam	"Foundation" in this time-sensitive exam setting would be how well a student shows the familiarity with basic historical terms.
1.3	LO2	an 800-1000 words essay	"Critical thinking" in this essay-writing artifact would be how well a student analyzes the materials and construct an argument of their own according to the detailed requirements in the prompt.
1.4	LO2	an essay question in an open-note exam	"Critical thinking" in this time-sensitive exam setting would be how well a student organizes the materials to address the question directly.
1.5	LO3	an 800-1000 words essay	"Communication" in this essay-writing artifact would be how well a student adheres to the writing conventions for an analytical essay at college level.
1.6	LO3	an essay question in an open-note exam	"Communication" in this time-sensitive exam setting would be how well a student composes and develops a clear answer that is accessible to the instructor and any educated reviewer.

Table 9. Artifact for HIST-1050.

4.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	1	1	17	7	3.15
1.2	LO1	0	3	11	12	3.35
1.3	LO2	1	8	10	7	2.88
1.4	LO2	0	12	5	9	2.88
1.5	LO3	1	4	13	8	3.08
1.6	LO3	0	5	16	5	3.00

Table 10. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

4.1.3. Data Analysis

- Foundation (LO1) had a LOP of 84%, exceeding the standard of success with an AIP between Effective and Outstanding of 3.25. It shows the students improved on their understandings of historical events
- Critical Thinking (54%) and Communication (69%) did not meet target of 75%. However, both LOs had AIP above the threshold of 2.5 (2.88 and 3.04 respectively). Critical thinking is an essential goal for liberal arts education. HIST 1050 trains students' critical thinking capacities by asking them to articulate sophisticated connections between historical events. Communication is also essential, since they can express their ideas in written language at a level accepted in college. These are long-term goals that require consistent efforts.

Details	LO	AIP	AIP is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	3.25	Between Effective and Outstanding	22	85%	Above expectations
#Items	6	LO 2	2.88	Between Adequate and Effective	14	54%	Below expectations
#Sections	1	LO 3	3.04	Between Effective and Outstanding	18	69%	Below expectations
# Students	26	Overall	3.06	Between Effective and Outstanding	15	58%	Below expectations
# Students at or above % of success				15	out of	26	

Table 11. Overall analysis for HIST-1050.

4.1.4. Conclusions

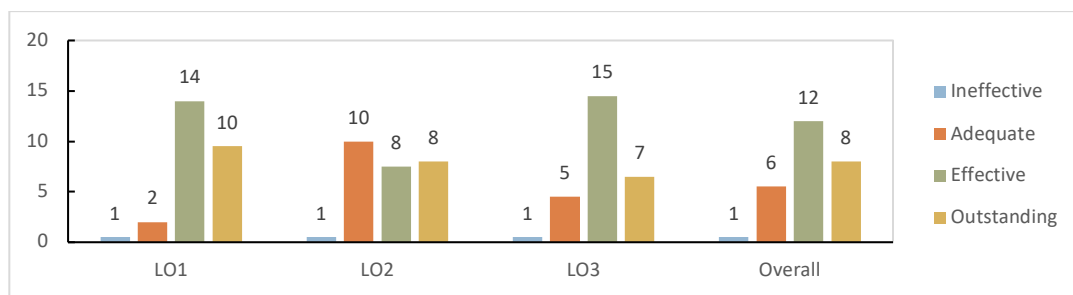


Figure 3. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

4.2. LITR 2031 – World Literature II

Section (s)	# Sections	# Students	Instructor
L01	1	17	Ying Ma
Totals	1	17	

Table 12. Sections assessed and participating faculty.

4.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Midterm Essay	Students write a 3-page textual analysis essay using an assigned text without the use of secondary sources.
2.1	LO1	Final Essay	Students critically analyze an assigned text and write a 5-page paper, using at least 3 secondary sources.
1.2	LO2	Midterm Essay	Students write a 3-page textual analysis essay using an assigned text without the use of secondary sources.
2.2	LO2	Final Essay	Students critically analyze an assigned text and write a 5-page paper, using at least 3 secondary sources.
1.3	LO3	Midterm Essay	Students write a 3-page textual analysis essay using an assigned text without the use of secondary sources.
2.3	LO3	Final Essay	Students critically analyze an assigned text and write a 5-page paper, using at least 3 secondary sources.

Table 13. Artifact for LITR-2031.

4.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	7	7	3	2.76
2.1	LO1	1	6	10	0	2.53
1.2	LO2	0	4	9	4	3.00
2.2	LO2	0	5	8	4	2.94
1.3	LO3	0	5	10	2	2.82
2.3	LO3	2	4	10	1	2.59

Table 14. Results for each rubric Learning Outcome, showing the number of students per score. The AIP for each item/learning outcome is also given.

4.2.3. Data Analysis

- Overall, only 65% of students met the standard of success. Learning Outcome 1 and 3 were below the expected value of 75% (47% and 71% respectively). However, Learning Outcome 2 had a good result of 88%.
- All AIP were above the 2.5 threshold (2.65, 2.97, and 2.71 respectively), with an overall AIP of 2.77.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	2.65	Between Adequate and Effective	8	47%	Below expectations
#Items	6	LO 2	2.97	Between Adequate and Effective	15	88%	Above expectations
#Sections	1	LO 3	2.71	Between Adequate and Effective	12	71%	Below expectations
# Students	17	Overall	2.77	Between Adequate and Effective	11	65%	Below expectations
# Students at or above % of success				11	out of	17	

Table 15. Overall analysis for LITR-2031.

4.2.4. Conclusions

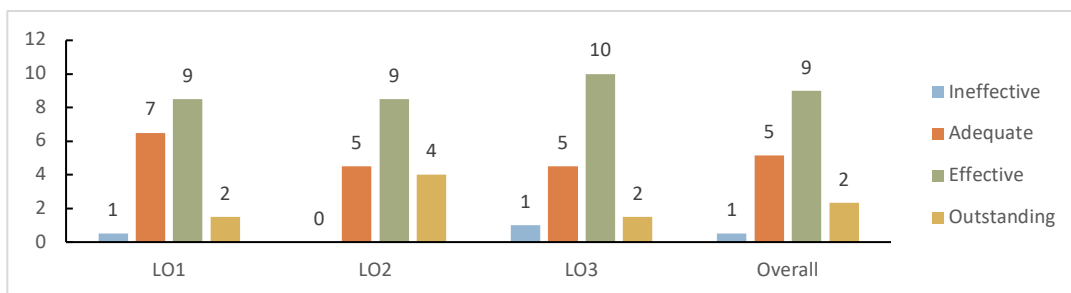


Figure 4. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar (numbers rounded to the closest integer).

- This is a lower-level survey course that allows students to learn about classic world literature from the 17th to 20th centuries. The two artifacts I submitted for assessment include the midterm paper and the final paper, both of which are argumentative essays and are 8 pages in total. I agree with the two reviewers for their opinion of the high degree of critical thinking found in students’ writings. I observed that students are particularly interested in reinterpreting classic texts from a contemporary perspective using their personal experiences. Many of them connect literature to the COVID-19 quarantine and social media. However, some of them are not familiar with the method for comparing two texts from different time periods and cultures. In terms of communication, I suggest students focus more on grammar and concise expression. For example, I found a pattern of randomly capitalizing the first letter of words without specific reason. Some students also have punctuation issues and frequently write run-on sentences. I suggest writing problems like these be solved in composition classes if possible, so it won’t influence how students perform in advanced writing and literature classes.
- When teaching the course again in the future, I will continually encourage students to articulate literature as a contemporary reader who will therefore understand the profound influence of classics. For improvement, I will concentrate more on explaining literary techniques, writing literary analysis, and comparing literature from different cultures. I will help students transfer their creative thoughts into writing and make sure that their ideas are expressed in a way that readers can clearly understand. I will also encourage students to receive feedback at the writing center before submitting the final version of the paper to eliminate spelling errors and punctuation errors.

4.3. ARTS 1000 – Art and Society

Section (s)	# Sections	# Students	Instructor
L03	1	22	Carlo Ricchi
Totals	1	22	

Table 16. Sections assessed and participating faculty.

4.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Discussion A	Students discuss the elements of a production, a reaction post.
2.1	LO1	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”
1.2	LO2	Discussion A	Students discuss the elements of a production, a reaction post.
2.2	LO2	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”
1.3	LO3	Discussion A	Students discuss the elements of a production, a reaction post.
2.3	LO3	Discussion B	In discussion, an argument is made that answers the question, “Is It Art or Something Like It?”

Table 17. Artifact for ARTS-1000.

4.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	5	13	4	0	1.95
2.1	LO1	0	14	8	0	2.36
1.2	LO2	7	9	6	0	1.95
2.2	LO2	0	9	13	0	2.59
1.3	LO3	4	13	5	0	2.05
2.3	LO3	0	18	4	0	2.18

Table 18. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

4.3.3. Data Analysis

Overall, students scored below the AIP threshold of 2.5 with only 3 students (out of 22) scoring above (14% LOP).

- **Foundation:** 23% of students were at or above expectations with an AIP of 2.16.
- **Critical thinking:** 9% of students were at or above expectations with an AIP of 2.27.
- **Communication:** 14% of students were at or above expectations with an AIP of 2.11.

Details		LO	AIP	AIP is:	LOP	LOP	LOP is:
#Artifacts	2	LO 1	2.16	Between Adequate and Effective	5	23%	Below expectations
#Items	6	LO 2	2.27	Between Adequate and Effective	2	9%	Below expectations
#Sections	1	LO 3	2.11	Between Adequate and Effective	3	14%	Below expectations
# Students	22	Overall	2.18	Between Adequate and Effective	3	14%	Below expectations
				# Students at or above % of success	3	out of	22

Table 19. Overall analysis for ARTS-1000.

4.3.4. Conclusions

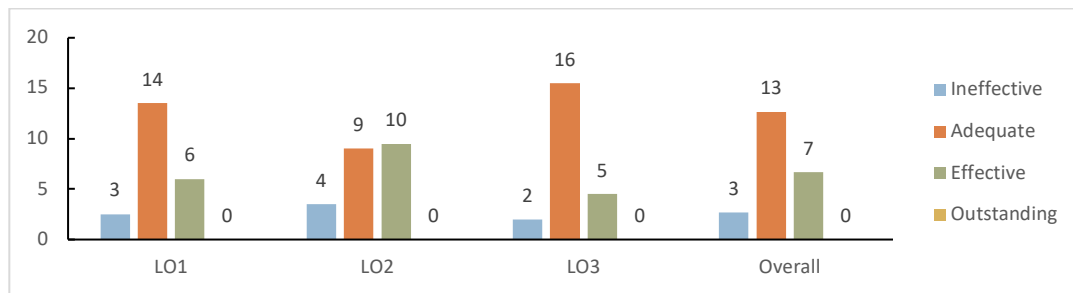


Figure 5. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- Generally, students are accomplishing the learning outcomes for this course. Improvements for Learning Outcome 1 (23%), Learning Outcome 2 (9%), and Learning Outcome 3 (14%) might indicate a need for an additional writing assignment, but the fact that LO1 had the most improvement suggests the course is successful strengthening foundational skills.

5. Mathematics

Courses Assessed: MATH-1040, MATH-2020/2020H, and MATH-2100.

Departments involved: Department of Mathematics

Details			AIP	Score is:	LOP	LOP is:
#Artifacts	29	LO 1	3.48	Between Effective and Outstanding	92%	Above expectations
#Items	60	LO 2	3.24	Between Effective and Outstanding	83%	Above expectations
#Sections	15	LO 3	3.16	Between Effective and Outstanding	80%	Above expectations
# Students	340	Overall	3.29	Between Effective and Outstanding	79%	Above expectations
		# Students at or above % of success	267	out of	340	

Table 20. Overall analysis for the Mathematics domain.

- Table 20 contains a summary of the *Mathematics* domain for Fall 2023. Additionally, Fig. 6 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:
- A total of 340 students were assessed in 14 sections.
- Students were assessed using 29 artifacts, divided into 60 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 92% of students were above expectations, with an AIP score between *effective* and *outstanding* of 3.48.
- **Critical Thinking:** students had an AIP score of 3.24 for this learning outcome, between *effective* and *outstanding*. The LOP was 83%, well above the 75% target.
- **Communication:** the lowest AIP score was 3.16, with a LOP of 80%, which still is well above the 75% target.
- Overall, 267 students (79%) exceeded the LOP target with an AIP score of 3.29 points. Faculty members were generally pleased with student performance on this assessment.

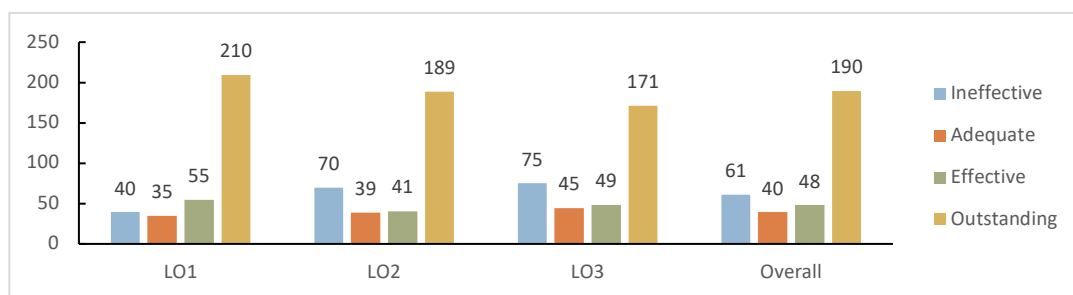


Figure 6. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 21 contains a summary of the *Mathematics* domain from Fall 2014 until our last assessment. During this time, 10 assessments rounds were performed. Additionally, Fig. 2 the percentage difference between the overall averages of these assessment rounds. During Fall 2023 we assessed 339 students, the highest since 2014. The overall AIP of 3.28 is also the highest score so far; an improvement of 13% compared to Fall 2021, and 17% compared to the Fall 2014 baseline (Fig 7).

Assessment Round	Overall Score	#Students
2014 Fall	2.77	107
2015 Winter	2.25	18
2015 Fall	2.49	38
2016 Winter	2.17	35

Assessment Round	Overall Score	#Students
2016 Fall	2.06	37
2017 Winter	2.83	27
2017 Fall	3.27	45
2018 Winter	2.43	34
2021 Fall	2.87	270
2022 Fall	2.94	167
2023 Fall	3.29	340

Table 21. Summary of the results of the Mathematics domain from the Fall 2014 until Fall 2023.

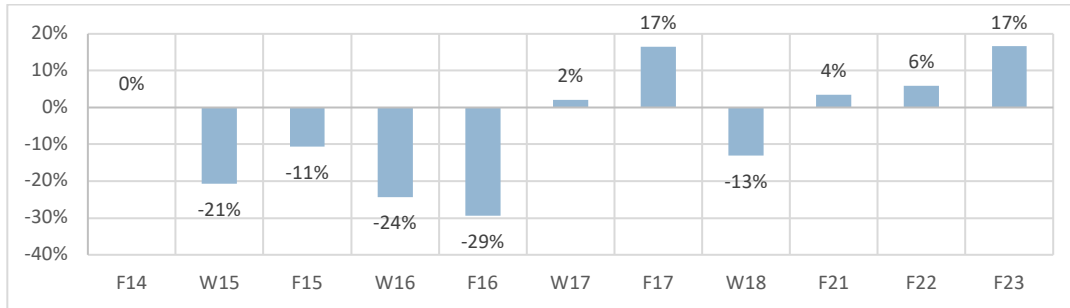


Figure 7. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

5.1. MATH 1040 – Algebra for College Students

Section (s)	# Sections	# Students	Instructor
D02, D06	2	38	Isabelle Kumar
D12, 23	2	47	Mario Nunez
E02	1	25	Ozkan Keskinaya
L06, L07	2	52	Julienne Kabre
L13	1	26	Abushieba Ibrahim
Totals	8	188	

Table 22. Sections assessed and participating faculty.

5.1.1. Artifacts

Artifact	Learning Outcome	Assessment Type/ Comment			
1.1	LO1	Short Answer	solving equations with roots	Test Chapter 6	Solve radical equations with one radical term.
1.2	LO1	Short Answer	solving log/exp equations	Test Chapter 6	Add and subtract radicals, then simplify
1.3	LO2	Short Answer	finding LCM	Test Chapter 7	Determine the nature of the solutions of a quadratic equation.
1.4	LO2	Short Answer	applying properties of logs	Test Chapter 7	Find the vertex, line of symmetry, the maximum or minimum value, and then graph the function.
1.5	LO3	Short Answer	word problem speed, time, etc..	Final Exam #5	Word Problems with quadratic equations
1.6	LO3	Short Answer	word problem min/max.	Final Exam #7	Word problems with growth and decay questions

Table 23. Artifact for MATH-1040.

5.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	15	8	4	80	3
1.2	LO1	26	5	12	64	3

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.3	LO2	26	13	10	58	3
1.4	LO2	23	18	15	51	3
1.5	LO3	44	13	20	30	2
1.6	LO3	40	11	16	40	3

Table 24. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

5.1.3. Data Analysis

According to faculty:

- The data show that the maximum number of students, 66%, have achieved learning proficiency between Adequate and Effective. On average students have achieved an Average Individual Proficiency of 2.72, meeting the standard of success.
- Assessment results tend to have dispersed data with outliers at levels 1 and 4. In addition, there is a significant concentration at 3 and weak at 2. As the course content advances, there is an inherent level of complexity and greater topics being studied. As a result, Foundation, Critical Thinking and Communication appear to display a slight score decrease when same Learning Areas are assessed at the end of semester.
- For the questions that were under foundations, the success rate was almost 96%. One of the critical thinking questions, the success rate was 84%. However, for the questions involving word problems, unfortunately the success rate dropped to 60%, 20% of the students didn't even attempt due to fear of word problems even though there were multiple examples that were shown in lectures.
- In general, the outcomes of this course appear to be below expectations. It is essential to acknowledge that some sections are conducted entirely online, and it seems that overall, students may not be investing sufficient effort in their studies. This dynamic, influenced by the virtual learning environment, warrants consideration in evaluating the course results.

Details		LO	AIP	AIP is:	LOP	LOP	LOP is:
#Artifacts	18	LO 1	2.96	Between Adequate and Effective	152	81%	Above expectations
#Items	30	LO 2	2.58	Between Adequate and Effective	119	63%	Below expectations
#Sections	8	LO 3	2.62	Between Adequate and Effective	122	65%	Below expectations
# Students	188	Overall	2.72	Between Adequate and Effective	124	66%	Below expectations
# Students at or above % of success					124	out of	188

Table 25. Overall analysis for MATH-1040.

5.1.4. Conclusions

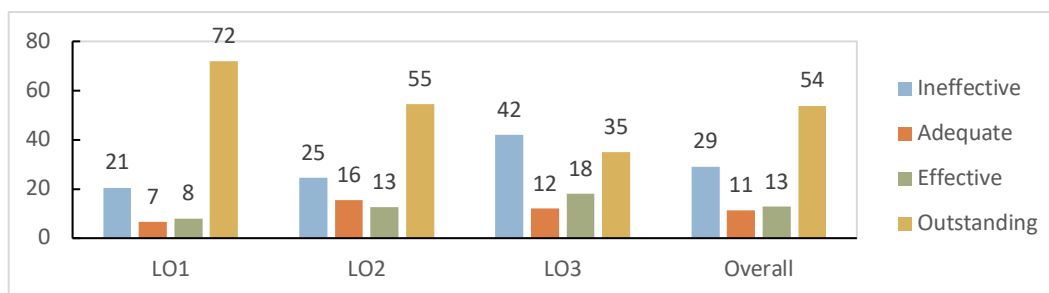


Figure 8. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- Overall, the majority demonstrated achievement of the learning outcomes.

- With online students the Witten assessment was not easy to administer but it was a way for students to show their work and get partial credit.
- Artifacts chosen are adequate to measure overall student academic proficiency. I consider the LO1, LO2 and LO3 average scores, as being measured in this study, as effective in terms of academic success. Artifacts chosen are adequate to measure overall student academic proficiency.
- Overall, students do not want to analyze much and want to get to the answer with the minimum amount of work needed. To the point that they are willing to give up the points for the questions that requires work that is longer than 5 minutes without trying or starting to attempt to solve the given problem.
- To further support students' academic progress, I am contemplating the allocation of one hour per week at the learning center, considering it as an extra credit opportunity. This initiative aims to provide additional resources and encourage further engagement with the course material.

5.2. MATH 2100 Calculus I

Section (s)	# Sections	# Students	Instructor
D04	1	17	Eric Samansky
L03	1	25	Eric Samansky
Totals	2	42	

Table 26. Sections assessed and participating faculty.

5.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Foundation	Finding derivatives of a function
1.2	LO1	Foundation	Integrating a definite integral using a change of variables
1.3	LO2	Critical Thinking	Finding a vertical asymptote and determining the left and right limits
1.4	LO2	Critical Thinking	Finding where a function is increasing and decreasing
1.5	LO3	Communication	A related rates word problem
1.6	LO3	Communication	An applied optimization word problem

Table 27. Artifacts for MATH-2100.

5.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	0	1	41	3.98
1.2	LO1	3	0	5	34	3.67
1.3	LO2	5	2	1	34	3.52
1.4	LO2	3	3	5	31	3.52
1.5	LO3	2	1	12	27	3.52
1.6	LO3	7	0	2	33	3.45

Table 28. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

5.2.3. Data Analysis

Details		LO	AIP	AIP is:	LOP	LOP	LOP is:
#Artifacts	2	LO 1	3.82	Between Effective and Outstanding	41	98%	Above expectations
#Items	6	LO 2	3.52	Between Effective and Outstanding	39	93%	Above expectations
#Sections	2	LO 3	3.49	Between Effective and Outstanding	36	86%	Above expectations
# Students	42	Overall	3.61	Between Effective and Outstanding	40	95%	Above expectations
# Students at or above % of success					40	out of	42

Table 29. Overall analysis for MATH-2100.

According to faculty:

- Students met the standards of success for each outcome. There were no consistent problems with the assessments. Overall, 40 students (95%) performed above expectations with an AIP of 3.61.
- **Foundations:** 98% of the students performed above expectations. It was the highest LOP for this assessment. The AIP was between effective and outstanding (3.82), also the highest one.
- **Critical Thinking:** 93% of the students above expectations. Students performed between effective and outstanding with AIP of 3.52. The results demonstrate that most students can problem-solve fundamental problems.
- **Communication:** 86% of the students performed above expectations with an AIP of 3.49.

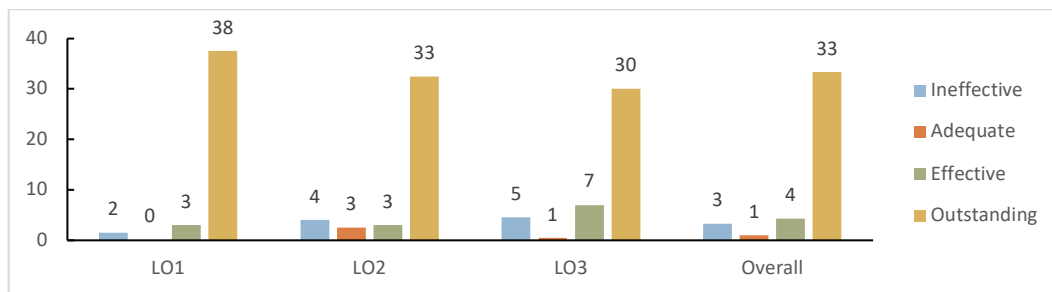


Figure 9. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

5.2.4. Conclusions

- Overall, the results showed that students performed well above the expected target (95%). The overall AIP was 3.61, between effective and outstanding.
- The overall data was encouraging, and there were no big weaknesses in the students' achievement of the learning outcomes.

5.3. MATH 2020/2020H Applied Statistics

Section (s)	# Sections	# Students	Instructor
D01H	1	14	Jason Gershman
D05, D06	3	47	Ginny Tesser
L07	1	25	Jing Chen
L02	1	24	Heather Hanson
Totals	5	110	

Table 30. Sections assessed and participating faculty.

5.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Test 2	Chapter 6 - Normal Distribution - Find the probability - Energy Consumption
1.2	LO1	Final	Chapter 3 - Find the standard deviation for the given sample data
1.3	LO2	Test 2	Chapter 4 - Sample Space -Flip a coin twice
1.4	LO2	Final	Chapter 2 - Frequency Distribution - Find the class midpoint
1.5	LO3	Test 2	Chapter 4 - Probability - Find probability college graduate finds job in their chosen field
1.6	LO3	Final	Chapter 8 - Hypothesis Test - Find the probability of a Type II Error

Table 31. Artifacts for Math-2020.

5.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	4	12	18	75	3.50
1.2	LO1	2	3	14	90	3.76
1.3	LO2	4	5	9	90	3.68
1.4	LO2	8	9	7	83	3.48
1.5	LO3	17	3	8	81	3.40
1.6	LO3	20	8	22	59	3.10

Table 32. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

5.3.3. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	9	LO 1	3.67	Between Effective and Outstanding	105	97%	Above expectations
#Items	24	LO 2	3.62	Between Effective and Outstanding	101	94%	Above expectations
#Sections	5	LO 3	3.36	Between Effective and Outstanding	96	89%	Above expectations
# Students	110	Overall	3.55	Between Effective and Outstanding	100	94%	Above expectations
# Students at or above % of success					103	out of	110

Table 33. Overall analysis for MATH-2020.

According to faculty:

- Students performed well on all tasks. Based on the data collected, the students are achieving all the learning outcomes for MATH2020 - Applied Statistics.
- The AIP for each learning outcome was between 3.2 and 3.7. Therefore, the average student's performance was between Effective and Outstanding. Also, The LOP for all the learning outcomes was greater than 85%, which is far greater than the target expectation of success of 75%, so the standard of success was met for each outcome.

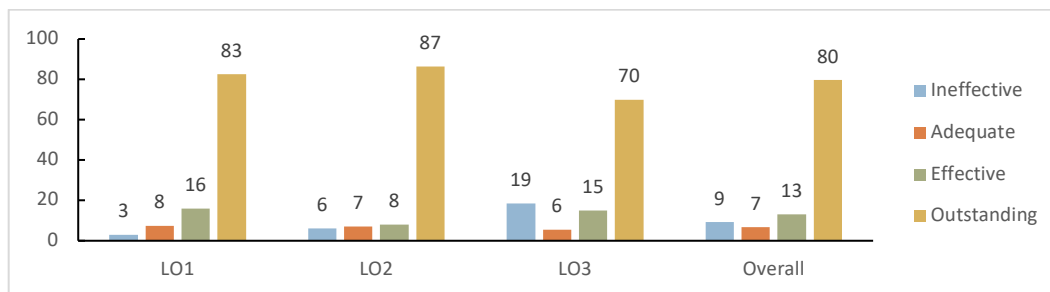


Figure 10. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

5.3.4. Conclusions

- LO1 was successfully achieved based on the data. Most of students were able to identify and explain concepts related to random variables and probability distributions.
- LO2 was successfully achieved based on the data. Most of students were able to access the questions and analyze the given data.
- LO2 and LO3 were achieved, but less successfully than LO1. Confidence interval and hypothesis testing as a comprehensive topic, is more challenging for students.

6. Science

Courses Assessed: BIOL-1500, CHEM-1300, and PHYS-2350.

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

Details		LO	AIP	Score is:	LOP	LOP is:
# Artifacts	9	LO 1	3.60	Between Effective and Outstanding	96%	Above expectations
# Items	20	LO 2	3.38	Between Effective and Outstanding	88%	Above expectations
# Sections	13	LO 3	3.14	Between Effective and Outstanding	86%	Above expectations
# Students	222	Overall	3.37	Between Effective and Outstanding	94%	Above expectations
		# Students at or above % of success	209	out of	222	

Table 34. Overall analysis for the Science domain.

Table 34 contains a summary of the *Science* domain for Fall 2023. Additionally, Fig. 11 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:

- A total of 222 students were assessed in 13 sections spread through 2 departments.
- Students were assessed using 9 artifacts, divided into 20 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 96% of students were between *effective* and *outstanding* with an AIP score of 3.60.
- **Critical Thinking:** Students had an AIP score of 3.38. The LOP success was 88%, between *effective* and *outstanding*.
- **Communication:** had the lowest AIP score was 3.14, with a LOP of 86%, which still is well above of the 75% target.
- Overall, 209 students (94%) exceeded the LOP target with an AIP score of 3.37 points. Faculty members were generally pleased with student performance on this assessment. However, the Communication LO needs improvement.

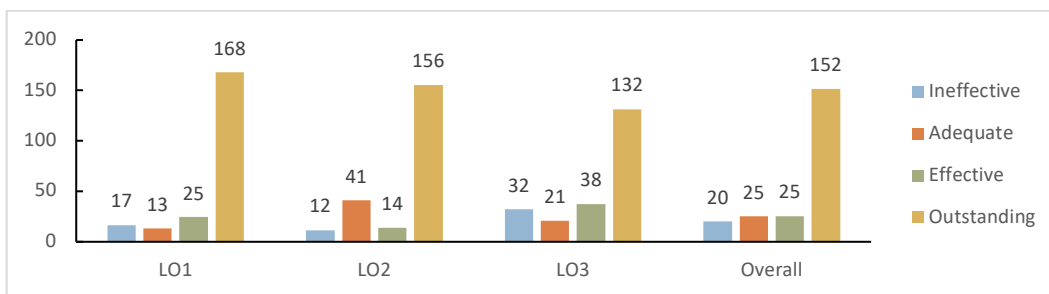


Figure 11. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 35 contains a summary of the *Science* domain from Fall 2014 until our last assessment. During this time, 11 assessments rounds were performed. Additionally, Fig. 12 the percentage difference between the overall averages of these assessment rounds. During Fall 2023 we assessed 222 students, the second highest since 2014. The overall AIP of 3.37 is also the highest score so far; an improvement of 2% compared to Fall 2021, and 7% compared to the Fall 2014 baseline (Fig 2).

Assessment Round	Overall Score	#Students
2014 Fall	3.13	94
2015 Winter	3.02	48
2015 Fall	3.21	111
2016 Winter	3.03	67

Assessment Round	Overall Score	#Students
2016 Fall	3.18	89
2017 Winter	3.17	73
2017 Fall	2.95	62
2018 Winter	2.56	78
2021 Fall	3.28	293
2022 Fall	3.45	195
2023 Fall	3.37	222

Table 35. Summary of the results of the Science domain from the Fall 2014 until Fall 2022.

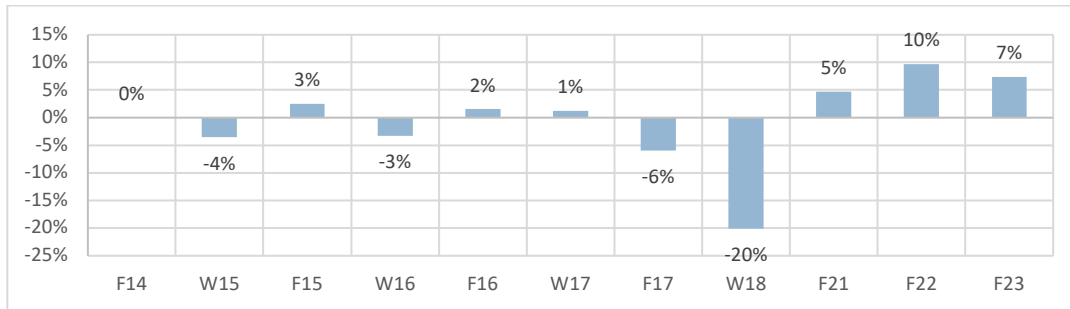


Figure 12. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

6.1. BIOL 1500 Biology I with Lab

Section (s)	# Sections	# Students	Instructor
D04, D05, D06	3	57	Katie Crump
E01, E02, E03	3	55	Adriana Alegre
Totals	6	112	

Table 36. Sections assessed and participating faculty.

6.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Multiple Choice	Question 30
1.2	LO1	Multiple Choice	Question 31
1.3	LO2	Multiple Choice	Question 10
1.4	LO2	Multiple Choice	Question 11
1.5	LO3	Multiple Choice	Question 41
2.1	LO3	Lab Report	lab Report

Table 37. Artifacts for BIOL-1500. The Final exam assessed learning outcomes 1, 2, and 3 using 5 items, while a lab report was used to assess the Communication LO using 1 item.

6.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	12	7	2	91	3.54
1.2	LO1	3	10	5	94	3.70
1.3	LO2	3	10	9	90	3.66
1.4	LO2	5	5	9	93	3.70
1.5	LO3	13	2	10	87	3.53
2.1	LO3	7	7	14	84	3.56

Table 38. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

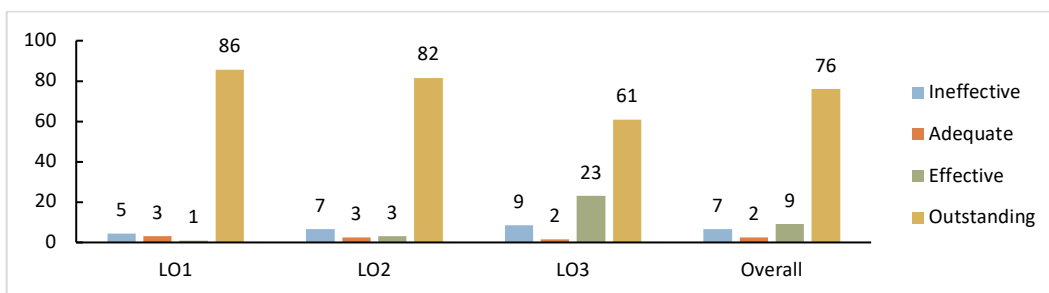
6.1.3. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	4	LO 1	3.62	Between Effective and Outstanding	109	97%	Above expectations
#Items	7	LO 2	3.68	Between Effective and Outstanding	110	98%	Above expectations
#Sections	6	LO 3	3.54	Between Effective and Outstanding	100	89%	Above expectations
# Students	112	Overall	3.61	Between Effective and Outstanding	107	96%	Above expectations
# Students at or above % of success					107	out of	112

Table 39. Overall analysis for BIOL-1500.

According to faculty:

- For LO1 (Foundations), 97% of the students performed effective and outstanding representing that the vast majority of the class understands basic cell biology terminology. For LO2 (Critical Thinking), 98% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. For LO3 (Communication), while students didn't perform as high as LO1 and LO2 the majority of the class still performed well and understand biological problems and communication in today's society.
- Regarding the data all the Categories shown results below expectations. The class has demonstrated an adequate and effective results per Learning outcomes, but not outstanding results.



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

6.1.4. Conclusions

According to faculty:

- Overall, the data was outstanding with the majority of the class knowing basic cell biology concepts, critical thinking in cell biology, and science communication. The students exhibit strengths in foundation and critical thinking. However, there can be improvement in science communication.
- LO1 and LO3 would results in areas on possible improvements in the planning for future assessments. Communication results in one of the areas of strengths in students' achievement of the Learning outcomes.

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

Section (s)	# Sections	# Students	Instructor
E03, E04, E05	3	39	Graeme Gardner
D05, D06, D07	3	37	Maria Ballester
Totals	6	76	

Table 40. Sections assessed and participating faculty.

6.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	ACS Final	Questions: 10 (gray exam) and 11 (yellow exam)
1.2	LO1	ACS Final	Questions: 28 (gray exam) and 33 (yellow exam)
1.3	LO2	ACS Final	Questions: 22 (gray exam) and 19 (yellow exam)
1.4	LO2	ACS Final	Questions: 35 (gray exam) and 36 (yellow exam)
1.5	LO3	ACS Final	Questions: 64 (gray exam) and 44 (yellow exam)
2.1	LO3	Lab Practical	

Table 41. Artifacts for Chem-1300. The Final exam was used to assess the three learning outcomes using 5 items. Additionally, a second artifact (1 items) was used to assess learning outcome 3 (Communication).

6.2.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	2	8	34	32	3.26
1.2	LO1	15	1	2	58	3.36
1.3	LO2	7	26	4	39	2.99
1.4	LO2	6	27	2	41	3.03
1.5	LO3	16	4	20	36	3.00
2.1	LO3	14	26	19	17	2.51

Table 42. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

6.2.3. Data Analysis

- Students did generally well on the Foundation and Critical Thinking learning outcomes, however there is noticeable room for improvement in interpreting atomic properties and chemical reactions (item 1.3).
- Communication LO also 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. Even if the score for item 2.1 was lower than expected, the LOP of 80% was above the LOP target.
- Foundation and Critical Thinking had a LOP above the goal of 75%. Foundation: 91% of students (69) were between *effective* and *outstanding* while in Critical Thinking the percentage was 75% (57 students).
- Overall, students averaged an AIP score of 3.02, with 69 of them (91%) at or above the 2.5 points threshold.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	4	LO 1	3.31	Between Effective and Outstanding	69	91%	Above expectations
#Items	7	LO 2	3.01	Between Effective and Outstanding	57	75%	As expected.
#Sections	6	LO 3	2.76	Between Adequate and Effective	61	80%	Above expectations
# Students	76	Overall	3.02	Between Effective and Outstanding	69	91%	Above expectations
# Students at or above % of success					69	out of	76

Table 43. Overall analysis for CHEM-1300.

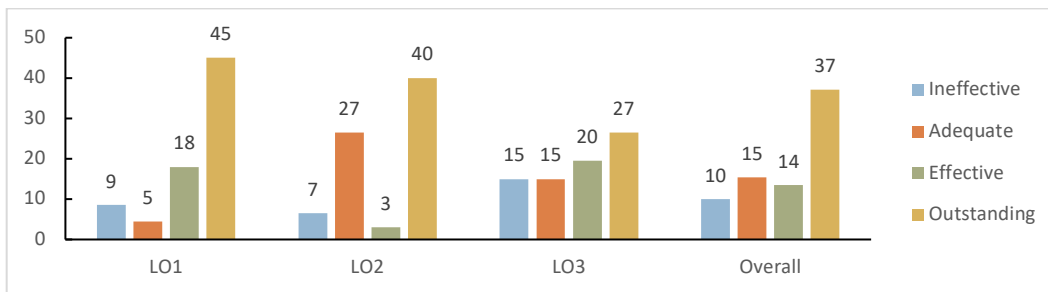


Figure 14. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

6.2.4. Conclusions

- Students did generally well within the quantitative aspects of the assessment, but there needs to be more emphasis on the conceptual aspects (Fig. 5).
- Communication LO, 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. However, it has a 9% increase from the previous assessment. This can be a consequence of the Writing for Chemistry pilot program implemented during since Fall 2023.

6.3. PHYS 2350 General PHYSICS I with Lab

Section (s)	# Sections	# Students	Instructor
D01, D02	1	34	Victor Castro Junca
Totals	1	34	

Table 44. Sections assessed and participating faculty.

6.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Final Exam	Question #2
1.2	LO1	Final Exam	Question #13
1.3	LO2	Final Exam	Question #6
1.4	LO2	Final Exam	Question #9
1.5	LO3	Final Exam	Question #12
1.6	LO3	Final Exam	Question #36

Table 45. Artifacts for PHYS-2350. The Final exam was used to assess the three learning outcomes using 6 items.

6.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	0	6	28	4
1.2	LO1	1	0	0	33	4
1.3	LO2	0	7	3	24	4
1.4	LO2	2	7	1	24	3
1.5	LO3	11	3	4	16	3
1.6	LO3	3	0	8	23	4

Table 46. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

6.3.3. Data Analysis

- **Foundations:** 100% of the students performed between effective and outstanding, representing that the vast majority of the class understands basic cell biology terminology. The results demonstrate that most students within the sample understand basic cell biology terminology.
- **Critical Thinking:** 91% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. The results demonstrate that most students can problem-solve fundamental biological problems.
- **Communication:** while students didn't perform as high as LO1 and LO2 the majority of the class still performed very well (88%) and understand biological problems and communication in today's society.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	1	LO 1	3.87	Between Effective and Outstanding	34	100%	Above expectations
#Items	6	LO 2	3.44	Between Effective and Outstanding	31	91%	Above expectations
#Sections	1	LO 3	3.12	Between Effective and Outstanding	30	88%	Above expectations
# Students	34	Overall	3.48	Between Effective and Outstanding	33	97%	Above expectations
# Students at or above % of success					33	out of	34

Table 47. Overall analysis for PHYS-2350.

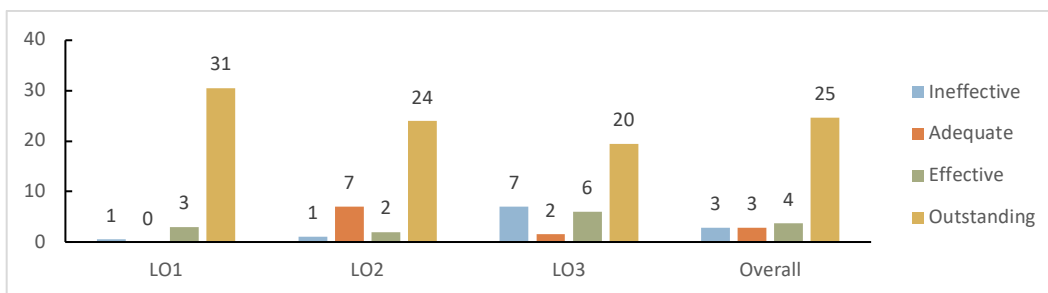


Figure 15. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

6.3.4. Conclusions

- Students did generally well within the quantitative aspects of the assessment, but there needs to be more emphasis on the conceptual aspects (Fig. 5).
- Communication LO, 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.

7. Social and Behavioral Sciences

Courses Assessed: PSYC-1020, POLS-1010, and ECN-2025

Departments involved: Department Psychology and Neuroscience, Department of Humanities and Politics, and the Department of Finance and Economics.

Details		LO	AIP	Score is:	LOP	LOP is:
# Artifacts	11	LO 1	3.33	Between Effective and Outstanding	93%	Above expectations
# Items	18	LO 2	3.47	Between Effective and Outstanding	93%	Above expectations
# Sections	11	LO 3	3.54	Between Effective and Outstanding	93%	Above expectations
# Students	291	Overall	3.45	Between Effective and Outstanding	98%	Above expectations
# Students at or above % of success					284	out of 291

Table 48. Overall analysis for the Science domain.

Table 48 contains a summary of the *Social and Behavioral Sciences* domain for Fall 2022 and Winter 2023. Additionally, Fig. 16 shows how students overwhelmingly scored at the outstanding level. In this assessment round:

- A total of 291 students were assessed in 11 sections spread through 3 departments.
- Students were assessed using 11 artifacts, divided into 18 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 93% of students were above of the 75% target. The AIP was between *adequate* and *effective* with a score of 3.33.
- **Critical Thinking:** the AIP score was 3.47 between *effective* and *outstanding*. The LOP was 93%, well above of the 75% target.
- **Communication:** had the highest AIP score of 3.54 with a LOP of 93%, also well above of the 75% target.
- Overall, 284 students (98%) exceeded the LOP target with an AIP score of 3.45 points. These numbers show a substantial improvement over last year’s assessment. Faculty members were pleased with student performance on this assessment.

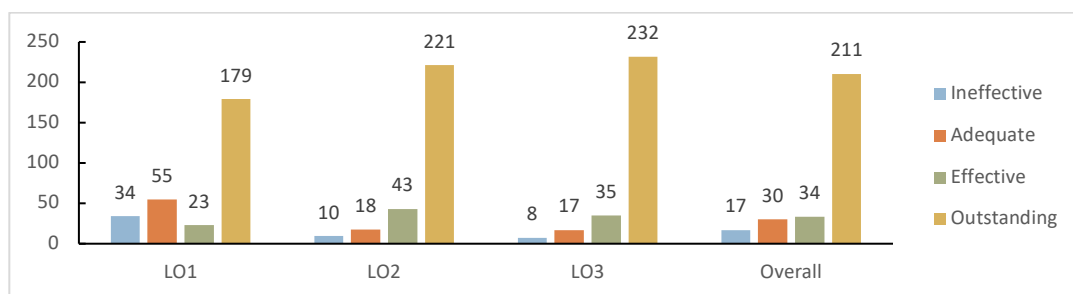


Figure 16. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 49 contains a summary of the *Social and Behavioral Sciences* domain from Fall 2014 until our last assessment. During this time, 9 assessments rounds were performed. Additionally, Fig. 17 shows the percentage difference between the overall averages of these assessment rounds. During Fall 2023 – Winter 2024 we assessed 291 students, the highest since 2014. The overall AIP of 3.45 is the highest score so far; an improvement of 2% compared to Fall 2021, and 13% compared to the Fall 2014 baseline.

Assessment Round	Overall Score	#Students
2014 Fall	2.90	101
2015 Winter	2.60	41
2015 Fall	2.70	31
2017 Winter	2.60	59
2017 Fall	2.90	48
2018 Winter	3.20	59
2021 Fall	3.23	161
2023 Winter - 2022 Fall	3.27	244
2024 Winter - 2023 Fall	3.45	291

Table 49. Summary of the results of the Science domain from the Fall 2014 until Winter 2023.

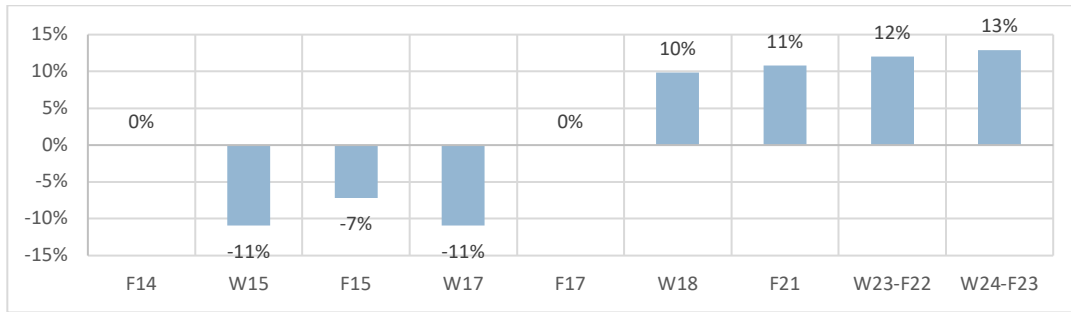


Figure 17. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014.

7.1. PSYC 1020/1020H Introduction to Psychology/Honors

Section (s)	# Sections	# Students	Instructor
D01H	1	14	Leanne Boucher Gill
D04, D07	2	74	Timothy Razza
D11, D18	2	55	Aya Shigeto
E01, D16, D21	3	75	Leticia Lopez
Totals	8	218	

Table 50. Sections assessed and participating faculty.

7.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
1.2	LO1	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
1.3	LO2	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
1.4	LO2	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
1.5	LO3	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
1.6	LO3	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.

Table 51. Artifact for PSYC-1020.

7.1.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	44	92	2	80	2.54
1.2	LO1	19	10	18	171	3.56
1.3	LO2	7	12	48	151	3.57
1.4	LO2	11	8	12	187	3.72
1.5	LO3	9	12	15	182	3.70
1.6	LO3	5	15	30	168	3.66

Table 52. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.1.3. Data Analysis

- All learning outcomes were above expectation, demonstrating knowledge learned. Students performed very well on learning outcomes LO2 and LO3. It appears the students struggled with Artifact 1.1 (LO1) but performed very well on Artifact 1.2 (LO1). Across the board, students did quite well overall with averages ranging around 3.5 for LO2 and LO3, and approximately 3.0 for LO1.
- **Foundation:** 88% of students (192) answered the questions at or above expectations. Students have clearly demonstrated the understandings of basic concepts in psychology.
- **Critical thinking:** students have demonstrated an accurate analysis of problems, and evaluation of evidence to reach to a conclusion. A number of 213 students (98%) have been at or above expectations.
- **Communication:** the data collected has demonstrated that students do better at communicating ideas. 98% of students (213) were able to express their ideas in different forms and applied their knowledge. They have demonstrated results between effective and outstanding.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	8	LO 1	3.05	Between Effective and Outstanding	192	88%	Above expectations
#Items	6	LO 2	3.65	Between Effective and Outstanding	213	98%	Above expectations
#Sections	8	LO 3	3.68	Between Effective and Outstanding	213	98%	Above expectations
# Students	218	Overall	3.46	Between Effective and Outstanding	214	98%	Above expectations
# Students at or above % of success					214	out of	218

Table 53. Overall analysis for PSYC-1020.

7.1.4. Conclusions

- Students did the worse overall on a question that asked about the concept of negative reinforcement (less than 50% answered correctly). This is a question about applying the concepts of reinforcement within the topic of operant conditioning. This is a notoriously difficult topic for many students to understand. Perhaps another question about operant conditioning can be used that can better assess student's general knowledge about operant conditioning, without asking such a specific question. On the other hand, a high percentage of students got the question about research methods correct.
- Based on the data, all the learning objectives were equally challenging, and students demonstrated a fairly high level of comprehension overall. Data is consistent with the overall learning outcomes of the course. The main area of weakness was application of the principles of operant conditioning. All other areas assessed were either "effective" or "outstanding".

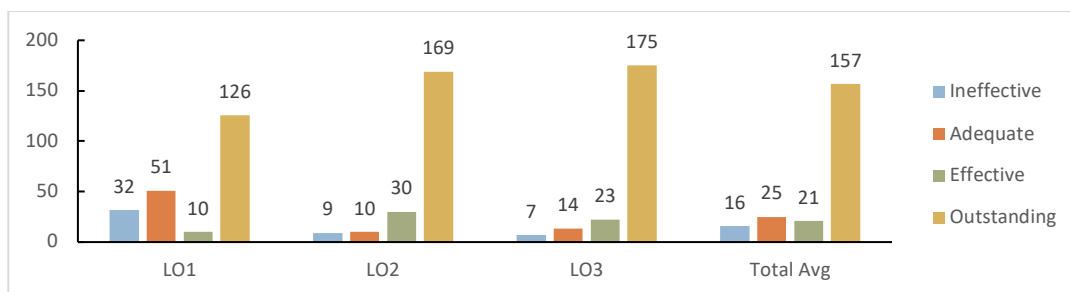


Figure 18. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

7.2. POLS 1010 American Government and Politics

Section (s)	# Sections	# Students	Instructor
D02	1	17	Charles Zelden
Totals	1	17	

Table 54. Sections assessed and participating faculty.

7.2.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Paper 1	Assigned papers were based on readings integrated into course lectures.
1.2	LO1	Paper 2	Assigned papers were based on readings integrated into course lectures.
1.3	LO2	Paper 1	Assigned papers were based on readings integrated into course lectures.
1.4	LO2	Paper 2	Assigned papers were based on readings integrated into course lectures.
1.5	LO3	Paper 1	Assigned papers were based on readings integrated into course lectures.
1.6	LO3	Paper 2	Assigned papers were based on readings integrated into course lectures.

Table 55. Artifact for POLS-1010.

7.2.2. Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	LO1	0	1	13	3	3.12
1.2	LO1	0	3	6	8	3.29
1.3	LO2	0	1	11	5	3.24
1.4	LO2	0	6	9	2	2.76
1.5	LO3	0	2	12	3	3.06
1.6	LO3	1	3	9	4	2.94

Table 56. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.2.3. Data Analysis

The assessment shows that basic learning took place via these assignments. Most students fell within the effective range. The students read and understood the material assigned and adequately communicated this understanding via a written assignment.

- **Foundation:** 94% of students (16) answered the questions above expectations.
- **Critical thinking:** A number of 14 students (82%) have above expectations. For critical thinking, students were challenged to use the methodologies in our material. They did this effectively in their papers.
- **Communication:** the data collected seems to show that students effectively communicated ideas. 82% of students (14) were able to express their ideas in different forms and applied their knowledge.

Details	LO	AIP	Score is:	LOP	LOP	LOP is:	
#Artifacts	2	LO 1	3.21	Between Effective and Outstanding	16	94%	Above expectations
#Items	6	LO 2	3.00	Effective	14	82%	Above expectations
#Sections	1	LO 3	3.00	Effective	14	82%	Above expectations
# Students	17	Overall	3.07	Between Effective and Outstanding	15	88%	Above expectations
# Students at or above % of success				15	out of	17	

Table 57. Overall analysis for POLS-1010.

7.2.4. Conclusions

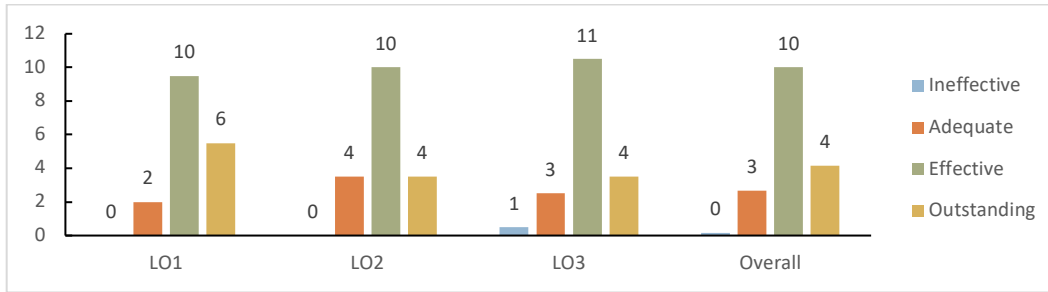


Figure 19. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- The assessment was based on writing assignments which were themselves based on reading assignments. The assessment results shows that adequate learning took place, but only adequate. More work will need to be done to prep the students to work with the material assigned. This should result in better comprehension by the students. Further effort can also be placed on writing skills in earlier assignments to prepare the students for such assessment.

7.3. ECN 2025 Principles of Macroeconomics

Section (s)	# Sections	# Students	Instructor
D01, D02	2	56	David Cho
Totals	2	56	

Table 58. Sections assessed and participating faculty.

7.3.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	MCQ	Real GDP differs from nominal GDP because ____
1.2	LO1	MCQ	Which of the following best explains the causes of inflation in an economy?
1.3	LO2	MCQ	Over time, the equilibrium price of a laptop has fallen, while the equilibrium quantity purchased has increased. Based on this we can conclude that
1.4	LO2	MCQ	Which of the following best explains the causes of inflation in an economy?
1.5	LO3	MCQ	Which of the following best describes the short run impact of an increase in the government's spending on the economy?
1.6	LO3	MCQ	Which of the following best describes the impact of an increase in the interest rate on the economy?

Table 59. Artifact for ECN-2025.

7.3.2. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	4	2	4	46	3.64
1.2	LO1	1	2	3	50	3.82
1.3	LO2	0	6	3	47	3.73
1.4	LO2	1	2	3	50	3.82
1.5	LO3	0	0	2	54	3.96
1.6	LO3	0	2	2	52	3.89

Table 60. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

7.3.3. Data Analysis

- Average AIP scores for LO1, LO2 and LO3 were 3.73, 3.78 and 3.93, respectively. All were between effective and outstanding.
- **Foundation:** 98% of students (55) answered the questions at or above expectations. Students have clearly demonstrated the understandings of basic concepts.
- **Critical thinking:** students have demonstrated an accurate analysis of problems, and evaluation of evidence to reach to a conclusion. A number of 55 students (98%) have been at or above expectations.
- **Communication:** the data collected has demonstrated that students do better at communicating ideas. 100% of students (55) were able to express their ideas in different forms and applied their knowledge.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	1	LO 1	3.73	Between Effective and Outstanding	55	98%	Above expectations
#Items	6	LO 2	3.78	Between Effective and Outstanding	55	98%	Above expectations
#Sections	2	LO 3	3.93	Between Effective and Outstanding	56	100%	Above expectations
# Students	56	Overall	3.81	Between Effective and Outstanding	55	98%	Above expectations
				# Students at or above % of success	55	out of	56

Table 61. Overall analysis for ECN-2025.

7.3.4. Conclusions

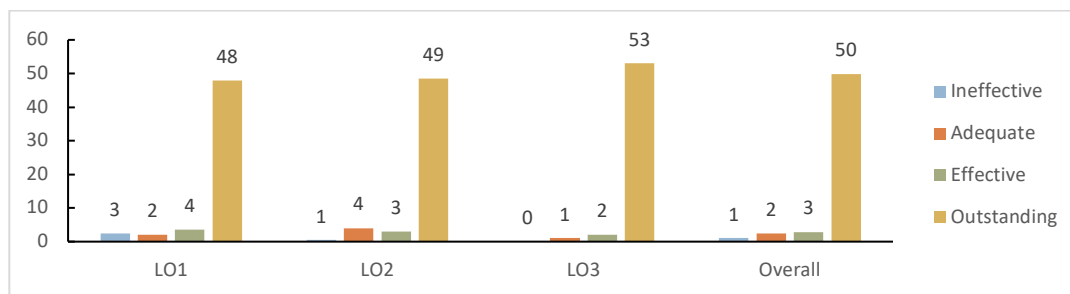


Figure 20. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- Overall AIP score was 3.81, and overall LOP was 98%, above expectations. 55 out of 56 students were above the percentage of success.
- The data collected in the course ECN-2025 has shown that the learning outcomes has been reached on the 3 learning outcomes. Students were able to explain terminology, critically evaluate problems and applied their knowledge to solve and provide solutions, as well as to be able to communicate knowledge and ideas in an appropriate scientific way.

8. Written Composition

Courses Assessed: COMP-2000 and COMP-2000H.

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

Details		LO	AIP	Score is:	LOP	LOP is:
# Artifacts	10	LO 1	2.75	Between Adequate and Effective	83%	Above expectations
# Items	12	LO 2	2.58	Between Adequate and Effective	58%	Below expectations
# Sections	5	LO 3	2.85	Between Adequate and Effective	79%	Above expectations
# Students	24	Overall	2.73	Between Adequate and Effective	75%	As expected.
		# Students at or above % of success		18	out of	24

Table 62. Overall analysis for the Written Composition domain.

Table 62 contains a summary of the *Written Composition* domain for Winter 2023. Additionally, Fig. 21 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:

- A total of 24 students were assessed in 5 sections. Students were assessed using 10 artifacts, divided into 12 items using essays selected/created by faculty as part of required course assignments.
- **Foundation:** 31% of students (7) scored above expectations. Students achieved an AIP score of 2.36, between *ineffective* and *adequate*.
- **Critical Thinking:** Students had an AIP score of 2.70, between adequate and effective. The LOP success was 74%, very close to the expectation value.
- **Communication:** had the highest AIP score was 2.98, between adequate and effective, with a LOP of 87%, which is well above of the 75% target.
- Overall, 15 students (63%) exceeded the LOP target with an AIP score of 2.68 points.

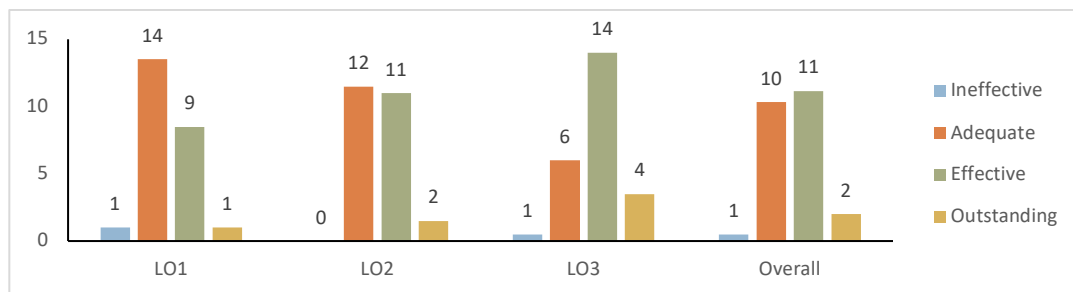


Figure 21. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 63 contains a summary of the *Written Composition* domain from Fall 2014 until our last assessment. During this time, 10 assessments rounds were performed. Additionally, Fig. 22 shows the percentage difference between the overall averages of these assessment rounds. During Winter 2024 we assessed 24 students, obtaining an overall AIP of 2.68, an improvement of 1% compared to Fall 2021, but a drop of 7% compared to Fall 2014.

Assessment Round	Overall Score	#Students
2014 Fall	2.87	25
2015 Winter	3.16	28
2015 Fall	3.30	12
2016 Fall	2.48	42
2017 Winter	2.71	37
2017 Fall	2.85	32
2018 Winter	2.88	72
2021 Fall	2.64	23

Assessment Round	Overall Score	#Students
2023 Winter	2.81	28
2024 Winter	2.73	24

Table 63. Summary of the results of the Science domain from the Fall 2014 until Fall 2022.

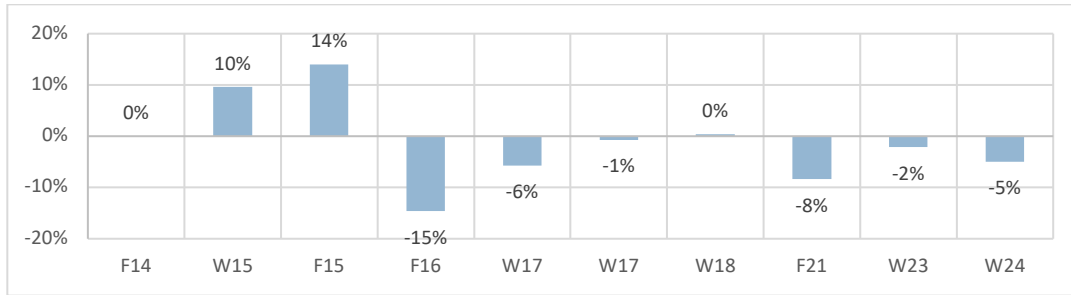


Figure 22. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014

a. COMP 2000– Advanced College Writing

Section (s)	# Sections	# Students	Instructor
L01	1	5	Rachel Panton
E01	1	5	Billy Jones
L03	1	5	Juliette Kitchens
L05	1	4	Shoorangiz Rahimi
Totals	4	19	

Table 64. Sections assessed and participating faculty.

8.1.1. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Essay	Midterm Paper
2.1	LO1	Essay	Final Paper
1.2	LO2	Essay	Midterm Paper
2.2	LO2	Essay	Final Paper
1.3	LO3	Essay	Midterm Paper
2.3	LO3	Essay	Final Paper

Table 65. Artifact for COMP-2000. The Final exam used 6 items to assess the 3 rubric learning outcomes.

8.1.2. Data Presentation

Artifact	Learning Outcome	Score				AIP
		1 Ineffective	2 Adequate	3 Effective	4 Outstanding	
1.1	LO1	2	12	5	0	2.16
2.1	LO1	0	8	9	2	2.68
1.2	LO2	0	14	5	0	2.26
2.2	LO2	0	7	10	2	2.74
1.3	LO3	1	8	10	0	2.47
2.3	LO3	0	4	10	5	3.05

Table 66. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

8.1.3. Data Analysis

- Overall, 10 students (53%) scored above expectations, with an AIP between adequate and effective of 2.56. This is well below the learning outcome proficiency threshold of 75%.

- The three learning outcomes were below the LOP target, although LO 3 was close with a 74% LOP. Foundation had an AIP score of 2.42, but only 8 students (42%) were above the 75% successful threshold. Similarly, LO 2 had an AIP of 2.50 and an LOP of 47%. LO 3 did much better with an AIP of 2.76 and LOP of 74%, very close to the 75% expected value.

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	8	LO 1	2.42	Between Adequate and Effective	8	42%	Below expectations
#Items	6	LO 2	2.50	Between Adequate and Effective	9	47%	Below expectations
#Sections	4	LO 3	2.76	Between Adequate and Effective	14	74%	Below expectations
# Students	19	Overall	2.56	Between Adequate and Effective	10	53%	Below expectations
# Students at or above % of success					10	out of	19

Table 67. Overall analysis for COMP-2000.

8.1.4. Conclusions

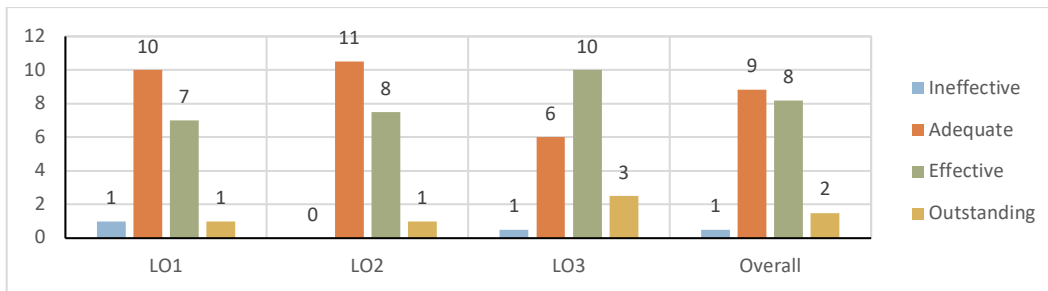


Figure 23. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- Based on the assessment results, Foundation and Critical thinking needs to be improved dramatically. Communication also needs some work but did much better.

b. COMP 2000H– Advanced College Writing Honors

Section (s)	# Sections	# Students	Instructor
D01H	1	5	Star Vanguri
Totals	1	5	

Table 68. Sections assessed and participating faculty.

8.1.5. Artifacts

Artifact	Learning Outcome	Assessment type	Comment
1.1	LO1	Essay	Midterm Paper
2.1	LO1	Essay	Final Paper
1.2	LO2	Essay	Midterm Paper
2.2	LO2	Essay	Final Paper
1.3	LO3	Essay	Midterm Paper
2.3	LO3	Essay	Final Paper

Table 69. Artifacts for COMP-2000H. The Final exam assessed learning outcomes 1, 2, and 3 using 5 items, while a lab report was used to assess the Communication LO using 1 item.

8.1.6. Data Presentation

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.1	LO1	0	5	0	0	2.00
2.1	LO1	0	2	3	0	2.60
1.2	LO2	0	2	3	0	2.60
2.2	LO2	0	0	4	1	3.20

Artifact	Learning Outcome	1 Ineffective	2 Adequate	3 Effective	4 Outstanding	AIP
1.3	LO3	0	0	5	0	3.00
2.3	LO3	0	0	3	2	3.40

Table 70. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/LO is also given.

8.1.7. Data Analysis

Details		LO	AIP	Score is:	LOP	LOP	LOP is:
#Artifacts	2	LO 1	2.30	Between Adequate and Effective	1	20%	Below expectations
#Items	6	LO 2	2.90	Between Adequate and Effective	5	100%	Above expectations
#Sections	1	LO 3	3.20	Between Effective and Outstanding	5	100%	Above expectations
# Students	5	Overall	2.80	Between Adequate and Effective	5	100%	Above expectations
# Students at or above % of success					5	out of	5

Table 71. Overall analysis for COMP-2000H.

- Overall, 5 students (100%) scored above expectations, with an AIP between adequate and effective of 2.80 points. This is well above the learning outcome proficiency threshold of 75%.
- The Foundations LO was well below expectation, with only one student (20%) scoring above 2.5. In the other two learning outcomes all students performed above expectations. Critical Thinking had an AIP of 2.90 with a LOP of 100%, while Communications had an AIP of 3.20 and LOP of 100%.

8.1.8. Conclusions

- Based on the assessment results, Foundations need to be improved dramatically.

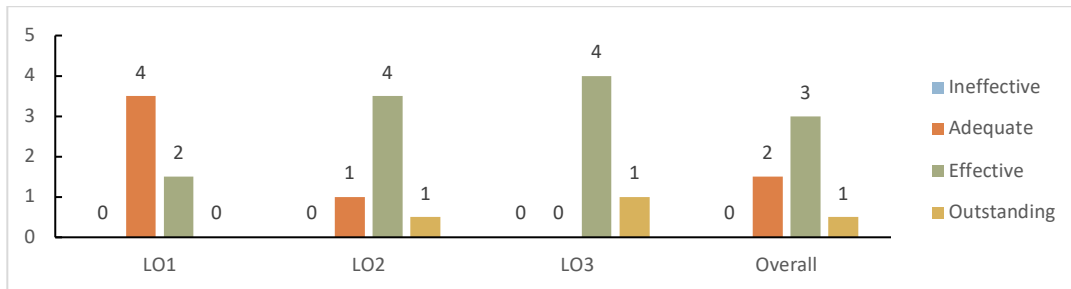


Figure 24. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

9. Learning Outcomes and Assessment Rubrics

The General Education program learning outcomes are based on three (3) pillars (categories), aligned with the mission of NSU and the General Education program: Foundation, Critical Thinking, and Communication. 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.

9.1. Arts and Humanities

9.1.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

9.1.2. Rubric

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.

9.2. Mathematics

9.2.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

9.2.2. Rubric

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.

9.3. Science

9.3.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

9.3.2. Rubric

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.
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.

9.4. Social and Behavioral Sciences

9.4.1. Learning Objectives

Foundation	Critical thinking	Communication
Identify and understand the major concepts and methods to investigate, analyze, or predict human behavior and cognition relevant to the discipline.	Use concepts and evidence within the subject area to explain human behavior and cognition.	Communicate knowledge, thoughts, and reasoning clearly and effectively within the subject area.

9.4.2. Rubric

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.

9.5. Written Composition

9.5.1. Learning Objectives

Foundation	Critical thinking	Communication
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.

9.5.2. Rubric

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 understanding or consideration of audience and contextual awareness.	Language choice, tone, and style indicate an understanding of audience and contextual awareness, although use and structure may be inconsistent.	Language choice, tone, and style indicate a consistent understanding of audience and contextual awareness.	Language choice, tone, and style indicate an advanced understanding of audience and contextual awareness.

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Appendix 5

Fall 2024 - Winter 2025

Assessment Analysis and Report Summary

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General Education Task Force Report

Fall 2024 - Winter 2025 Assessment

Maria Ballester

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Introduction

1. Summary

The General Education Taskforce is responsible for assessing the **General Education learning outcomes** at the **course level**. This goal could only be carried out by the invaluable help made by the participating faculty. The taskforce would like to recognize the effort every single one of them put into this duty. During the Fall 2024 and Winter 2025 semesters, we carried out our **third assessment** round, closing our **three-year cycle**. We measured the performance of students in each of the General Education learning outcomes through a series of preestablished assessment **rubrics**. The assessment rubrics were written for each of the 5 domains and their results were evaluated against two per-established benchmarks: a *Learning Outcome Proficiency (LOP)* target of **75%** and an *Average Individual Proficiency (AIP)* threshold of **2.5** points out of 4. This means that we were expecting at least 75% of our students to have an average individual proficiency of 2.5 points or higher. During this assessment round, participating faculty assessed:

- 849 students.
- 5 domains: Arts and Humanities (Winter 2025), Mathematics (Fall 2024), Science (Fall 2024), Social and Behavioral Sciences (Winter 2025), and Written Composition (Winter 2025).
- 14 courses, divided into 42 sections.
- 55 artifacts, divided into 121 items selected/created by faculty of each domain and standardized for each course.

Overall, the *learning outcome proficiency (LOP)* was 92%, with an *average individual proficiency (AIP)* of 3.38 points. Individually, the domains AIP were all at or above 2.5 points, as can see on Table 1. However, Arts and Humanities fared below the expected LOP of 75%. Overall, the LOP of 92% with an AIP of 3.38 indicate that our goals for the Fall 2024 – Winter 2025 assessment year were met.

Domain	Students	LOP	AIP	Courses	Sections	Artifacts	Items
Arts and Humanities	71	66%	2.85	3	3	6	18
Mathematics	265	92%	3.49	3	12	29	54
Sciences	372	96%	3.57	3	18	9	19
Social and Behavioral Sciences	121	95%	3.64	3	5	7	24
Written Composition	20	80%	2.85	2	4	4	6
Overall Results	849	92%	3.28	14	42	55	121

Table 1. Results for the Learning Outcome Proficiency Target and Individual Proficiency Threshold, for all domains.

a. Overall Comparison

In Table 2, we have chosen two reference points to compare previous and current assessments, Fall 2014 and Fall 2021. Fall 2014 is the oldest assessment we have on record while Fall 2021 was the first assessment after a two-year hiatus.

- Compared to Fall 2021, the AIP of all domains show a positive percentage difference. The same can be said when compared to 2014 with the clear exception of Arts and Humanities and Written Composition.
- Overall, students achieved an impressive overall LOP of 92% with an AIP of 3.28. Both of these values show positive improvements (3.3% and 11.3% respectively) compared to the Fall 2021 assessment. In fact, all domains scored well above the preestablished 2.50 points threshold.
- We continue to assess close to 20% of the total amount of undergraduate students (849).

Semester	Art and Humanities	Mathematics	Science	Social and Behavioral Sciences	Written Composition	AIP	LOP	# 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	89%	803
22 Fall - 23 Winter	2.92	2.94	3.45	3.30	2.88	3.10	88%	744
23 Fall - 24 Winter	2.67	3.29	3.37	3.45	2.73	3.10	86%	942
24 Fall - 25 Winter	2.85	3.49	3.57	3.64	2.85	3.28	92%	849
%difference to Fall 21	9.3%	19.2%	8.6%	11.8%	7.7%	11.3%	3.3%	5.6%
%difference to Fall 14	-0.2%	23.0%	13.2%	23.2%	-0.7%	12.3%	–	75.0%

Table 2. Summary of the results of each domain from the Fall 2014 until Winter 2024.

b. Day, Evening, and Online Comparison

Table 3 shows the mean scores differences between daytime, evening, or online courses. Results were obtained by a *Two-Sample t-Test* assuming unequal variances and evaluating the *p*-value ($p \leq 0.05$). Between daytime and evening students, there is no statistically significant difference except in the **Mathematics** domain which shows a significant percent mean difference of 14.6% in favor of daytime students. However, the overall analysis finds a statistical difference of 14.6% in favor of the daytime students. Between daytime and online students there was no statistically significant difference in any domain, but in similar way as the daytime-evening analysis, there is a difference of 3.2% in favor of daytime students. Additionally, we found a statistically significant difference between evening and online students in the **Mathematics** domain, with a percent mean difference of 12.4% in favor online students. Written Composition did not show a statistical difference either, but overall, there was a difference of 11.4% in favor of the online students. As a final note, no analysis was performed on the Social and Behavioral Sciences domain since all students were enrolled in day-time sections.

Domain	Daytime vs Evening				Daytime vs Online				Evening vs Online			
	Daytime	Evening	% Mean difference	Statistical difference	Daytime	Online	% Mean difference	Statistical difference	Evening	Online	% Mean difference	Statistical difference
Arts and Humanities					2.79	2.64	5.3%	No				
Mathematics	3.41	2.94	14.6%	Yes	3.41	3.36	1.3%	No	2.94	3.36	13.3%	Yes
Science					3.42	3.41	0.5%	No				
Social and Behavioral Sciences												
Written Composition	2.20	2.44	10.5%	No	2.20	2.60	16.7%	No	2.44	2.60	6.2%	No
Overall	3.38	2.92	14.6%	Yes	3.38	3.27	3.2%	Yes	2.92	3.27	11.4%	Yes

Table 3. The differences between the means of daytime, evening, or online courses.

2. Procedure

a. Courses Assessed

For this assessment period, the General Education Taskforce selected a set of courses per domain that met our learning outcomes. We also wanted to include 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. The General Education Taskforce suggested to assess a number close to 20% of the course's student population.

Domain	Courses Assessed
Arts and Humanities	ARTS-1000, LITR-2031, and HIST-1050.
Mathematics	MATH-1250, MATH-2100, and MATH-2020/2020H.
Sciences	BIOL-1500, CHEM-1300, and PHYS-2350.
Social and Behavioral Sciences	PSYC-1020/1020H, ECN-2020, and INST-1500.
Written Composition	COMP-2000/2000H.

Table 4. 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 that final exam 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 General Education learning outcomes through a series of assessment rubrics, divided into **measurable objectives**. Courses were allowed to use multiple measures to assess any individual General Education 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 during this assessment process. 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 (AIP) threshold:** 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 (LOP) target:** 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 75% of our students at or above an average individual proficiency of 2.5 points.

Faculty completed a report through a Microsoft Excel file. This file included individual students' scores and various analysis of the data. 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 General Education program assessment, as it will help us improve the process and ensure that our methods are working.

e. General Education Courses Used

Previously, we have made a review of the General Education courses offered in 55 NSU undergraduate programs. The study of each program's four-year plans allowed us to build the table below. Table 5, divided by domain, shows how many programs require a particular domain course. Our selection of courses for this assessment round is highlighted in green. Only ARTS-1000 is not part of this list.

Arts and Humanities		Mathematics		Science		Social and Behavioral Sciences		Written Composition	
HIST 1050	10	MATH 2020	23	BIOL 1500	10	PSYC 1020	13	COMP 2000	22
LITR 2031	3	MATH 2100	10	CHEM 1300	9	ECN 2020	8		
ART 1000	0	MATH 1250	3	PHYS 1020	7	INST 1500	2		

Table 5. The data shown is a subset of the information gathered in all 55 undergraduate programs. The list shows the courses used during this assessment round. The number besides each course shows the number of programs using it.

Assessments Results

1. Arts and Humanities

Courses Assessed: HIST-1050, LITR-2031, and ARTS-1000.

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

Details		AIP	AIP is:	LOP	LOP is:	
Artifacts	6	LO 1	2.86	Between Adequate and Effective	73%	Below expectations
Items	18	LO 2	2.86	Between Adequate and Effective	73%	Below expectations
Sections	3	LO 3	2.85	Between Adequate and Effective	72%	Below expectations
Students	71	Overall	2.85	Between Adequate and Effective	66%	Below expectations
Students at or above % of success		47	out of		71	

Table 6. Overall analysis for the Arts and Humanities domain.

Table 6 contains a summary of the *Arts and Humanities* domain for Winter 2025. Additionally, Fig. 1 shows how students overwhelmingly scored at the adequate or effective levels. In this assessment round:

- A total of 71 students were assessed in 3 sections spread through 2 departments.
- Students were assessed using 6 artifacts, divided into 18 items.
- Multiple choice items and essays were selected/created by faculty as part of required course assignments.
- **Foundation:** 73% of students were at or above expectation, with an AIP score between *adequate* and *effective* of 2.86.
- **Critical Thinking:** had the highest AIP score of 2.86, between *adequate* and *effective*. The LOP was 73%, slightly below the 75% target.
- **Communication:** the AIP score was 2.85 with a LOP of 72%, also slightly below the 75% target.
- Overall, 47 students (66%) exceeded the LOP target with an AIP score of 2.85 points. Faculty members were generally pleased with student performance on this assessment. However, although it is obvious that all learning outcomes need improvement, the numbers showed a significant increase from last year's results.

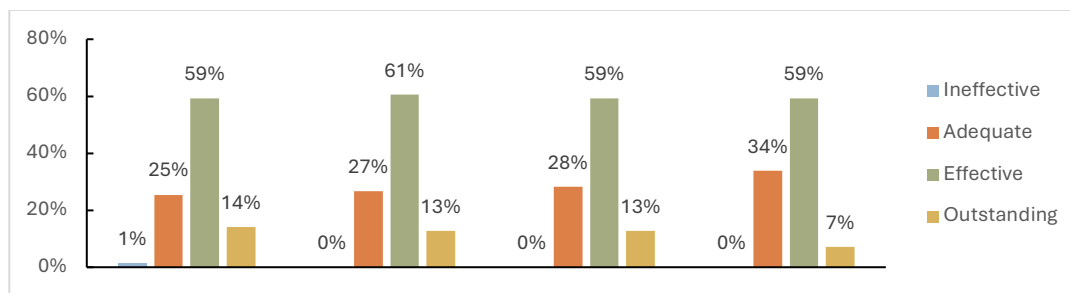


Figure 1. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 7 contains a summary of the *Arts and Humanities* domain from Fall 2014 until our last assessment. During this time, 11 assessments rounds were performed. Additionally, Fig. 2 shows the percentage difference between the overall averages of these assessment rounds. During Winter 2025 we assessed 71 students. The overall AIP of 2.85 is an improvement from last year. Results show a small decrease (-0.2%) compared to Fall 2014, but it also shows an increase (9.3%) compared to the Fall 2021 baseline. Compared to last year's assessment, there is a visible improvement of 6.6%.

Assessment Round	Overall Score	#Students
2014 Fall	2.86	59
2015 Winter	2.89	45
2015 Fall	2.88	87
2016 Fall	2.93	27
2017 Winter	2.70	46
2017 Fall	2.76	33
2018 Winter	2.77	32
2021 Fall	2.61	56
2023 Winter	2.92	71
2024 Winter	2.67	65
2025 Winter	2.85	71

Table 7. Summary of the results of the Arts and Humanities domain from the Fall 2014 until Fall 2024.

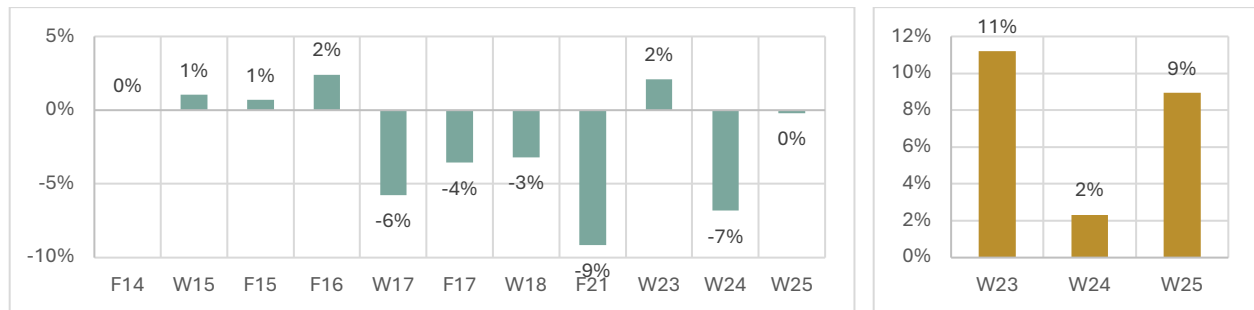


Figure 2. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014 (left) and Fall 2021 (right).

a. HIST 1050 – The United States: From Settlement to Superpower

Section (s)	# Sections	# Students	Instructor
D01	1	24	Teng Li
Totals	1	24	

Table 8. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	An in-class essay question, administered at the mid-term time.	Students type/write for 50 minutes to compose an essay-question answer. Students can consult the textbook but cannot do any internet search (typing is based on Lockdown Browser; every student brings a physical copy of the textbook). The essay question is on how to read a chapter selected by the instructor, what are the key content of the chapter, and how the key content form an argument.
1.2	Foundation	An in-class essay question, administered at the end of the semester.	Very similar to artifact 1. In addition to artifact 2, students need to incorporate a newspaper op-ed, which is on historical methodology of treating primary sources seriously and interpreting them with critical thinking skills and the class had read before, when composing the essay-question answer.
1.3	Critical Thinking	An in-class essay question, administered at the mid-term time.	Students type/write for 50 minutes to compose an essay-question answer. Students can consult the textbook but cannot do any internet search (typing is based on Lockdown Browser; every student brings a physical copy of the textbook). The essay question is on how to read a chapter selected by the instructor, what are the key content of the chapter, and how the key content form an argument.
1.4	Critical Thinking	An in-class essay question, administered at the end of the semester.	Very similar to artifact 1. In addition to artifact 2, students need to incorporate a newspaper op-ed, which is on historical methodology of treating primary sources seriously and interpreting them with critical thinking skills and the class had read before, when composing the essay-question answer.

Artifact	Learning Outcome	Assessment Type	Comment
1.5	Communication	An in-class essay question, administered at the mid-term time.	Students type/write for 50 minutes to compose an essay-question answer. Students can consult the textbook but cannot do any internet search (typing is based on Lockdown Browser; every student brings a physical copy of the textbook). The essay question is on how to read a chapter selected by the instructor, what are the key content of the chapter, and how the key content form an argument.
1.6	Communication	An in-class essay question, administered at the end of the semester.	Very similar to artifact 1. In addition to artifact 2, students need to incorporate a newspaper op-ed, which is on historical methodology of treating primary sources seriously and interpreting them with critical thinking skills and the class had read before, when composing the essay-question answer.

Table 9. Artifact for HIST 1050.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	4	3	9	75	3.70
1.2	Foundation	5	1	10	75	3.70
1.3	Critical Thinking	9	13	31	38	3.08
1.4	Critical Thinking	20	22	21	28	2.63
1.5	Communication	3	13	22	53	3.37
1.6	Communication	17	10	13	51	3.08

Table 10. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- For LO1 "Foundation," 92% students achieved the targeted score of 2.5; the standard of success was met.
- For LO2 "Critical Thinking," 79% of students achieved the targeted score of 2.5; the standard of success was met.
- For LO3 "Communication," 79% students achieved the targeted score of 2.5; the standard of success was met.

Details	AIP	AIP is:	LOP	LOP is:
Artifacts 2 LO 1	3.33	Between Effective and Outstanding	92%	Above expectations
Items 6 LO 2	3.13	Between Effective and Outstanding	79%	Above expectations
Sections 1 LO 3	3.08	Between Effective and Outstanding	79%	Above expectations
Students 24 Overall	2.96	Between Adequate and Effective	79%	Above expectations
Students at or above % of success	19	out of	24	

Table 11. Overall analysis for HIST 1050.

Conclusions

According to faculty:

- This is my 3rd time participating in the General Education assessment process as the instructor of HIST 1050 US history survey. Reflecting upon the 3 processes:
 - Similarities: students tend to score higher in terms of LO1 "foundation" than the other two learning objectives perhaps because this 1000-level history survey course is built upon students' use of certain Key Terms.
 - Notable differences: in 2024 Winter, I used students' bluebook exams, and the scores were lower compared to when I choose essay-based artifacts. This is consistent with my general experiences: students can "make up" answers with foundational materials, but "getting the foundational materials correct" is harder for them. The take-away for me is that the choice of artifacts can make a big difference in the final result.

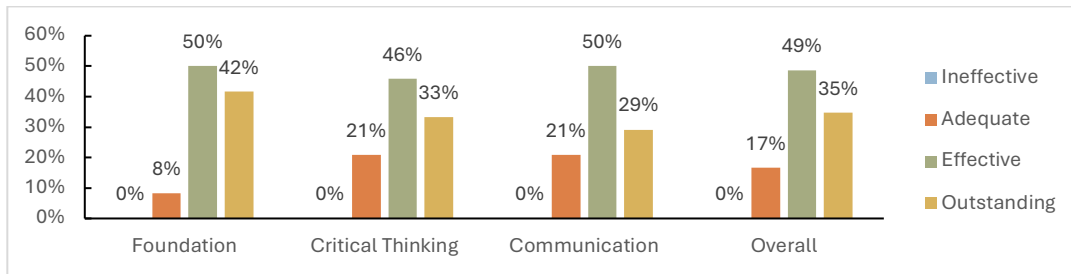


Figure 3. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- o For the General Education assessment process, my suggestions would be to emphasize to instructors that:
 - (1) this assessment is to gather data on students' performance, not instructors' teaching performance, and
 - (2) instructors should consider artifacts in terms of the learning objectives that reviewers are scoring about.

b. LITR 2031 – World Literature II

Section (s)	# Sections	# Students	Instructor
D01	1	25	Ying Ma
Totals	1	25	

Table 12. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Midterm Essay	Students write a 3 page textual analysis essay using an assigned text without the use of secondary sources.
1.2	Foundation	Final Essay	Students critically analyze an assigned text and write a 5 page paper, using at least 3 secondary sources.
1.3	Critical Thinking	Midterm Essay	Students write a 3 page textual analysis essay using an assigned text without the use of secondary sources.
1.4	Critical Thinking	Final Essay	Students critically analyze an assigned text and write a 5 page paper, using at least 3 secondary sources.
1.5	Communication	Midterm Essay	Students write a 3 page textual analysis essay using an assigned text without the use of secondary sources.
1.6	Communication	Final Essay	Students critically analyze an assigned text and write a 5 page paper, using at least 3 secondary sources.

Table 13. Artifacts for LITR 2031.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	1	7	11	6	2.88
1.2	Foundation	1	7	16	1	2.68
1.3	Critical Thinking	0	6	13	6	3.00
1.4	Critical Thinking	0	8	16	1	2.72
1.5	Communication	0	9	13	3	2.76
1.6	Communication	0	4	19	2	2.92

Table 14. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:	
Artifacts	2	LO 1	2.52	Between Adequate and Effective	56%	Below expectations
Items	6	LO 2	2.64	Between Adequate and Effective	64%	Below expectations
Sections	1	LO 3	2.64	Between Adequate and Effective	60%	Below expectations
Students	25	Overall	2.56	Between Adequate and Effective	56%	Below expectations
Students at or above % of success		14	out of	25		

Table 15. Overall analysis for LITR 2031

According to faculty:

- This is a lower-level survey course that allows students to learn about classic world literature from the 17th to 20th centuries. The two artifacts I submitted for assessment include the midterm paper and the final paper, both of which are argumentative essays and are 8 pages in total.
- I agree with the two reviewers for their opinion of the high degree of critical thinking found in students' writings. I observed that students are particularly interested in reinterpreting classic texts from a contemporary perspective using their personal experiences. Many of them connect literature to the COVID-19 quarantine and social media. However, some of them are not familiar with the method for comparing two texts from different time periods and cultures.
- In terms of communication, I suggest students focus more on grammar and concise expression. For example, I found a pattern of randomly capitalizing the first letter of words without specific reason. Some students also have punctuation issues and frequently write run-on sentences. I suggest writing problems like these be solved in composition classes if possible, so it won't influence how students perform in advanced writing and literature classes.

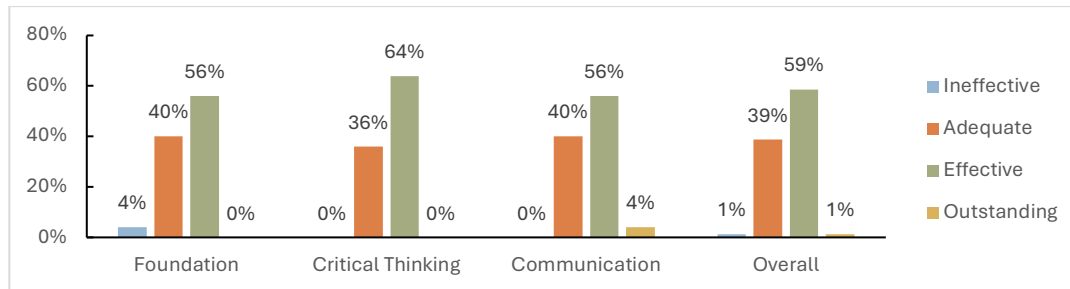


Figure 4. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

According to faculty:

- When teaching the course again in the future, I will continually encourage students to articulate literature as a contemporary reader who will therefore understand the profound influence of classics.
- For improvement, I will concentrate more on explaining literary techniques, writing literary analysis, and comparing literature from different cultures.
- I will help students transfer their creative thoughts into writing and make sure that their ideas are expressed in a way that readers can clearly understand.
- I will also encourage students to receive feedback at the writing center before submitting the final version of the paper to eliminate spelling errors and punctuation errors.

c. ARTS 1000 – Art and Society

Section (s)	# Sections	# Students	Instructor
L01	1	22	Jihong Adams Park
Totals	1	22	

Table 16. Sections assessed and participating faculty.

Artifacts

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Art critique	Explore a gallery in person or online and choose a painting to critique.
1.2	Foundation	Discussion	Students make an argument about an art form using the prompt, "Is it art or something like it?"
1.3	Critical Thinking	Art critique	Explore a gallery in person or online and choose a painting to critique.
1.4	Critical Thinking	Discussion	Students make an argument about an art form using the prompt, "Is it art or something like it?"
1.5	Communication	Art critique	Explore a gallery in person or online and choose a painting to critique.
1.6	Communication	Discussion	Students make an argument about an art form using the prompt, "Is it art or something like it?"

Table 17. Artifacts for ARTS 1000.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	0	7	15	0	2.68
1.2	Foundation	0	1	15	6	3.23
1.3	Critical Thinking	0	10	11	1	2.59
1.4	Critical Thinking	0	2	14	6	3.18
1.5	Communication	1	9	11	1	2.55
1.6	Communication	0	0	20	2	3.09

Table 18. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:
Artifacts	2 LO 1	2.73	Between Adequate and Effective	73%	Below expectations
Items	6 LO 2	2.82	Between Adequate and Effective	77%	Above expectations
Sections	1 LO 3	2.82	Between Adequate and Effective	77%	Above expectations
Students	22 Overall	2.68	Between Adequate and Effective	64%	Below expectations
Students at or above % of success		14	out of	22	

Table 19. Overall analysis for ARTS 1000.

According to faculty, with a target AIP of 2.50, students are generally performing higher than expectation at 2.68. However, it seems that overall LOP is below the expected 75% target at 64%.

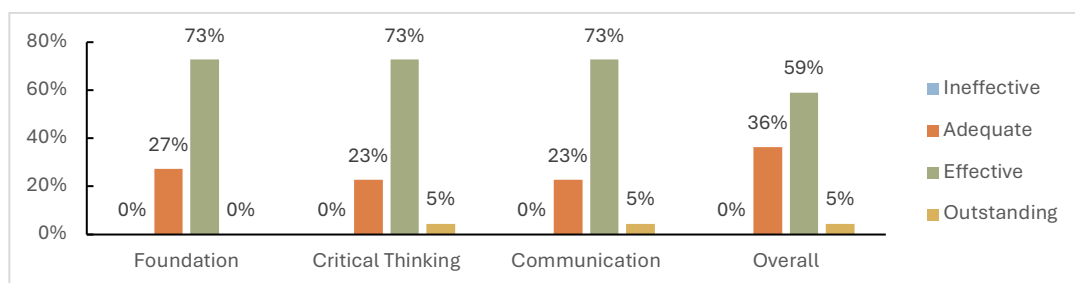


Figure 5. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

- According to faculty of this course, improved scores from the earlier course assignment to the later assignment indicate that learning is happening. Growth over the term is my takeaway. Also, perhaps the individual marker is a better indication than the overall percentage.

2. Mathematics

Courses Assessed: MATH-1250, MATH-2020/2020H, and MATH-2100.

Departments involved: Department of Mathematics

Details	AIP		AIP is:		LOP	LOP is:
Artifacts	29	LO 1	3.66	Between Effective and Outstanding	93%	At or above expectations
Items	54	LO 2	3.42	Between Effective and Outstanding	89%	At or above expectations
Sections	12	LO 3	3.39	Between Effective and Outstanding	86%	At or above expectations
Students	265	Overall	3.49	Between Effective and Outstanding	92%	At or above expectations
Students at or above % of success			243	out of	265	

Table 20. Overall analysis for the Mathematics domain.

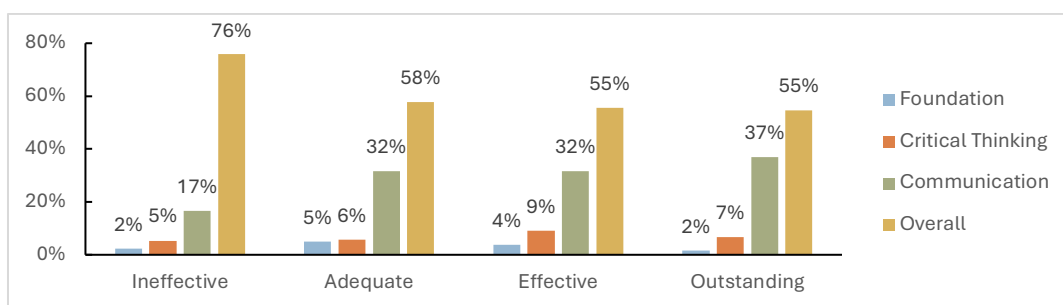


Figure 6. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

- Table 20 contains a summary of the *Mathematics* domain for Fall 2024. Additionally, Fig. 6 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:
- A total of 265 students were assessed in 12 sections.
- Students were assessed using 29 artifacts, divided into 54 items. Items were selected/created by faculty as part of required course assignments.
- **Foundation:** 93% of students were above expectations, with an AIP score between *effective* and *outstanding* of 3.66.
- **Critical Thinking:** students had an AIP score of 3.42 for this learning outcome, between *effective* and *outstanding*. The LOP was 89%, well above the 75% target.
- **Communication:** the lowest AIP score was 3.39, with a LOP of 86%, which still is well above the 75% target.
- Overall, 243 students (92%) exceeded the LOP target with an AIP score of 3.49 points. Faculty members were generally pleased with student performance on this assessment.

Table 21 contains a summary of the *Mathematics* domain from Fall 2014 until our last assessment. During this time, 11 assessments rounds were performed. Additionally, Fig. 7 the percentage difference between the overall averages of these assessment rounds. During Fall 2024 we assessed 265 students. The overall AIP of 3.49 is the highest score so far; an improvement of 20% compared to Fall 2021, and 23% compared to the Fall 2014 baseline (Fig 7).

Assessment Round	Overall Score	#Students
2014 Fall	2.77	107
2015 Winter	2.25	18
2015 Fall	2.49	38
2016 Winter	2.17	35
2016 Fall	2.06	37
2017 Winter	2.83	27
2017 Fall	3.27	45
2018 Winter	2.43	34
2021 Fall	2.87	270
2022 Fall	2.94	167
2023 Fall	3.27	339
2024 Fall	3.49	265

Table 21. Summary of the results of the Mathematics domain from the Fall 2014 until Fall 2024.

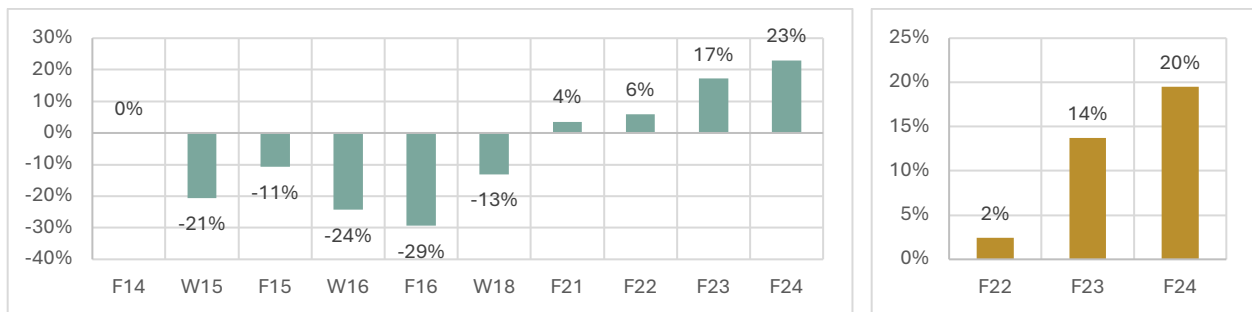


Figure 7. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014 (left) and Fall 2021 (right).

a. MATH 1250 – Trigonometry

Section (s)	# Sections	# Students	Instructor
D03, D04	2	53	Lei Cao
E01	1	13	Abushieba Ibrahim
L03	1	25	Nargess Hakim
Totals	4	91	

Table 22. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Test one #4	The question asks students to convert an angle from degrees to radians, involving simple fraction operations.
		Short answer	Find the domain and range of the trigonometric function of $f(x)=\sin x$
		MyLab Math	Question 6.3.87, a show work question scored manually
1.2	Foundation	Test one #9	The question asks students to determine the values of all six trigonometric functions given the coordinates of a point on the terminal side of an angle. This involves applying the definitions of trigonometric functions on the unit circle and using the relationships between the functions.
		Short answer	Evaluate the six trigonometric functions.
		MyLab Math	Question 7.3.17, a show work question scored manually
1.3	Critical Thinking	Midterm #30	The question provides the value of the tangent of an angle and specifies the quadrant in which the angle lies. It then asks students to use the double-angle and half-angle formulas to determine the values of the sine and cosine functions for both the double angle and the half angle.
		Short answer	Use an addition or subtraction formula to find the exact value
		MyLab Math	Question 8.2.45, a show work question scored manually

Artifact	Learning Outcome	Assessment Type	Comment
1.4	Critical Thinking	Final #24	The question requires finding all complex fourth roots of a given complex number in rectangular form. Students must first convert the complex number into exponential form and then apply the appropriate formula to determine all four distinct roots.
		Short answer	Use De Moivre's theorem to find the indicated root.
		MyLab Math	Question 9.3.61, a show work question scored manually
1.5	Communication	Test one #24	The question asks students to identify the trigonometric function that corresponds to the given graph. This requires them to understand the concepts of period, amplitude, and phase shift.
		Short answer	Graph the sine/cosine; identify the amplitude, period, and phase shift. Showing the five key points.
		MyLab Math	Question 6.6.7, a short answer question with 4 parts graded automatically.
1.6	Communication	Test three #15	Derive a general formula for the area of a given region. Students need to divide the region into two parts and apply the formulas for the areas of sectors and triangles accordingly.
		Short answer	Verify that the equation is an identity.
		MyLab Math	Question 9.1.45, a show work question graded manually

Table 23. Artifact for MATH-1250.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	4	3	9	75	3.70
1.2	Foundation	5	1	10	75	3.70
1.3	Critical Thinking	9	13	31	38	3.08
1.4	Critical Thinking	20	22	21	28	2.63
1.5	Communication	3	13	22	53	3.37
1.6	Communication	17	10	13	51	3.08

Table 24. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- Almost all students achieved perfect scores on both artifacts for LO1, demonstrating that they meet the prerequisites for the course and understand the definitions of trigonometric functions. For LO2 Artifact 1, 19 out of 27 students scored 3 or higher, indicating a strong understanding of the relationship between the trigonometric function values of an angle, its double angle, and its half angle. In contrast, for LO2 Artifact 2, only 13 out of 27 students scored 3 or higher. While most students showed proficiency in converting between the rectangular and exponential forms of a complex number—similar to the conversion between rectangular and polar coordinates—they struggled with finding the roots, even when provided with the formula. For LO3 Artifact 1, 21 out of 27 students scored 3 or higher, suggesting that most students have a good grasp of amplitude, period, and phase shift concepts and can apply them to identify the trigonometric function corresponding to a given graph. For LO3 Artifact 2, the performance was divided: half of the students achieved perfect scores, while the other half struggled. Although most students understood and applied the formulas for the area of a sector and the area of a triangle using the sine function in straightforward problems, they encountered difficulties when faced with symbolic questions.
- In general, the outcomes of this course appear to be At or above expectations. It is essential to acknowledge that the class is conducted in person, and it seems that overall, students investing sufficient effort in their studies. This dynamic, influenced by the face-to-face learning environment, warrants consideration in evaluating the course results.

- With the target being 2.5, LOP for my class for all the artifacts has been above expectations, and the standard of success was met for each outcome.

Details			AIP	AIP is:	LOP	LOP is:
Artifacts	14	LO 1	3.79	Between Effective and Outstanding	96%	Above expectations
Items	18	LO 2	3.11	Between Effective and Outstanding	82%	Above expectations
Sections	4	LO 3	3.43	Between Effective and Outstanding	90%	Above expectations
Students	91	Overall	3.41	Between Effective and Outstanding	97%	Above expectations
Students at or above % of success			88	out of 91		

Table 25. Overall analysis for MATH-1250.

Conclusions

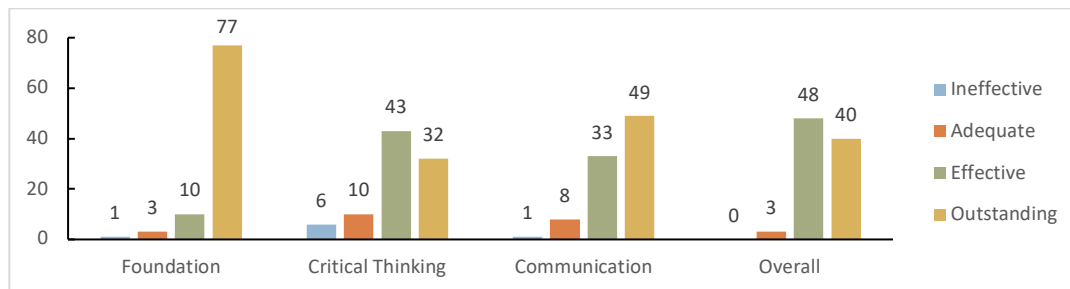


Figure 8. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- The students have a strong grasp of foundational concepts. However, they lack a geometric understanding that when two complex numbers in exponential form are multiplied, their arguments are added. As a result, they struggle to fully understand the formula that reverses the process of raising a complex number in exponential form to a power. To address this, I plan to provide more examples illustrating the geometric interpretation of multiplying complex numbers in exponential form. Additionally, students tend to become confused when faced with symbolic questions. They would benefit from practicing more problems involving symbolic representations using variables.
- The overall grade seems satisfactory. To further support students' academic progress, I have posted a review sheet on Canvas, which includes 25 multiple-choice questions that change each time a student takes it. This will be counted as an extra credit opportunity. This initiative is designed to offer additional resources and encourage greater engagement with the course material.
- Although the standard of success was met, Students' performance in critical thinking was not as strong as in the foundation and communication areas. I believe we need to increase our focus on critical thinking area to help students develop these essential skills.

b. MATH 2020 Applied Statistics

Section (s)	# Sections	# Students	Instructor
D03, D04	2	45	Matthew He
E01	1	27	Heather Hanson
L01, L02	2	52	Fuzhen Zhang
Totals	5	124	

Table 26. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Midterm #1	Finding the probability of an event under a normally distributed population
		Final	Question was a "show your work" style question on the final exam.
		Foundation	Find probability for a normal distribution
1.2	Foundation	Final Exam #1	Calculating a standard deviation of set of data by showing detailed work
		Midterm	Question was a "show your work" style question on the midterm exam.
		Foundation	Finding mean/standard deviation
1.3	Critical Thinking	Midterm #2	Performing an empirical experiment and list a sample space
		Midterm	Question was a "show your work" style question on the midterm exam.
		Critical Thinking	Finding a sample space
1.4	Critical Thinking	Final Exam #2	Calculating midpoints of frequency classes and draw a statistical graph
		Midterm	Question was a "show your work" style question on the midterm exam.
		Critical Thinking	Finding midpoint of a class
1.5	Communication	Midterm #3	Using binomial probability distribution to find the probability of an event
		Midterm	Question was a "show your work" style question on the midterm exam.
		Communication	Finding probability for a binormal distribution
1.6	Communication	Final Exam #3	Setting up hypothesis test and determine the test statistic
		Final	Question was a "show your work" style question on the final exam.
		Communication	Finding critical value

Table 27. Artifacts for Math-2020.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	18	10	9	87	3.33
1.2	Foundation	14	9	13	88	3.41
1.3	Critical Thinking	12	5	2	105	3.61
1.4	Critical Thinking	15	12	20	77	3.28
1.5	Communication	21	14	12	77	3.17
1.6	Communication	22	10	24	68	3.11

Table 28. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:
Artifacts	8	LO 1 3.52	Between Effective and Outstanding	89%	Above expectations
Items	18	LO 2 3.60	Between Effective and Outstanding	94%	Above expectations
Sections	5	LO 3 3.35	Between Effective and Outstanding	87%	Above expectations
Students	124	Overall 3.46	Between Effective and Outstanding	90%	Above expectations
Students at or above % of success		111	out of 124		

Table 29. Overall analysis for MATH-2020.

According to faculty:

- It appears students have demonstrated success with overall outstanding.
- Results show LO1 at 78%, LO2 at 89%, and LO3 at 67%. With a target of 75% indicating success, LO1 and LO2 met the criteria. LO3 did not.
- Students met the standards of success for each outcome. There were no consistent problems with the assessments.

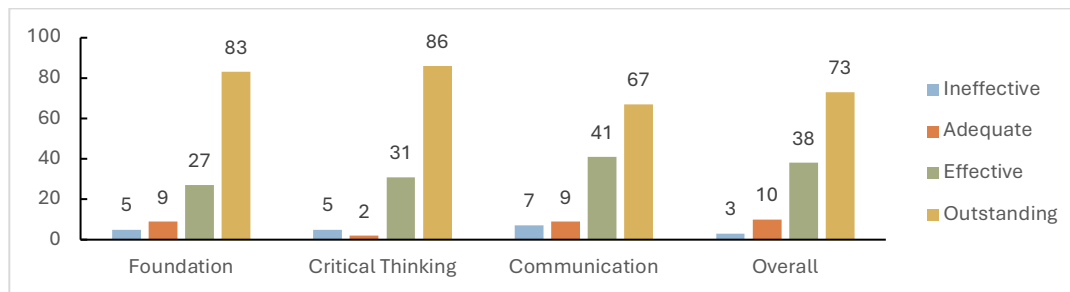


Figure 9. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

According to faculty:

- While overall data analysis showed overall outstanding on these three learning outcomes, the areas of weakness are in communication domain. Being able to communicate mathematics effectively is important for mastering statistics.
- LO3, communication, needs the most improvement. Strengths appear to be in LO2, critical thinking.
- The overall data was encouraging, and there were no big weaknesses in the students' achievement of the learning outcomes.

c. MATH 2100/2100H Calculus I

Section (s)	# Sections	# Students	Instructor
L01	1	20	Evan Haskell
D04	1	23	Abdelkrim Bourouihiya
D01H	1	7	Ricardo Carrera
Totals	3	50	

Table 30. Sections assessed and participating faculty.

Artifacts

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Foundation	Evaluate two sided limits using limit laws and definitions
		Mid Exam 7.1	Find the derivatives of a function
		T2Q4	Calculating the derivative of a polynomial function.
1.2	Foundation	Foundation	Evaluate definite integrals using properties of definite integrals
		Final Exam 6.J	Use substitution rule to find a definite integral
		T4Q1	Evaluating an integral via substitution methods.
1.3	Critical Thinking	Critical Thinking	Solve applications involving rules of differentiation
		Mid Exam 5.1-3	Find limits of functions
		T3Q2/3	Applying derivatives to solve related rates or optimization real world problem.
1.4	Critical Thinking	Critical Thinking	Solve applications involving the mean value theorem
		Final Exam 16.a	Use the derivative to determine the intervals for which a function is increasing or decreasing
		T3Q05	Applying previous learned rules of differentiation to prove the quotient rule.
1.5	Communication	Communication	Find points of discontinuity or intervals of continuity
		Mid Exam 4	Applying related rates to solve a motion problem.
		T3Q01	Applying derivatives to analyze and describe the properties of the graph of a function.
1.6	Communication	Communication	Use implicit differentiation to find slopes of curves at given points
		Final Exam 3	Applying the extreme values theorem to solve an optimization problem
		T1Q10	Applying the concept of a limit to determine the continuity of a function at a point.

Table 31. Artifacts for MATH-2100.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	1	1	9	32	3.67
1.2	Foundation	0	4	9	30	3.60
1.3	Critical Thinking	1	8	16	18	3.19
1.4	Critical Thinking	3	3	2	35	3.60
1.5	Communication	8	5	3	27	3.14
1.6	Communication	4	5	2	32	3.44

Table 32. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:
Artifacts	7 LO 1	3.78	Between Effective and Outstanding	96%	Above expectations
Items	18 LO 2	3.56	Between Effective and Outstanding	90%	Above expectations
Sections	3 LO 3	3.40	Between Effective and Outstanding	82%	Above expectations
Students	50 Overall	3.50	Between Effective and Outstanding	88%	Above expectations
Students at or above % of success		44	out of 50		

Table 33. Overall analysis for MATH-2100.

According to faculty:

- Students met the standards of success for each outcome. There are no consistent problems with the assessments.
- For objective foundation (L01), the average is 3.43 with 91% at or above % of success. For objective critical thinking (L02), the average is 3.22 with 82% at or above % of success. For objective communication (L03), the average is 2.85 with 65% at or above % of success. Therefore, the standard of success was met for L01, L02. For L03, the average score is above the average-target (2.75) and the % of success is below the expectation (75%), and so the standard of success is not met for L03.
- As indicated by the average scores for each of the learning objectives, the students are effectively achieving each of the learning objectives for this course.

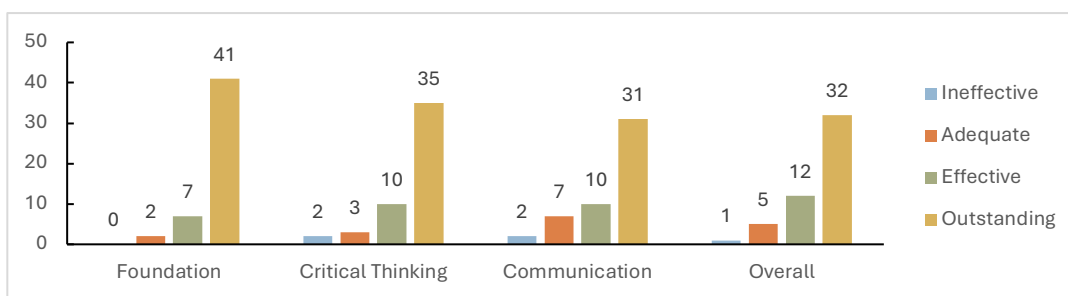


Figure 10. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

- The overall data is encouraging. Students lack any noticeable weaknesses in achievement of the learning outcomes.
- The standard of success was globally met by the students since their average score is 3.17, which is above the average-target (2.75), and the % of success is 83%, which is above the expectation (75%). 19 students out of 23 achieved a level between effective and outstanding. The standard of success was met for L01 and L02 but was not met for L03. In general, students in calculus have some difficulties dealing with applications related to L03 since they have to use concepts from algebra and trigonometry. During COVID19-period, many students did

not spend enough time mastering some of the basic concepts. I think, we need to point out those issues to the students and urge them to fill their knowledge gaps. I personally, advise my students to use for that all available resources, which include office hours, free tutoring at the testing center, and MyLab (This is a hybrid class that includes live lectures along with assignments at MyLab).

- The students demonstrated an overall good grasp and understanding of the fundamental concepts of the course. In addition, they were also able to analyze and apply what they learned in order to generate sound mathematical arguments.

3. Science

Courses Assessed: BIOL-1500, CHEM-1300, and PHYS-2350.

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

Details		AIP		AIP is:		LOP		LOP is:	
Artifacts	9	Foundation	3.63	Between Effective and Outstanding		96%	At or above expectations		
Items	19	Critical Thinking	3.62	Between Effective and Outstanding		90%	At or above expectations		
Sections	18	Communication	3.47	Between Effective and Outstanding		85%	At or above expectations		
Students	372	Overall	3.57	Between Effective and Outstanding		96%	At or above expectations		
Students at or above % of success			358	out of	372				

Table 34. Overall analysis for the Science domain.

Table 34 contains a summary of the *Science* domain for Fall 2024. Additionally, Fig. 11 shows how students overwhelmingly scored at the outstanding level for all learning outcomes. In this assessment round:

- A total of 372 students were assessed in 18 sections spread through 2 departments.
- Students were assessed using 8 artifacts, divided into 19 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 96% of students were between *effective* and *outstanding* with an AIP score of 3.63.
- **Critical Thinking:** Students had an AIP score of 3.62. The LOP success was 90%, between *effective* and *outstanding*.
- **Communication:** had the lowest AIP score was 3.47, with a LOP of 85%, which still is well above of the 75% target.
- Overall, 358 students (96%) exceeded the LOP target with an AIP score of 3.57 points. Faculty members were generally pleased with student performance on this assessment. However, they agree that Communication LO needs improvement.

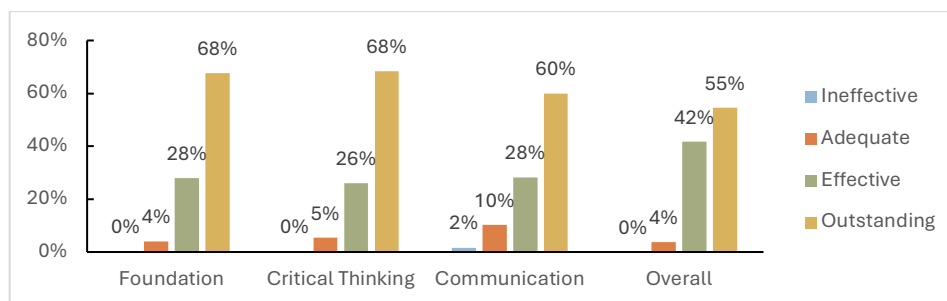


Figure 11. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 35 contains a summary of the *Science domain* from Fall 2014 until our last assessment. During this time, 11 assessments rounds were performed. Additionally, Fig. 11 the percentage difference between the overall averages of

these assessment rounds. During Fall 2024 we assessed 372 students, the highest since 2014. The overall AIP of 3.57 is also the highest score so far; an improvement of 9% compared to Fall 2021, and 13% compared to the Fall 2014 baseline.

Assessment Round	Overall Score	#Students
2014 Fall	3.13	94
2015 Winter	3.02	48
2015 Fall	3.21	111
2016 Winter	3.03	67
2016 Fall	3.18	89
2017 Winter	3.17	73
2017 Fall	2.95	62
2018 Winter	2.56	78
2021 Fall	3.28	293
2022 Fall	3.45	195
2023 Fall	3.37	222
2024 Fall	3.57	372

Table 35. Summary of the results of the Science domain from the Fall 2014 until Fall 2024.

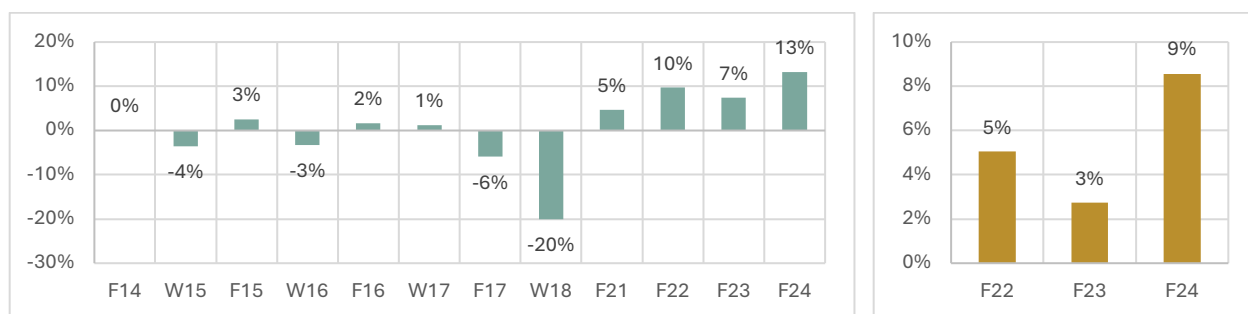


Figure 12. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014 (left) and Fall 2021 (right).

a. BIOL 1500 Biology I with Lab

Section (s)	# Sections	# Students	Instructor
D01, D02, D03	3	71	Adriana Alegre
D10, D11, D12	3	64	Adriana Alegre
D13, D14, D15	3	64	Adriana Alegre
E07, E08, E09	3	63	Andrew Ozga
Totals	12	262	

Table 36. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Final Exam	Question 12
1.2	Foundation	Final Exam	Question 42
1.3	Critical Thinking	Final Exam	Question 34
1.4	Critical Thinking	Final Exam	Question 41
1.5	Communication	Final Exam	Question 50
1.6	Communication	Final Exam	Question 48

Table 37. Artifact for BIOL-1500.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	31	21	1	209	3.48
1.2	Foundation	13	42	8	199	3.50
1.3	Critical Thinking	11	22	15	214	3.65
1.4	Critical Thinking	26	5	43	188	3.50
1.5	Communication	43	14	19	186	3.33
2.1	Communication	6	19	69	168	3.52

Table 38. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- For LO1 (Foundations), 89% of the students performed effective and outstanding representing that the vast majority of the class understands basic cell biology terminology. For LO2 (Critical Thinking), 81% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. For LO3 (Communication) 75 % performed effective and outstanding, however was the lowest score out of the three LO.
- For LO1 (Foundations), 79% of the students performed effective and outstanding representing that the vast majority of the class understands basic cell biology terminology. For LO2 (Critical Thinking), 71% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. For LO3 (Communication) 66%, while students didn't perform as high as LO1 and LO2 the majority of the class still performed well and understand biological problems and communication in today's society.
- For LO1 (Foundations), 84% of the students performed effective and outstanding representing that the vast majority of the class understands basic cell biology terminology. For LO2 (Critical Thinking), 74% of the students performed effective and outstanding representing that the students can problem solve basic biology problems. For LO3 (Communication) 70%, while students didn't perform as high as LO1 and LO2 the majority of the class still performed well and understand biological problems and communication in today's society.

Details			AIP	AIP is:	LOP	LOP is:
Artifacts	4	LO 1	3.58	Between Effective and Outstanding	95%	Above expectations
Items	6	LO 2	3.74	Between Effective and Outstanding	98%	Above expectations
Sections	12	LO 3	3.61	Between Effective and Outstanding	92%	Above expectations
Students	262	Overall	3.58	Between Effective and Outstanding	98%	Above expectations
Students at or above % of success			256	out of		262

Table 39. Overall analysis for BIOL 1500.

Conclusions

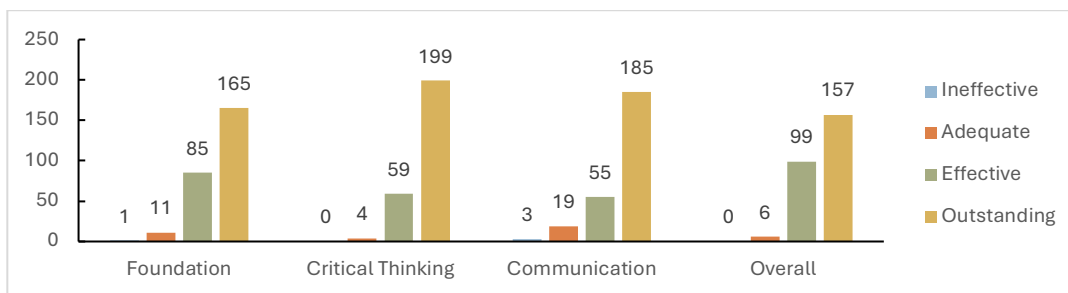


Figure 13. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- Overall, the data was outstanding with the majority of the class knowing basic cell biology concepts, critical thinking in cell biology, and science communication. The students exhibit strengths in foundation and critical thinking. However, there can be improvements in science communication, since they didn't perform as well as in the LO1 and LO2 objectives.

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

Section (s)	# Sections	# Students	Instructor
D07	1	27	Maria Ballester
D13, D15	2	39	Zahilyn Roche Allred
Totals	3	66	

Table 40. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	ACS Final	Questions: 10 (gray exam) and 11 (yellow exam)
1.2	Foundation	ACS Final	Questions: 28 (gray exam) and 33 (yellow exam)
1.3	Critical Thinking	ACS Final	Questions: 22 (gray exam) and 19 (yellow exam)
1.4	Critical Thinking	ACS Final	Questions: 35 (gray exam) and 36 (yellow exam)
1.5	Communication	ACS Final	Questions: 64 (gray exam) and 44 (yellow exam)
2.1	Communication	Lab Practical	

Table 41. Artifacts for CHEM 1300.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	0	8	23	35	3.41
1.2	Foundation	5	1	0	60	3.74
1.3	Critical Thinking	8	21	4	33	2.94
1.4	Critical Thinking	4	12	6	44	3.36
1.5	Communication	12	7	6	41	3.15
2.1	Communication	20	18	16	12	2.30

Table 42. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:
Artifacts	3	LO 1	3.77	Between Effective and Outstanding	95% Above expectations
Items	7	LO 2	3.23	Between Effective and Outstanding	82% Above expectations
Sections	3	LO 3	2.98	Between Adequate and Effective	74% Below expectations
Students	66	Overall	3.27	Between Effective and Outstanding	92% Above expectations
Students at or above % of success		61	out of	66	

Table 43. Overall analysis for CHEM 1300.

According to faculty:

- AIP is higher than the target but the % success of 70% is lower than the target of 75%
- The data indicates that the majority of students are successfully achieving the learning outcomes, with 37 out of 39 students meeting or exceeding the established percentage of success. LO1 (Foundational Knowledge) - Demonstrated the highest level of success, with 97% of students achieving or surpassing expectations. LO2 (Critical Thinking) - Performed well, with 90% of students meeting or exceeding expectations.

- LO3 (Communication) - Showed the lowest percentage of success at 69%, which falls below the expected standard and suggests an area requiring improvement. In summary, while LO1 and LO2 indicate strong performance, targeted interventions may be necessary to enhance outcomes related to LO3.

Conclusions

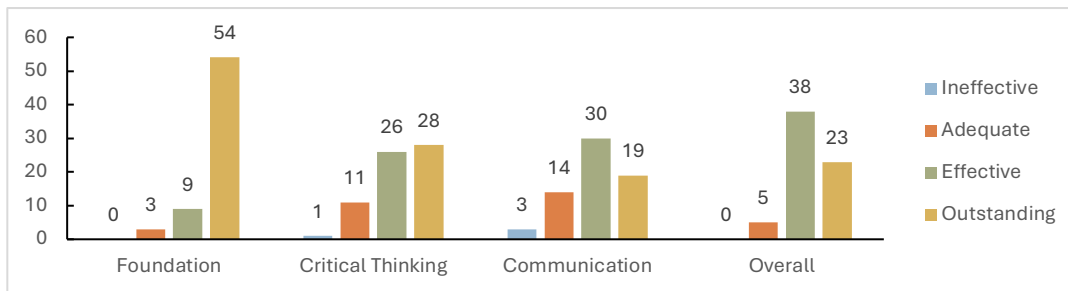


Figure 14. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- It was found the students still struggle applying critical thinking and communicating effectively in science. I suggest the feedback on communications needs to be done early in the semester to improve their skills. The critical thinking can be improved with general recitation of these concepts announced in the tutoring center (like a group reviews open to all students)
- The overall data suggests that students are performing well in most areas, with 37 out of 39 students meeting or exceeding the success threshold. However, the performance varies across the learning outcomes, highlighting areas of strength and weakness. Students’ performance on LO1 and LO2 are areas of strength. LO1 with 97% success, students exhibit a strong grasp of core concepts and foundational material. This indicates effective instruction and alignment between teaching methods and assessment strategies. Similarly, with a 90% success rate on LO2 reflects students’ ability to analyze and apply knowledge critically, which suggests this learning outcome is also being effectively supported. However, with 69% success rate, the LO3 falls below expectations. Students appear to struggle with the effective articulation of their ideas. This may suggest the need for more focused instruction, additional practice opportunities, or revised assessments tailored to enhance this skill set. A possible revision to the assessment process could be to incorporate more in-class/lab opportunities for students to receive feedback on their communication skills before final assessments. Offer in-lab workshop focused on communication, such as presentations, writing assessment that provide scaffolding of ideas, or collaborative discussions.

c. PHYS 2350 General PHYSICS I with Lab

Section (s)	# Sections	# Students	Instructor
D01, D02, D06	3	44	Victor Castro Junca
Totals	3	44	

Table 44. Sections assessed and participating faculty.

Artifacts

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Final Exam	Question #4
1.2	Foundation	Final Exam	Question #11
1.3	Critical Thinking	Final Exam	Question #5
1.4	Critical Thinking	Final Exam	Question #8
1.5	Communication	Final Exam	Question #15
1.6	Communication	Final Exam	Question #30

Table 45. Artifacts for PHYS 2350.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	0	0	6	38	4
1.2	Foundation	2	9	2	31	3
1.3	Critical Thinking	0	11	5	28	3
1.4	Critical Thinking	2	9	2	31	3
1.5	Communication	15	4	5	20	3
1.6	Communication	3	0	12	29	4

Table 46. Results for each rubric Learning Outcome. The Table shows the number of students per score and the AIP for each item/learning outcome.

Data Analysis

Details			AIP	AIP is:	LOP	LOP is:
Artifacts	1	LO 1	3.73	Between Effective and Outstanding	98%	Above expectations
Items	6	LO 2	3.50	Between Effective and Outstanding	89%	Above expectations
Sections	3	LO 3	3.32	Between Effective and Outstanding	89%	Above expectations
Students	44	Overall	3.45	Between Effective and Outstanding	93%	Above expectations
Students at or above % of success			41	out of		44

Table 47. Overall analysis for PHYS 2350.

- **Foundations:** 98% of the students performed between effective and outstanding, representing that the vast majority of the class understands basic physics terminology.
- **Critical Thinking and Communication:** 89% of the students performed effective and outstanding representing that the students can problem solve basic physics problems and communicating in proper physics terminology.

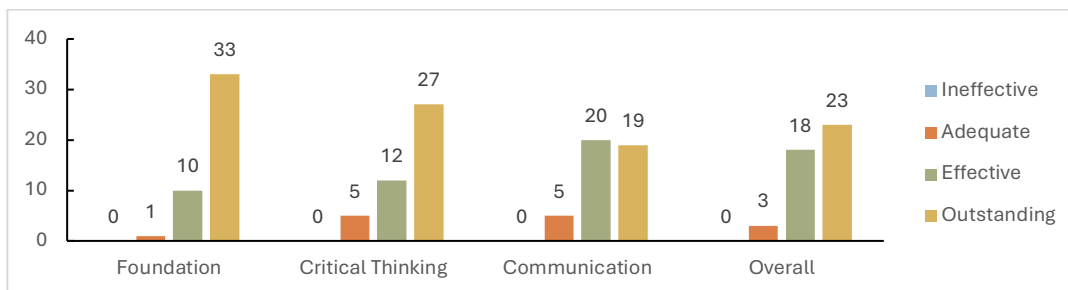


Figure 15. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

- Students did generally well within the quantitative aspects of the assessment, but there needs to be more emphasis on the conceptual aspects (Fig. 15).
- The two last learning outcomes show that students need to spend more time working on understanding basic physics concepts and physics terminology.

4. Social and Behavioral Sciences

Courses Assessed: PSYC-1020, ECN-2025, and INST-1500

Departments involved: Department Psychology and Neuroscience, Department of Humanities and Politics, and the Department of Finance and Economics.

Details			AIP	AIP is:	LOP	LOP is:
Artifacts	7	LO 1	3.52	Between Effective and Outstanding	92%	At or above expectations
Items	24	LO 2	3.70	Between Effective and Outstanding	95%	At or above expectations
Sections	5	LO 3	3.69	Between Effective and Outstanding	86%	At or above expectations

Details		AIP	AIP is:	LOP	LOP is:
Students	121	Overall 3.64	Between Effective and Outstanding	95%	At or above expectations
Students at or above % of success		115	out of	121	

Table 48. Overall analysis for the Social and Behavioral Sciences domain.

Table 48 and Fig. 16 contain a summary of the *Social and Behavioral Sciences* domain for Winter 2025. Results show that students overwhelmingly scored between effective and outstanding levels. In summary:

- A total of 121 students were assessed in 5 sections spread through 3 departments.
- Students were assessed using 7 artifacts, divided into 24 items.
- Multiple choice items were selected/created by faculty as part of required course assignments.
- **Foundation:** 92% of students were above of the 75% target. The AIP was between *effective and outstanding* with an AIP score of 3.52.
- **Critical Thinking:** had the highest AIP score of 3.70 between *effective and outstanding*. The LOP was 95%, well above of the 75% target, and the highest for this domain.
- **Communication:** AIP score of 3.69 with a LOP of 86%, also well above of the 75% target.
- Overall, 115 students (95%) exceeded the LOP target with an AIP score of 3.64 points. These numbers show an improvement over last year’s assessment. Faculty members were pleased with student performance on this assessment.

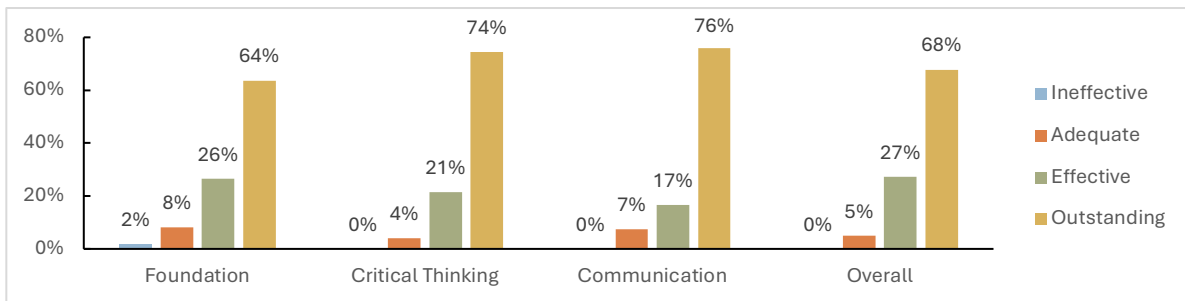


Figure 16. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Assessment Round	Overall Score	#Students
2014 Fall	2.90	101
2015 Winter	2.60	41
2015 Fall	2.70	31
2017 Winter	2.60	59
2017 Fall	2.90	48
2018 Winter	3.20	59
2021 Fall	3.23	161
2023 Winter - 2022 Fall	3.27	244
2024 Winter - 2023 Fall	3.30	300
2025 Winter - 2024 Fall	3.64	121

Table 49. Summary of the results of the Social and Behavioral Sciences domain from the Fall 2014 until Fall 2024.

Table 49 contains a summary for the 10 assessment rounds performed in this domain since Fall 2014. During this round, we assessed 121 students with an overall AIP of 3.64. Figure 17 shows the percentage differences between the overall averages of the 10 assessment rounds performed. Winter 2025 has the highest AIP score so far, an improvement of 12% compared to Fall 2021, and 23% compared to the Fall 2014 baseline. The trend for this domain shows a continuous growth.

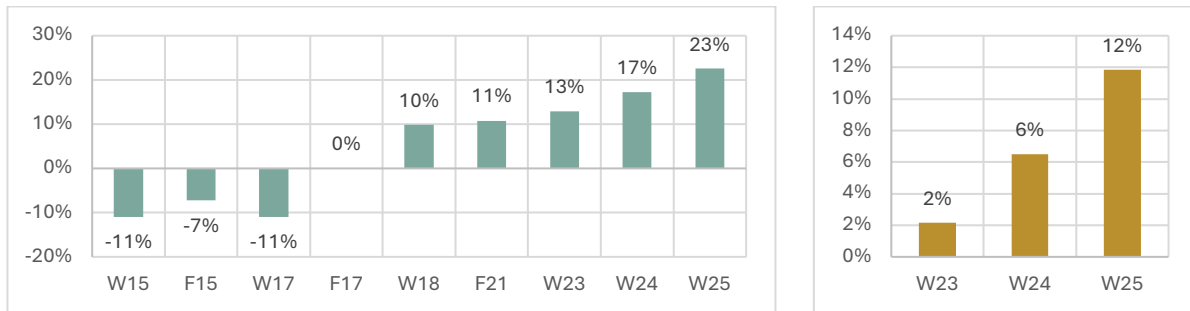


Figure 17. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014 (left) and Fall 2021 (right).

a. PSYC 1020/1020H Introduction to Psychology/Honors

Section (s)	# Sections	# Students	Instructor
D01H	1	14	Leanne Boucher Gill
D08	1	28	Timothy Razza
D02	1	22	Glenn Scheyd
Totals	3	64	

Table 50. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Behaviorism: negative reinforcement
		MC	Behaviorism: negative reinforcement
1.2	Foundation	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Developmental psychology: Piaget's theory of cognitive development
		MC	Developmental psychology: Piaget's theory of cognitive development
1.3	Critical Thinking	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Research methods: research design
		MC	Research methods: research design
1.4	Critical Thinking	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Research methods: research design
		MC	Research methods: research design
1.5	Communication	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Social psychology: different types of behavioral change in social contexts
		MC	Social psychology: different types of behavioral change in social contexts
1.6	Communication	MCQ	1 question on a MC quiz. Quiz counted as 3% of final grade.
		MC	Social psychology: heuristics
		MC	Social psychology: heuristics

Table 51. Artifact for PSYC 1020.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	7	22	0	35	2.98
1.2	Foundation	6	3	9	46	3.48
1.3	Critical Thinking	1	2	10	51	3.73
1.4	Critical Thinking	6	1	3	54	3.64
1.5	Communication	2	2	6	54	3.75
1.6	Communication	1	1	5	57	3.84

Table 52. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- 100% of students were at or above expectations with an AIP of 3.5. Los 2 and 3 were Outstanding. LO 1 was between effective and outstanding, demonstrating knowledge learned.
- Over 80% of students answered 5 of 6 questions correctly. 79% of students answered the remaining questions correctly. This data suggests that a large majority of students are achieving the stated learning outcomes.
- Students are generally succeeding across the learning outcomes, struggling on only 1 of the 6 artifacts (negative reinforcement).

Details		AIP	AIP is:	LOP	LOP is:	
Artifacts	3	LO 1	3.79	Between Effective and Outstanding	96%	Above expectations
Items	12	LO 2	3.11	Between Effective and Outstanding	82%	Above expectations
Sections	4	LO 3	3.43	Between Effective and Outstanding	90%	Above expectations
Students	91	Overall	3.41	Between Effective and Outstanding	97%	Above expectations
Students at or above % of success		88	out of 91			

Table 53. Overall analysis for PSYC 1020.

Conclusions

According to faculty:

- Students did the worse overall on a question that asked about the concept of negative reinforcement (only 21% answered correctly with 71% answering adequately). This is a question about applying the concepts of reinforcement within the topic of operant conditioning. This is a notoriously difficult topic for many students to understand. Perhaps another question about operant conditioning can be used that can better assess student's general knowledge about operant conditioning, without asking such a specific question. On the other hand, 86% and 100% of students got the two questions about research methods correct. 93% and 71% percent of students got the two social psychology questions correct.
- The data supports that a large majority of students are achieving the desired learning outcomes.

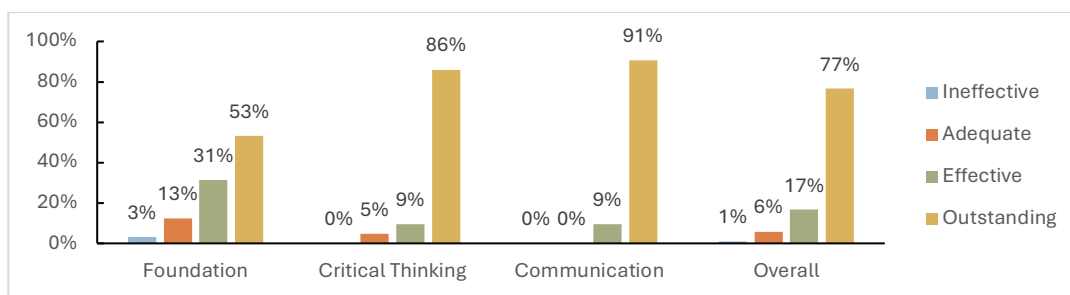


Figure 18. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

- The overall pattern of the data indicate success with learning the major concepts but confusion regarding the counterintuitive terminology of "negative reinforcement" in the psychology of learning. We might want to change the question in that one domain to better assess conceptual understanding of operant conditioning rather than the students' memory of the specific labels used by behaviorists.

b. ECN 2025 Principles of Microeconomics

Section (s)	# Sections	# Students	Instructor
D02	1	36	Albert Williams
Totals	1	36	

Table 54. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	M/C Question	A midterm exam with 25 M/C questions for knowledge, critical thinking, and communication.
1.2	Foundation	M/C Question	A final exam with 50 M/C questions for knowledge, critical thinking, and communication.
1.3	Critical Thinking	M/C Question	A midterm exam with 25 M/C questions for knowledge, critical thinking, and communication.
1.4	Critical Thinking	M/C Question	A final exam with 50 M/C questions for knowledge, critical thinking, and communication.
1.5	Communication	M/C Question	A midterm exam with 25 M/C questions for knowledge, critical thinking, and communication.
1.6	Communication	M/C Question	A final exam with 50 M/C questions for knowledge, critical thinking, and communication.

Table 55. Artifacts for ECN 2025.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	1	1	3	31	3.78
1.2	Foundation	0	0	1	35	3.97
1.3	Critical Thinking	0	2	3	31	3.81
1.4	Critical Thinking	0	0	1	35	3.97
1.5	Communication	1	1	7	27	3.67
1.6	Communication	0	0	1	35	3.97

Table 56. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- The questions chosen from both the midterm and final exams had discriminant indices greater than 0.30. These scores above show that all of the students are achieving the learning outcomes.

Details	AIP	AIP is:	LOP	LOP is:
Artifacts 2 LO 1	3.94	Between Effective and Outstanding	100%	Above expectations
Items 6 LO 2	3.94	Between Effective and Outstanding	100%	Above expectations
Sections 1 LO 3	3.94	Between Effective and Outstanding	100%	Above expectations
Students 36 Overall	3.94	Between Effective and Outstanding	100%	Above expectations
Students at or above % of success	36	out of	36	

Table 57. Overall analysis for ECN 2025.

Conclusions

According to faculty:

- The data shows (Table 56) a concentration of scores near to 4 (average ranging from individual items range from 3.67 to 3.97).
- The first question for LO3 was a blend of reading carefully AND having a good understanding of duopoly. This is considered a harder question. Most still got it correctly.
- The overall test scores for both midterm and final exams were excellent. These good results are also due to three weekly assignments and an interactive class, etc.
- Perhaps, the use of more questions per learning objectives is good.

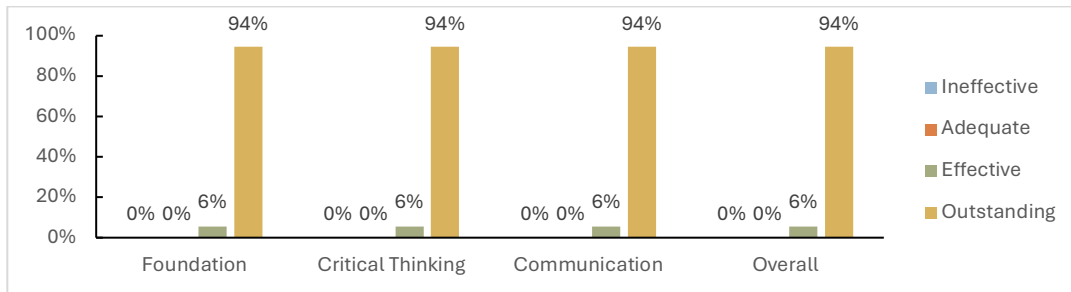


Figure 19. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

c. INST-1500 Global Issues

Section (s)	# Sections	# Students	Instructor
D01	1	21	Johnathon Vsetecka
Totals	1	21	

Table 58. Sections assessed and participating faculty.

Artifacts

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Global Issues Paper	Students write a 3-4 page paper on a selected global issue in a chosen country
1.2	Foundation	UN Policy Proposal	Students write a 5-page UN Policy Proposal recommending fixes for a global issue
1.3	Critical Thinking	Global Issues Paper	Students write a 3-4 page paper on a selected global issue in a chosen country
1.4	Critical Thinking	UN Policy Proposal	Students write a 5-page UN Policy Proposal recommending fixes for a global issue
1.5	Communication	Global Issues Paper	Students write a 3-4 page paper on a selected global issue in a chosen country
1.6	Communication	UN Policy Proposal	Students write a 5-page UN Policy Proposal recommending fixes for a global issue

Table 59. Artifacts for INST-1500.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	0	2	13	6	3.19
1.2	Foundation	0	4	7	10	3.29
1.3	Critical Thinking	0	2	16	3	3.05
1.4	Critical Thinking	0	4	9	8	3.19
1.5	Communication	0	8	12	1	2.67
1.6	Communication	0	7	9	5	2.90

Table 60. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

Details		AIP	AIP is:	LOP	LOP is:
Artifacts	2 LO 1	3.33	Between Effective and Outstanding	90%	Above expectations
Items	6 LO 2	2.95	Between Adequate and Effective	90%	Above expectations
Sections	1 LO 3	2.57	Between Adequate and Effective	57%	Below expectations
Students	21 Overall	2.81	Between Adequate and Effective	81%	Above expectations
Students at or above % of success		17	out of	21	

Table 61. Overall analysis for INST-1500.

According to faculty:

- The artifacts that were assessed for this general education report included a 3-4 page global issues paper where students selected one of the global issues from the first half of the semester to write about and a 5-page UN Policy Proposal.
- Both assignments were designed to get students to exercise foundational writing skills, critical thinking, and global communication.
- The reviewers scores showing that most of the students were at or above the success rate for foundation, critical thinking, and communication is in line with my interpretation of their achievements as well.
- I particularly like the UN Policy Proposal assignment as it challenges them to communicate their research and critical thinking into digestible and articulate writing.

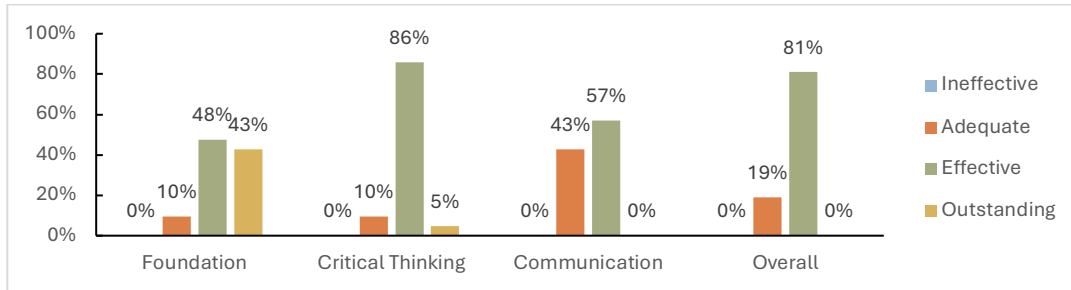


Figure 20. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

Conclusions

- Overall, I think the data shows a positive trend in student achievement.
- Students are meeting or exceeding learning outcome goals, and I was encouraged to see their efforts in class translated into hard data that reflects their skills.
- When teaching this course again next year, I plan to continue to work with students to meet and exceed these goals again.
- The third learning outcome, communication, was the lowest of the scores (but still was adequate), so I plan to spend more time getting students to work on communication through writing and reading.

5. Written Composition

Courses Assessed: COMP-2000 and COMP-2000H.

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

Details	AIP	AIP is:	LOP	LOP is:
Artifacts 4 LO 1	3.00	Effective	85%	Above expectations
Items 6 LO 2	2.70	Between Adequate and Effective	60%	Below expectations
Sections 4 LO 3	2.85	Between Adequate and Effective	80%	Above expectations
Students 20 Overall	2.85	Between Adequate and Effective	80%	Above expectations
# Students at or above % of success	16	out of	20	

Table 62. Overall analysis for the Written Composition domain.

- Table 62 and Fig. 21 contain a summary of the *Written Composition* domain for Winter 2025. In general, results show that students' performance was below the expected goals. In this assessment round:
- A total of 20 students were assessed in 4 sections.
- Students were assessed using 4 artifacts, divided into 6 items. Items were selected/created by faculty as part of required course assignments.

- **Foundation:** 85% of students were above expectations, with an AIP score between *adequate and effective* of 3.00.
- **Critical Thinking:** the lowest AIP score was 2.70 for this learning outcome, between *adequate and effective*. The LOP was 60%, well below the 75% target.
- **Communication:** students had an AIP score of 2.85, with a LOP of 80%, below the 75% target.
- Overall, 16 students (80%) exceeded the LOP target with an AIP score of 2.85 points.

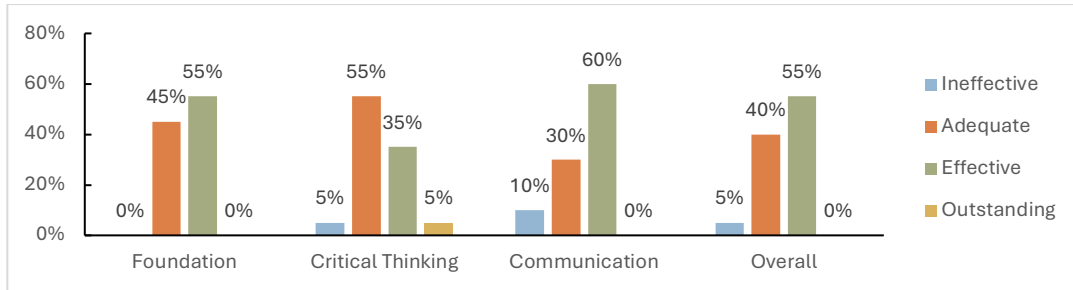


Figure 21. AIP distribution of % scores per learning outcome. The number of students is shown on top of each bar.

Table 63 contains a summary of the domain from Fall 2014 until our last assessment. During this time, 11 assessments rounds were performed. In Winter 2025 we assessed 20 students, the lowest since 2014. The overall AIP of 2.85 is close to the total average so far; Additionally, in Fig. 22 the percentage difference between the overall averages of these assessment rounds shows a slow recovery in performance. This can be seen by the increase of 8% compared to Fall 2021, and a drop of 1% compared to the Fall 2014 baseline.

Assessment Round	Overall Score	#Students
2014 Fall	2.87	25
2015 Winter	3.16	28
2015 Fall	3.30	12
2016 Fall	2.48	42
2017 Winter	2.71	37
2017 Fall	2.85	32
2018 Winter	2.88	72
2021 Fall	2.64	23
2023 Winter	2.81	28
2024 Winter	2.68	24
2025 Winter	2.85	20

Table 63. Summary of the results of the Written Composition domain from the Fall 2014 until Winter 2025.

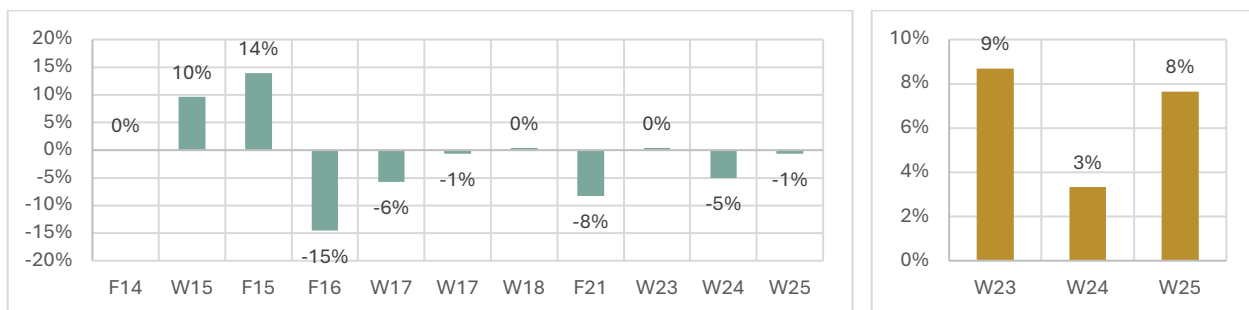


Figure 22. Percentage difference between the AIP scores per assessment round and the baseline, chosen to be the AIP result from Fall 2014 (left) and Fall 2021 (right).

a. COMP 2000/2000H – Advanced College Writing/Honors

Section (s)	# Sections	# Students	Instructor
E02	1	5	Billy Jones
L08	1	5	Carrie Katz
L03	1	5	Logan Bearden

Section (s)	# Sections	# Students	Instructor
D02H	1	5	Star Vanguri
Totals	4	20	

Table 64. Sections assessed and participating faculty.

Artifacts

Artifacts varied from one instructor to the other.

Artifact	Learning Outcome	Assessment Type	Comment
1.1	Foundation	Final Essay	
1.2	Critical Thinking	Final Essay	
1.3	Communication	Final Essay	

Table 65. Artifact for COMP 2000.

Data Presentation

Artifact	Learning Outcome	1	2	3	4	AIP
		Ineffective	Adequate	Effective	Outstanding	
1.1	Foundation	0	3	14	3	3.00
1.2	Critical Thinking	0	8	10	2	2.70
1.3	Communication	0	4	15	1	2.85

Table 66. Results for each rubric Learning Outcome. The Table shows the number of students per score. The AIP for each item/learning outcome is also given.

Data Analysis

According to faculty:

- Overall, the average individual proficiency of the five students' essays that were collected is 2.85, between "adequate" and "effective": Foundation has an AIP of 3.0 (85%); Critical Thinking has an AIP of 2.7 (60%); Communication has an AIP of 2.85 (80%). Sixteen out of twenty students are at or above the standard of success. Overall, the learning outcomes proficiency percentage is 80%, above expectations.
- My data indicate that students are performing effectively in the foundation (score of 4), critical thinking (score of 5) and communication (score of 4) learning outcomes. Regarding Learning Outcomes Proficiency (LOP), students are performing above expectations with a median Average Individual Proficiency (AIP) score of 3.0 (effective).
- Overall assessment results evaluate the composition program between "adequate" and "effective" in terms of the general education learning outcomes. In fact, LO1 and LO3 results were "above expectations." In the overall program results, LO2 received the lowest evaluation. Per the rubric, LO2 is "Critical Thinking." My individual class's evaluations for LO1 and LO3 are higher than the programmatic averages, but the LO2 score is the same for the overall program: an LOP of 60%. In my personal experience, students do not seem to struggle with LO2 as much as this assessment indicates. A larger, more representative sample size may yield different results in future assessments.

Details	AIP	AIP is:	LOP	LOP is:		
Artifacts	4	LO 1	3.00	Effective	85%	Above expectations
Items	6	LO 2	2.70	Between Adequate and Effective	60%	Below expectations
Sections	4	LO 3	2.85	Between Adequate and Effective	80%	Above expectations
Students	20	Overall	2.85	Between Adequate and Effective	80%	Above expectations
Students at or above % of success	16	out of			20	

Table 67. Overall analysis for COMP 2000.

Conclusions

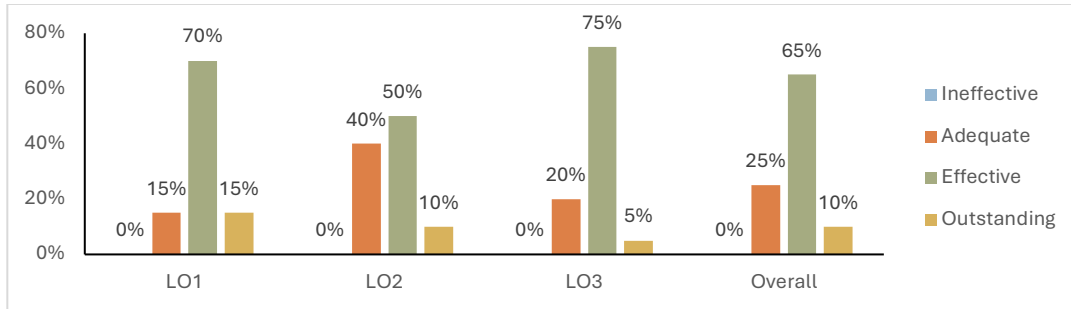


Figure 23. AIP distribution of scores per Learning Outcome. The number of students is shown on top of each bar.

According to faculty:

- Some of these data are outliers, inconsistent with the overall program data. This indicates the need for a revised assessment process regarding writing sample collection. A larger sample size is necessary for data accuracy.
- The end-of-course research capstone was the primary artifact submitted for the analysis. One recommendation is to ensure instructional techniques are mapped from course objectives and general learning outcomes. Greater instructional focus is needed to achieve "outstanding" proficiency in all areas.

Learning Outcomes and Assessment Rubrics

The General Education program learning outcomes are based on three (3) pillars (categories), aligned with the mission of NSU and the Gen Ed program: Foundation, Critical Thinking, and Communication. 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.

1. Arts and Humanities

a. Learning Objectives

Foundation	Critical thinking	Communication
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.

b. Assessment Rubric

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.

2. Mathematics

a. Learning Objectives

Foundation	Critical thinking	Communication
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.

b. Assessment Rubric

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.

3. Science

a. Learning Objectives

Foundation	Critical thinking	Communication
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.

b. Assessment Rubric

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.
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.

4. Social and Behavioral Sciences

a. Learning Objectives

Foundation	Critical thinking	Communication
Identify and understand the major concepts and methods to investigate, analyze, or predict human behavior and cognition relevant to the discipline.	Use concepts and evidence within the subject area to explain human behavior and cognition.	Communicate knowledge, thoughts, and reasoning clearly and effectively within the subject area.

b. Social and Behavioral Sciences Assessment Rubric

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.

5. Written Composition

a. Learning Objectives

Foundation	Critical thinking	Communication
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.

b. Assessment Rubric

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 understanding or consideration of audience and contextual awareness.	Language choice, tone, and style indicate an understanding of audience and contextual awareness, although use and structure may be inconsistent.	Language choice, tone, and style indicate a consistent understanding of audience and contextual awareness.	Language choice, tone, and style indicate an advanced understanding of audience and contextual awareness.