



OFFICE OF ACADEMIC ASSESSMENT
The UNIVERSITY of OKLAHOMA



GENERAL EDUCATION ASSESSMENT REPORT

2022-2023

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General Education Assessment Report for the 2022-23 Academic Year

Background Information

In Fall 2022, the University of Oklahoma (OU) completed the development of a comprehensive plan for assessing the General Education (GE) curriculum per recommendations by the Higher Learning Commission (HLC). The plan included six newly articulated student learning outcomes (SLOs) along with specific performance indicators for each SLO, a detailed curriculum map indicating systematic alignment of selected GE courses with specific SLOs and performance indicators, and the initial timeline of the implementation of the plan. Though the plan was meant to be implemented from Fall of 2022 per HLC recommendations, members of the General Education Assessment Subcommittee (GEAS), a Provost-appointed faculty-led group charged with overseeing the implementation of the plan, determined that the implementation could begin as early as Fall 2022 given that several large GE courses had well-developed assessment processes in place. GEAS determined that two SLOs would be assessed per semester, with each SLO assessed in two or three selected GE courses.

This report provides results of the GE assessment plan for the 2022-23 Academic Year. All figures reflect combined results of quantitative and qualitative analyses from Fall 2022 and Spring 2023, including data from direct and indirect assessments and key recommendations for continuous improvement. This report is divided into four major sections (i.e., one for each SLO assessed). In each section, the SLO is defined and a list of courses that assessed the outcome is provided, followed by the presentation of direct and indirect assessments as well as key recommendations for continuous improvement.

General Education Assessment at OU – An Overview

OU uses multiple measures to assess the effectiveness of its General Education program. Central to the process is a course-based assessment of student learning in which faculty members across academic departments assess the extent to which students meet various performance indicators articulated for each SLO in their respective general education courses.

Student performance data (direct assessment) is measured using a four-point rubric that categorizes the performance indicators for each SLO as “exceeds expectations”, “meets expectations”, “partially meets expectations”, and “does not meet expectations.” Individual faculty members teaching the targeted general education courses submit to the Office of Academic Assessment either (a) reports of student performance in the “signature” assignments or course projects of their choice and/or (b) data from an examination or a series of examinations whose questions are aligned with the general education SLOs.

Indirect assessment data are gathered using the *General Education Student Survey*, which is deployed at the end of the semester in each targeted course. Data from the process are analyzed by the Office of Academic Assessment and returned to each faculty member to use for the continuous enhancement of teaching and learning in their courses. At the conclusion of this process, reports for both the direct and indirect assessments are discussed at the faculty-led General Education Assessment Subcommittee (GEAS) meetings held twice each semester. A synthesis of the recommendations for continuous improvement are then forwarded to the Provost’s Advisory Committee for General Education Oversight (PACGEO) to discuss and determine University-wide action plans for continuous improvement of the general education curriculum.

General Education Assessment Procedures and Results

Of the six General Education SLOs, the GEAS suggested assessment of the following four SLOs in Fall 2022 and Spring 2023.

1. Communication Skills (Fall 2022)
2. Quantitative and Numerical Analysis Skills (Fall 2022 and Spring 2023)
3. Community, Culture and Diversity (Fall 2022 and Spring 2023)
4. Critical Analysis and Scientific Reasoning (Fall 2022 and Spring 2023)

The course-level reports from individual courses assessed in Fall 2022 and Spring 2023 provide ample evidence that, generally, OU students met or exceeded the SLOs addressed during this cycle. The following sections provide detailed results of assessment for each SLO.

Student Learning Outcomes

SLO 1: Communication Skills

Students will clearly and effectively communicate knowledge and ideas in written, oral, and visual/spatial forms appropriate to the general education subject area. They will engage with their audiences by actively reading, listening, reflecting, and responding to and delivering messages using a variety of formats.

Communication Skills Performance Indicators

At the conclusion of the general education curriculum/program, the student should be able to:

- a) Demonstrate proficiency in listening, speaking, writing, and reading
- b) Explain how the context in which a message is communicated influences its interpretation
- c) Apply appropriate form and style to effectively and respectfully engage audiences using a variety of media
- d) Write using a multi-step process of planning, critiquing, editing, and revising

Participating Courses:

JMC 1013, COMM 1113, and COMM 2613

Direct and Indirect Assessment Mechanisms:

Direct assessment data were gathered [$N=499$] by instructors using a detailed and well-developed rubric for the project. Departmental rubric criteria were systematically aligned with each of the performance indicators for the Communication Skills SLO, and data were reported for each performance indicator based on the number of student artifacts that “exceeded expectations,” “met expectations,” “partially met expectations,” and “did not meet expectations” per instructors’ ratings. A range of signature assignments were selected to address performance indicators in the above SLO. For example, in JMC 1013, faculty used weekly blog posts and a research paper to address performance indicators, while faculty in COMM 2613 utilized speech assignments. Combined results of the direct assessment are presented below in Figure 1.

Indirect assessment data were gathered [$N=347$] using the *General Education Student Survey*, which was deployed at the end of the semester in each targeted course. Criteria in the survey were systematically aligned with each of the performance indicators for the Communication Skills SLO, and student artifacts data were reported for each performance indicator using a five-point Likert scale. Specifically,

students were asked to rate their level of agreement regarding the extent to which they felt the course equipped them with the ability to achieve each of the performance indicators for communication skills. The scale ranged from “strongly disagree” to “strongly agree” with “neutral” serving as the midpoint. Student response data from this indirect assessment is presented below in Figure 2.

Results

Direct Assessment

Figure 1
Combined Report for Communication Skills
Performance Indicators Assessed In:
JMC 1013 ($n = 138$), COMM 1113 ($n = 227$), and COMM 2613 ($n = 134$)
[N=499]

<i>This course equipped me with the ability to...</i>	Do Not Meet Expectations		Partially Meet Expectations		Meet Expectations		Exceed Expectations		Total	
	%	n	%	n	%	n	%	n	%	n
a) Demonstrate proficiency in listening, speaking, writing, and reading.	5%	27	10%	49	50%	248	35%	175	100%	499
b) Explain how the context in which a message is communicated influences its interpretation.	4%	21	12%	61	54%	267	30%	150	100%	499
c) Apply appropriate forms and styles to effectively and respectfully engage audiences using a variety of media.	5%	27	22%	112	37%	186	35%	174	100%	499
d) Write using a multi-step process of planning, critiquing, editing, and revising.	4%	22	10%	48	61%	306	25%	123	100%	499

Analysis of student performance data (Figure 1, above) revealed that, on average, more than 80% of students either met or exceeded expectations for most performance indicators, although this number was slightly lower for performance indicator “c” (72%). Notably, very few students did not meet expectations for any of the performance indicators (<6% on average).

Indirect Assessment

Figure 2
Combined Frequency Distributions for Communication Skills
Performance Indicators Assessed In:
 JMC 1013 ($n = 122$), COMM 1113 ($n = 197$), and COMM 2613 ($n = 28$)
 [N= 347]

Please rate your level of agreement with each of the statements.

<i>This course equipped me with the ability to...</i>	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
a) Demonstrate proficiency in listening, speaking, writing, and reading	1%	4	3%	12	10%	35	39%	137	46%	159	100%	347
b) Explain how the context in which a message is communicated influences its interpretation	1%	3	<1%	1	8%	26	42%	145	49%	172	100%	347
c) Apply appropriate forms and styles to effectively and respectfully engage audiences using a variety of media	1%	3	1%	5	11%	39	44%	152	43%	148	100%	347
d) Write using a multi-step process of planning, critiquing, editing, and revising	1%	3	5%	18	14%	47	36%	124	45%	155	100%	347

Of the 347 students who responded to the above items (see Figure 2), on average, more than 80% reported that they agree or strongly agree that the courses equipped them with each of the performance indicators compared to very few students who reported that they strongly disagree or disagree that the courses equipped them with each of the performance indicators. Roughly 10% of students, on average, reported their level of agreement as neutral for most performance indicators, although this number was slightly higher for performance indicator “d” (14%). See Appendix A for detailed results of the qualitative analysis of student comments.

Use of Results

Figure 3 below highlights key course level recommendations for continuous improvement vis-à-vis each performance indicator in the Communication Skills SLO. These recommendations are drawn from a combination of faculty assessment of student work in the above-mentioned courses as well as analysis of students' own perceptions from the General Education Student Survey.

Figure 3
Key Recommendations for Continuous Improvement for Communication Skills

Performance Indicators	Key recommendations for continuous improvement
a) Demonstrate proficiency in listening, speaking, writing, and reading.	• Emphasize improvement on same speech using activities such as competitive speech or debate • Incorporate more in-class listening activities • Incorporate more reading assignments • Provide more writing examples • Encourage students to attend office hours and use University resources such as Writing Center
b) Explain how the context in which a message is communicated influences its interpretation.	• Emphasize ways in which cultural values influence interpretation • Provide more examples (e.g., TedXTalks, articles) that demonstrate how context influences perception • Incorporate a reflection paper to help students think more deeply about context
c) Apply appropriate form and style to effectively and respectfully engage audiences using a variety of media.	• Require the use of visual aids for more assignments • Create new in-class activities that demonstrate a wider variety of media forms • Utilize a wider variety of media forms in class to demonstrate the effectiveness of variety • Create a detailed module for teaching assistants to use to help improve students' knowledge of APA and effective formatting
d) Write using a multi-step process of planning, critiquing, editing, and revising.	• Create a separate assignment that specifically breaks down the multi-step process • Incorporate in-class workshop focused on how to make revisions as well as how to read and interpret criticism effectively • Encourage students to seek assistance from the Writing Center on campus • Consider the use of a different formatting style such as MLA • Improve the quality of feedback from both the primary instructor and teaching assistants by providing more detail

SLO 2: Quantitative and Numerical Analysis

Students will apply principles and methods of quantitative and numerical analysis to solve problems and draw logical inferences. They will evaluate and interpret quantitative and numerical information across a broad range of scientific disciplines using methods appropriate for the general education subject area.

Quantitative and Numerical Analysis Performance Indicators

At the conclusion of the general education curriculum/program, the student should be able to:

- a) analyze and interpret quantitative information from formulas, graphs, and tables.
- b) apply appropriate strategies of quantitative problem solving.
- c) express the relationship between mathematical representation and real-world application.

Participating Courses:

CHEM 1315 (Fall), CHEM 1415 (Spring), ECON 1113 (Fall), ECON 2843 (Fall), and METR 1014 (Fall and Spring)

Direct and Indirect Assessment Mechanisms:

Direct assessment data were gathered [**N=1,220**] by instructors using a detailed and well-developed rubric for the project. Departmental rubric criteria were systematically aligned with each of the performance indicators for the Quantitative and Numerical Analysis SLO, and data were reported for each performance indicator based on the number of student artifacts that “exceeded expectations,” “met expectations,” “partially met expectations,” and “did not meet expectations” per instructors’ ratings. A diverse range of signature assignments were selected to address performance indicators in the above SLO. For instance, in CHEM 1415, faculty used midterm and final exams to address performance indicators, while faculty in METR 1014 utilized summative quizzes and laboratory assignments. In contrast to quizzes and exams, faculty in ECON 1113 and 2843 utilized adaptive online homework assignments and case study assignments, respectively. Combined results of the direct assessment are presented below in Figure 4.

Indirect assessment data were gathered [**N=333**] using the *General Education Student Survey*, which was deployed at the end of the semester in each targeted course. Criteria in the survey were systematically aligned with each of the performance indicators for the Quantitative and Numerical Analysis SLO, and student artifacts data were reported for each performance indicator using a five-point Likert scale. Specifically, students were asked to rate their level of agreement regarding the extent to which they felt the course equipped them with the ability to achieve each of the performance indicators for communication skills. The scale ranged from “strongly disagree” to “strongly agree” with “neutral” serving as the midpoint. Student response data from this indirect assessment is presented below in Figure 5.

Results

Direct Assessment

Figure 4
Combined Report for Quantitative and Numerical Analysis
Performance Indicators Assessed In:
 CHEM 1315 ($n = 242$), CHEM 1415 ($n = 343$), ECON 1113 ($n = 127$),
 ECON 2843 ($n = 48$), and METR 1014 ($n = 460$)
 [$N=1,220$]

<i>This course equipped me with the ability to...</i>	Do Not Meet Expectations		Partially Meet Expectations		Meet Expectations		Exceed Expectations		Total	
	%	n	%	n	%	n	%	n	%	n
a) Analyze and interpret quantitative information from formulas, graphs, and tables.	19%	232	7%	91	53%	640	21%	257	100%	1,220
b) Apply appropriate strategies of quantitative problem solving.	29%	285	7%	70	41%	401	23%	222	100%	978
c) Express the relationship between mathematical representation and real-world application.	15%	145	7%	69	48%	466	30%	296	100%	976

Note: Performance indicators (b) and (c) were not assessed in CHEM 1315 in Fall 2022 as they are not part of the CHEM 1315 curriculum.

Analysis of student performance data (Figure 4, above) show that, on average, about three-fourths (75%) of students met or exceeded expectations in *analyzing and interpreting quantitative information from formulas, graphs, and tables* (performance indicator “a”) and *expressing the relationship between mathematical representation and real-world application* (performance indicator “c”). Notably, analysis also revealed that almost one-third (29%) of all students assessed did not meet expectations for *applying appropriate strategies of quantitative problem solving* (performance indicator “b”).

Indirect Assessment

Figure 5
Combined Frequency Distributions for Quantitative and Numerical Analysis
Performance Indicators Assessed In:
 CHEM 1315 ($n = 98$), CHEM 1415 ($n = 88$), ECON 1113 ($n = 77$), ECON 2843 ($n = 35$), and METR 1014 ($n = 35$)
 [N=333]

Please rate your level of agreement with each of the statements.

<i>This course equipped me with the ability to...</i>	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
a) Analyze and interpret quantitative information from formulas, graphs, and tables.	<1%	2	5%	18	9%	31	43%	143	42%	139	100%	333
b) Apply appropriate strategies of quantitative problem solving.	<1%	2	6%	19	12%	41	41%	138	40%	133	100%	333
c) Express the relationship between mathematical representation and real-world application.	<1%	3	5%	17	13%	42	40%	134	41%	136	100%	332

As shown in Figure 5, on average, more than 80% of the 333 students who responded to the above items reported that they either agree or strongly agree that the courses equipped them with the ability to *analyze and interpret quantitative information from formulas, graphs, and tables* (performance indicator “a”), *apply appropriate strategies of quantitative problem solving* (performance indicator “b”), and *express the relationship between mathematical representation and real-world application* (performance indicator “c”). On average, across all performance indicators, roughly one-tenth (10%) of students rated their level of agreement as “neutral”, while very few students reported that they strongly disagreed (<1%) or disagreed (<6%) with any of the statements. See Appendix A for detailed results of the qualitative analysis of student comments.

Use of Results

Figure 6 below highlights key course level recommendations for continuous improvement vis-à-vis each performance indicator in the Quantitative and Numerical Analysis SLO. These recommendations are drawn from a combination of faculty assessment of student work in the above-mentioned courses as well as analysis of students' own perceptions from the General Education Student Survey.

Figure 6
**Key Recommendations for Continuous Improvement
for Quantitative and Numerical Analysis**

Performance Indicators	Key recommendations for continuous improvement
a) Analyze and interpret quantitative information from formulas, graphs, and tables.	• Incorporate more assignments that allow students to practice analyzing graphs and tables, as well as applying formulas • Continue using Smartbooks for assignments as the adaptive properties are highly beneficial • Create workbook documents that allow students to hand draw graphs • Incorporate more in-class graph questions using a digital whiteboard • Create in-class activities that help demonstrate the link between graphs from different chapters • Continue dedicating a day in class to demonstrating the key features of Excel • Continue providing a database of Excel codes for students to use throughout the semester • Split up assessment of this topic into subtopics to ease learning curve • Incorporate group work sessions into in-class learning activities
b) Apply appropriate strategies of quantitative problem solving.	• Review exams to help students understand link between homework and test questions • Continue using Smartbooks for assignments • Continue working with McGraw-Hill to develop new real-world case studies • Continue providing additional resources (e.g., Canvas pages with overviews and examples) for students to prepare for lab assignments beforehand • Dedicate time in class to review lab assignments • Expand the availability of assignments for completion
c) Express the relationship between mathematical representation and real-world application.	• Incorporate more examples into lecture that demonstrate the relationship between lecture material and real-world application • Create a project-based assessment, although this is difficult due to large class sizes • Emphasize connection of current events/movements with lecture material • Update lecture slides to reflect current events/movements • Make explicit connections between lab and lecture material

SLO 3: Community, Culture, and Diversity

Students will demonstrate an understanding of the complexities of human culture, past and present, including an awareness of economic, environmental, political, ethical, and social issues facing both the local and global community. They will develop an understanding of the forces that contribute to the shaping of our cultural identities.

Community, Culture and Diversity Performance Indicators

At the conclusion of the general education curriculum/program, the student should be able to:

- a) Describe the role of geographic and environmental factors in shaping today's world.
- b) Summarize the process of value formation, transmission, and modification across cultures.
- c) Compare and contrast the political, social, and/or economic institutions of the United States of America and the larger global community.
- d) Explain the factors that contribute to the development of cultural identities.
- e) Demonstrate an understanding of behaviors, ideas, beliefs, and values held by persons in situations other than one's own.

Participating Courses:

MUNM 3113 (Fall and Spring), MUNM 3213 (Fall and Spring), MUNM 3513 (Fall), MUNM 3613 (Fall), and ANTH 2203 (Fall and Spring)

Direct and Indirect Assessment Mechanisms:

Direct assessment data were gathered [**N=468**] by instructors using a detailed and well-developed rubric for the project. Departmental rubric criteria were systematically aligned with each of the performance indicators for the Community, Culture, and Diversity Skills SLO, and data were reported for each performance indicator based on the number of student artifacts that “exceeded expectations”, “met expectations”, “partially met expectations”, and “did not meet expectations” per instructors’ ratings. Several types of signature assignments were selected to address performance indicators in the above SLO. For example, in ANTH 2203, faculty selected midterm and final exams to address performance indicators. In contrast, faculty in other courses selected assignments with a writing emphasis such as independent research papers (MUNM 3513) and analytical essays (MUNM 3613). Alternatively, in MUNM 3113, faculty utilized bi-weekly reading engagement assignments to address performance indicators. Combined results of the direct assessment are presented below in Figure 7.

Indirect assessment data were gathered [**N=172**] using the *General Education Student Survey*, which was deployed at the end of the semester in each targeted course. Criteria in the survey were systematically aligned with each of the performance indicators for the Community, Culture, and Diversity SLO, and student artifacts data were reported for each performance indicator using a five-point Likert scale. Specifically, students were asked to rate their level of agreement regarding the extent to which they felt the course equipped them with the ability to achieve each of the performance indicators for communication skills. The scale ranged from “strongly disagree” to “strongly agree” with “neutral” serving as the midpoint. Student response data from this indirect assessment is presented below in Figure 8.

Results

Direct Assessment

Figure 7
Combined Report for Community, Culture, and Diversity
Performance Indicators Assessed In:
 MUNM 3113 ($n = 111$), MUNM 3213 ($n = 74$), MUNM 3513 ($n = 9$), MUNM 3613 ($n = 203$),
 and ANTH 2203 ($n = 71$)
 [N=468]

<i>This course equipped me with the ability to...</i>	Do Not Meet Expectations		Partially Meet Expectations		Meet Expectations		Exceed Expectations		Total	
	%	n	%	n	%	n	%	n	%	n
a) Describe the role of geographic and environmental factors in shaping today's world.	9%	36	20%	78	51%	197	19%	74	100%	385
b) Summarize the process of value formation, transmission, and modification across cultures.	8%	37	18%	77	48%	212	26%	112	100%	438
c) Compare and contrast the political, social, and/or economic institutions of the United States of America and the larger global community.	9%	41	21%	99	45%	209	25%	119	100%	468
d) Explain the factors that contribute to the development of cultural identities.	9%	41	20%	92	47%	222	24%	113	100%	468
e) Demonstrate an understanding of behaviors, ideas, beliefs, and values held by persons in situations other than one's own.	7%	32	16%	76	50%	234	27%	125	100%	467

Note: Performance indicator (a) was not assessed in MUNM 3213 in Fall 2022 and Spring 2023 and in MUNM 3513 in Fall 2022 as it is not part of the MUNM 3213 and 3513 curriculums. Performance indicator (b) was not assessed in ANTH 2203 in Fall 2022 as it is not part of the ANTH 2203 curriculum.

Analysis of student performance data (Figure 7, above) show that, on average, about 70% of all students either met or exceeded expectations in all performance indicators assessed. Analysis of student performance data also revealed that, on average, slightly more than one-quarter (27%) of all students either did not meet expectations or partially met expectations in all performance indicators.

Indirect Assessment

Figure 8
Combined Frequency Distributions for Community, Culture, and Diversity
Performance Indicators In:
MUNM 3113 ($n = 112$), MUNM 3213 ($n = 25$), MUNM 3513 ($n = 7$), MUNM 3613 ($n = 1$),
and ANTH 2203 ($n = 27$)
[N=172]

Please rate your level of agreement with each of the statements.

<i>This course equipped me with the ability to...</i>	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
a) Describe the role of geographic and environmental factors in shaping today's world.	1%	2	2%	3	9%	15	41%	71	47%	81	100%	172
b) Summarize the process of value formation, transmission, and modification across cultures.	<1%	1	0%	0	10%	14	34%	49	56%	81	100%	145
c) Compare and contrast the political, social, and/or economic institutions of the United States of America and the larger global community.	<1%	1	3%	6	13%	23	42%	73	40%	69	100%	172
d) Explain the factors that contribute to the development of cultural identities.	1%	2	1%	2	5%	9	32%	55	60%	104	100%	172
e) Demonstrate an understanding of behaviors, ideas, beliefs, and values held by persons in situations other than one's own.	1%	2	<1%	1	5%	9	30%	52	63%	108	100%	172

Note: Performance indicator (b) was not assessed in ANTH 2203 in Fall 2022 and Spring 2023 as it is not part of the ANTH 2203 curriculum.

As shown in Figure 8, of the 172 students who responded to items (a), (c), (d) and (e), as well as the 145 students who responded to item (b), on average, almost 90% reported that they agree or strongly agree that the courses equipped them with each of the above performance indicators compared to very few students (<4%) who reported that they strongly disagree or disagree. Roughly 10% of students reported their level of agreement as neutral for most performance indicators, although this number was slightly lower for performance indicators “d” and “e” (5%). See Appendix A for detailed results of the qualitative analysis of student comments.

Use of Results

Figure 9 below highlights key course level recommendations for continuous improvement vis-à-vis each performance indicator in the Community, Culture, and Diversity SLO. These recommendations are drawn from a combination of faculty assessment of student work in the above-mentioned courses as well as analysis of students' own perceptions from the General Education Student Survey.

Figure 9
**Key Recommendations for Continuous Improvement
for Community, Culture, and Diversity**

Performance Indicators	Key recommendations for continuous improvement
a) Describe the role of geographic and environmental factors in shaping today's world.	• Create prompts to guide weekly assignments to facilitate deeper reflections by students • Incorporate more relevant reading assignments throughout the semester • Integrate questions that specifically address the role of geography and environment in the shaping of musical genres
b) Summarize the process of value formation, transmission, and modification across cultures.	• Introduce a wider variety of contemporary case studies • Incorporate activities that include cross-cultural aspects • Present more personal narratives from members of the community and their system of values • Incorporate more assigned readings from the anthropological literature generally • Emphasize how differences in value formation influence politics
c) Compare and contrast the political, social, and/or economic institutions of the United States of America and the larger global community.	• Incorporate an ethnographic exercise where students interview peers from different cultural contexts • Provide more examples of artistic responses from a greater global perspective • Introduce more modern Native American artists whose messages deal with current political and social issues • Incorporate more relevant assigned readings • Continue to create opportunities for comparative analysis in diverse topic areas
d) Explain the factors that contribute to the development of cultural identities.	• Assign hands-on ethnographic activities to encourage reflection of students' own cultural and racial identities • Modify prompts for assignments with questions that direct students' perceptions to various aspects of identity • Provide more applied examples of how cultural identity is formed
e) Demonstrate an understanding of behaviors, ideas, beliefs, and values held by persons in situations other than one's own.	• Incorporate self-ethnographic activity where students interview peers from different cultural contexts • Provide more detailed and relevant feedback on exams • Encourage more insiders' perspectives from students in the class who are originally from the region or countries being discussed • Incorporate more online discussions through Canvas that facilitate comparison and self-reflection • Include more small group discussion in class • Present worldview questions in every unit to facilitate learning of new perspectives • Continue to invite guest presenters to speak to the class

SLO 4: Critical Analysis and Scientific Reasoning

Students will demonstrate the ability to integrate and analyze information from multiple perspectives, consider new solutions, and solve novel complex problems using methods appropriate for the general education subject area.

Critical Analysis and Scientific Reasoning Performance Indicators

At the conclusion of the general education curriculum/program, the student should be able to:

- a) demonstrate reasoning by deduction, induction, and analogy.
- b) apply scientific methods as appropriate for the general education subject area.
- c) differentiate between scientific and non-scientific explanations.
- d) compare alternative explanations and their implications.
- e) summarize evidence presented in an argument.
- f) identify examples of the interaction between science and societal change.
- g) explain how the social and historical context in which a theory emerged influenced its development.

Participating Courses:

METR 2603 (Fall) and HES 2823 (Fall and Spring)

Direct and Indirect Assessment Mechanisms:

Direct assessment data were gathered [**N=1,594**] by instructors using a detailed and well-developed rubric for the project. Departmental rubric criteria were systematically aligned with each of the performance indicators for the Critical Analysis and Scientific Reasoning SLO, and data were reported for each performance indicator based on the number of student artifacts that “exceeded expectations”, “met expectations”, “partially met expectations”, and “did not meet expectations” per instructors’ ratings. Faculty in both METR 2603 and HES 2823 selected similar signature assignments to address performance indicators in the above SLO as weekly quizzes and final examinations were primarily utilized. Combined results of the direct assessment are presented below in Figure 10.

Indirect assessment data were gathered [**N=315**] using the *General Education Student Survey*, which was deployed at the end of the semester in the targeted courses. Criteria in the survey were systematically aligned with each of the performance indicators for the Critical Analysis and Scientific Reasoning SLO, and student artifacts data were reported for each performance indicator using a five-point Likert scale. Specifically, students were asked to rate their level of agreement regarding the extent to which they felt the course equipped them with the ability to achieve each of the performance indicators for communication skills. The scale ranged from “strongly disagree” to “strongly agree” with “neutral” serving as the midpoint. Student response data from this indirect assessment is presented below in Figure 11.

Results

Direct Assessment

Figure 10
Combined Report for Critical Analysis and Scientific Reasoning
Performance Indicators Assessed In:
 METR 2603 ($n = 78$) and HES 2823 ($n = 1,516$)
 [$N=1,594$]

<i>This course equipped me with the ability to...</i>	Do Not Meet Expectations		Partially Meet Expectations		Meet Expectations		Exceed Expectations		Total	
	%	n	%	n	%	n	%	n	%	n
a) Demonstrate reasoning by deduction, induction, and analogy.	5%	4	10%	8	24%	19	60%	47	100%	78
b) Apply scientific methods as appropriate for the general education subject area	19%	284	11%	167	20%	300	50%	765	100%	1,516
c) Differentiate between scientific and non-scientific explanations.	3%	42	2%	32	44%	707	51%	811	100%	1,592
d) Compare alternative explanations and their implications.	21%	16	21%	16	21%	16	38%	30	100%	78
e) Summarize evidence presented in an argument.	21%	16	29%	23	21%	16	29%	23	100%	78
f) Identify examples of the interaction between science and societal change.	8%	125	5%	75	30%	468	58%	926	100%	1,594
g) Explain how the social and historical context in which a theory emerged influenced its development.	8%	129	7%	110	30%	475	55%	880	100%	1,594

Note: Performance indicators (a), (d), and (e) were not assessed in HES 2823 in Fall 2022 and Spring 2023 as they are not part of the HES 2823 curriculum. Performance indicator (b) was not assessed in METR 2603 in Fall 2022 as it is not part of the METR 2603 curriculum.

Analysis of student performance data (Figure 10, above) revealed a wide range across performance indicators for the percentage of students who either met or exceeded expectations. For example, while about 70% of students either met or exceeded expectations for performance indicator “b”, this number was substantially higher for performance indicators “f”(88%), “g” (85%), and performance indicator “c” (95%). Notably, almost one-fifth (19%) of students did not meet expectations for performance indicator “b”, while very few students (3%) did not meet expectations for performance

indicator “c”. As noted above, performance indicators “a”, “d”, and “e” were not assessed in HES 2823 in Fall 2022 and Spring 2023.

Indirect Assessment

Figure 11
Combined Frequency Distributions for Critical Analysis and Scientific Reasoning
Performance Indicators In:
HES 2823 ($n = 237$) and METR 2603 ($n = 78$)
[$N=315$]

Please rate your level of agreement with each of the statements.

<i>This course equipped me with the ability to...</i>	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
a) Demonstrate reasoning by deduction, induction, and analogy.	2%	5	2%	7	14%	43	39%	124	43%	136	100%	315
b) Apply scientific methods as appropriate for the general education subject area	1%	2	3%	8	11%	25	41%	97	44%	105	100%	237
c) Differentiate between scientific and non-scientific explanations.	2%	5	2%	7	8%	26	36%	114	52%	163	100%	315
d) Compare alternative explanations and their implications.	2%	5	4%	14	10%	32	36%	113	48%	151	100%	315
e) Summarize evidence presented in an argument.	2%	7	2%	6	16%	51	33%	104	47%	147	100%	315
f) Identify examples of the interaction between science and societal change.	2%	6	4%	14	10%	31	34%	108	50%	156	100%	315
g) Explain how the social and historical context in which a theory emerged influenced its development.	2%	7	4%	13	15%	46	34%	107	45%	142	100%	315

Note: Performance indicator (b) was not assessed in METR 2603 in Fall 2022 as it is not part of the METR 2603 curriculum.

As shown in Figure 11 (above), of the 315 students who responded to the above items, on average, more than four-fifths (>80%) reported that they agree or strongly agree that the courses equipped them with each of the above performance indicators compared to very few students (on average; 5%) who reported that they strongly disagree or disagree that the courses equipped them with each of the above performance indicators. Notably, roughly 15% of students reported their level of agreement as neutral for several performance indicators (“a”, “e”, and “g”), although this number was reported as low as 8% for others (“c”). See Appendix A for detailed results of the qualitative analysis of student comments.

Use of Results

Figure 12 below highlights key course level recommendations for continuous improvement vis-à-vis each performance indicator in the Critical Analysis and Scientific Reasoning SLO. These recommendations are drawn from a combination of faculty assessment of student work in the above-mentioned course as well as analysis of students' own perceptions from the General Education Student Survey.

Figure 12
**Key Recommendations for Continuous Improvement for
Critical Analysis and Scientific Reasoning**

Performance Indicators	Key recommendations for continuous improvement
a) Demonstrate reasoning by deduction, induction, and analogy.	• Incorporate more problem-solving examples during lecture • Utilize real data when possible • Incorporate more time for in-class discussion
b) Apply scientific methods as appropriate for the general education subject area	• Adjust grading rubrics to emphasize critical thinking • Add teaching tips for instructors to provide in-class guidance on critical thinking • Incorporate practice questions early in the course to build lower-level skills before moving to higher-level applications
c) Differentiate between scientific and non-scientific explanations.	• Create a group term project that focuses on reading and critiquing a popular book on topics such as climate change • Add review of previous lecture before beginning new material • Have instructors write new quiz/review questions to keep a fresh database for exams
d) Compare alternative explanations and their implications.	• Provide more examples of diverse situations in lecture • Incorporate more of these concepts into exams and quizzes
e) Summarize evidence presented in an argument.	• Create a group term project that focuses on reading and critiquing a popular book on topics such as climate change • Incorporate more argumentative type problems in homework assignments
f) Identify examples of the interaction between science and societal change.	• Continue inviting social scientists for guest lectures in class • Incorporate audience response questions to emphasize key points
g) Explain how the social and historical context in which a theory emerged influenced its development.	• Incorporate more historical context into lecture • Incorporate audience response questions to emphasize key points

Appendix A

Qualitative Analysis for Academic Year 2022-23

Analysis of Comments

Communication Skills: JMC 1013, COMM 1113, COMM 2613

Category: Class Environment

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- Effectively communicating the lesson plan every class, as well as making the classes fun and interesting to listen to. - Helps students grasp how to take effective notes from a conversation/presentation of meaning and importance. - This course is very pro mental health and has chill, nice people in the department. I really enjoyed mass lecture and the discussion. - Small and easy environment to ask questions in the discussion class. - The strengths of this course are the importance of informing students about the importance of communication, encouraging students to practice healthier communication skills, and obviously preparing students for higher level communication classes. - The examples given in class, allows for create thinking, and listening skills. - Some of the strengths of this course were the in-class activities because they were different than anything I've done in my other classes and it made class really fun, the freedom we had with our speech topics. - Teaching communication skills in a group setting.	- Better discussion - Shouldn't be mandatory attendance. - Maybe give longer time to write notes in class. - More student interactions. - There needs to be better ways to attend class or do homework. If you are sick, something is going on in your life, whatever, it doesn't matter. You will ultimately fail this class. - I did not find asking questions at the end of every unit to help me very much. It just felt like I was trying to come up with a random question that I did not really have in the first place. - Maybe some of the questions that we ask could be answered or gone over in lecture or discussion time. - There should be more speech-related activities rather than just speeches in themselves. For example, more aspects such as impromptu speaking, which was low stakes, helped take the stress away while still being a good way to get more comfortable speaking in front of others. - The only thing I might suggest is a different route for the reading check besides the question. In some occasions, I felt like I was just writing down the question to get the credit.

Category: Course Content

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• Good lectures that are understandable. • This course is very structured and has mandatory connect assignments. Also includes discussion classes. • The lectures supplement the textbook very well, as do the discussion sections. The activities that we do in the discussion section help illustrate exactly what the textbook is saying. • I feel the content was interesting and applicable to the real-world. • Education on public speaking related topics. • I think the lectures are very engaging. I appreciate that it is not so lecture heavy like many other courses, but you are still learning a great deal of important information.	• Adding more weekly assignments. • I think we did too many speeches and could have skipped the units on like speaking online because we all knew that stuff since we've been speaking online for years. • Introduce the topics of verbal and nonverbal delivery earlier in the semester.

Category: Course Materials

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The assignments were helpful in my critical thinking of this topic. • Listening, writing. • Although this course has a lot of material to cover, I found the pace to be just right, and the order was quite logical. Additionally, I thought that the material was divided up by exam in a way that made the most sense given that the relationships between the chapters on each exam were evident. • The discussion part of this course helped me a lot. The research project was also a good experience. • The smart books are also helpful, just a tad tedious. • I also think that the material is very clear • The experience of giving speeches is invaluable and the best part of the course.	• I felt that some assignments within the discussion were unnecessary and unrelated to Comm and were simply busywork. • I think the course would be improved with more quizzes so that we would have been tested on subjects before the exam. • Additional finer points of the lecture need to be included in slide notes from the macro slide bullet points. • This course is quite lecture and textbook-heavy, which is fine, but I think a good addition to the course could be adding more visual or "real-life" examples of many of the topics that are discussed within this course. • Maybe include some questions for the exams so we can see what the questions are like. • I would recommend having to read an article and discuss. • The book seemed to be a bit repetitive. • There was just a lot of material that we covered and sometimes it felt like too much between the book material and speeches.

Category: Course Structure/Organization

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• This course seems well organized and covers lots of material in the lecture with plenty of resources accessible on canvas. • The strengths of this course are that it is very open, as I think having open discussions every class with fellow classmates and the professor has provided me with a sense of comfortability with communicating openly with everyone. • It involves research along with. • I enjoyed the structure of having one big lecture and two discussions. It helped me understand how to apply what we were learning to real-world scenarios instead of just listening to a lecture and writing notes. I also learned how to think critically and write in a different form than what I was used to. • The lecture is designed to be detailed without being overwhelming, which helps students learn. • It was organized and structured! • I really enjoyed the final speech process and how that translated from my writing an organized paper to my giving an organized speech. • Enough homework and textbook Information. • Good at doing hands on activities. • Engaging, perfect time frame of lectures not too long and not too short, good balance between lectures and homework assignments. • The strength of this course is the lecture hall. Most lecture halls cannot hold my attention but this one can.	• Maybe creating a platform specifically for this class with detailed information for the entire semester. • I think the discussion section of the course could be improved a little, there were a lot of readings in a different book and assignments that did not improve my learning of the information in this course. • This was a great course only small tweaks to scheduling papers and speeches is needed. • I think having more lecture periods a week would be better for learning and digesting the information. • More variety in activities. • I believe this course could use more lecture time on “how to’s” rather than “don’t do’s”. • Should be better at showing due dates. • I think that instead of having four major tests a semester, split the assignments up into different smaller assignments as well, so the tests so weigh as much. • Lecture time was too short. • Make tests questions available online as well as in person. • Make canvas more accessible for the lecture section. • I think the tests pieces should be clearer and more specific, as many of the questions could go a multitude of ways based on perspective. • Honestly just work a group project.

Category: Difficulty

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• Challenging you to think harder. • I think my strengths are my time management and interest in this course. I worked very hard to get a good grade and read all my assigned work. • The lecture is engaging, content was super hard. • This class presented the material in a very easy way to comprehend. Everything that we learned made sense when in its unit and was easy to comprehend/apply to real life. Professor Banas also made lecture very enjoyable and kept the class engaged.	• I would recommend better instructions and more emphasis out on the final paper and final presentation. Some students aren’t extremely familiar with APA or some procedures. • Between the first and second exams, I thought that it was awkward that we were learning a chapter in the lecture that was different than the chapter we were learning in the discussion section. We were also expected to form questions about the chapter from the lecture that we had not yet had an opportunity to read for ourselves, which I found to be unnecessarily complicated. • Make the notes clearer and easier to understand. • I felt the lectures and assignments were easy, but the exams were surprisingly difficult. • I feel as if too much weight is put on the Discussion class instructor/TA with grading and prepping students

	for upcoming projects and presentations. It is hard to enjoy a class when everything relies on the TA to judge hard work and dedication of a student. • Better reviewing for the tests, I feel as I don't know the concepts well enough to use them in examples. • The exam time limits - some people already have bad test anxiety and with such a short window it can really affect them. • The exams are very weirdly worded and the textbook has some interesting wording as well. • The late project policy is unnecessarily brutal, obviously something is needed but an immediate half credit is a bit harsh.
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Category: Professor

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• I think that the strengths are the amount of involvement from instructors. • It is very easy to communicate with the TA and get any questions that you might have answered. • The professor was very entertaining and easy to listen to. This made going to class not only easy but fun as well. • It woke me up in the morning because Banas was so energetic and enthused to be there. • The lessons are understandable because the professor connects them to real life situations. • The professor loves his job. • The professor's knowledge. I like how the instructions were always clear on what we needed to do for the class. • Learning how to correctly study, professors do a very good job of helping us understand topics and relate them back to something relatable and common. • Great at creating visuals and examples for the various terms to break them down and help students understand them. • Teacher was very realistic with what they told us. This helped me to be more confident in giving speeches.	• Please re consider all TA's, my TA was a little too plain for a communication class. • Stop trying to teach class about your days in college and prepare us for the tests. • Better TA's.

Category: Relevance

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• We get to learn about all the specifics of how and why we communicate. Learning the specifics of what it is to communicate with one another with the advantages and disadvantages. It will help with all future courses and life. • It's very relatable, and has a great timeline throughout the course, and it allows you to create your own meaning of communication. • Help prepare you for real life presentations and speeches following in your academic and professional career. • This course discusses every form of communication, both verbal and nonverbal. It essentially gives the student keys to understand, interpret and effectively transmit messages. This course also communicates the larger picture of what communication is to us as a species. • Learning my strengths and weaknesses within communication and being more effective in my conversations. • Teaching students about effective leadership. Gaining confidence in public speaking. • This course really prepared me for how to speak with people from different backgrounds and cultures, and how we might communicate differently. • We can learn how to control our feeling in front of people.	• I feel like we didn't discuss communication through different forms of media as much, just a little about social media. I think it would be interesting to get more of a focus on how media types can affect communication. • Continue using life examples because they help a lot.

Quantitative and Numerical Skills: CHEM 1315, CHEM 1415, ECON 1113, ECON 2843, METR 1014

Category: Skill Development

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• Being able to show change, analyzing the graphs and evaluate Change on a graph. • My strengths in this course is my ability to learn and remember formulas and use them in excel and real world problems. • Data interpretation skill growth. • My strengths in this course would be my work ethic and my understanding how to be able to determine the outcome of certain topic. • The number of ways there are to really perfect all the skills needed to do well in the class including office hours, practice problems, and readings. • Helped build abilities in critical thinking and studying skills that are different from high school. • I am good at arithmetic. • Note-taking. • The class is good for analyzing data and writing lab report, which is very beneficial for students who want to do research. • Problem solving skills. Learning big concepts and being able to figure out how to apply them to difficult calculations.	• A possibility on spending more time on the harder sections or on graphs. • Better explanation of graphs.

Category: Class Environment

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The professor brings lots of energy to each lecture, makes the students laugh, and keeps the lectures interesting. This makes for a class students want to go to and learn. • Some strengths of this course are that students can tell the professor cares about the topic, so we are motivated to also care for it. The lab TA's are very helpful and quick to respond when help is needed. • Teacher-Student relations. Comfortable classroom environment. • You really get to dive deep into individual aspects of broad things to help you have a full understanding.	• Make attendance mandatory. According to the statistics, the students who came to class were more successful than those who failed to attend. • More one on one helping. • Maybe more interactive experiences and lessons. • Maybe do some fun things instead of just lecture with notes every day. • Maybe more group discussion. We did not converse with classmates or work on group projects much. I feel like this can be beneficial to my student learning.

Category: Course Content

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• This course does a good job of teaching the flows of the market and helping me understand economics. • This course teaches the importance of the market and choice. • It teaches the basic understandings of Macro Econ without over explaining concepts through equations. Concepts can get lost in students' thinking when we have to worry about equations and memorization, this course allowed us to learn and understand the class rather than worry about the math. • The strengths is that the course is very thorough and covers a wide variety of information. • The content within the course can lead to exploration outside of the classroom.	• There could be some kinetic learning imbedded into the course for a better learning experience. There could be stimulations acting as the FED or the commercial banks and have the participant buy bonds or pay interest rates. This allows to have all types of learning in the curriculum. Reading graphs as the visual learning, the lectures as the auditory learning and the stimulations as the kinetic learning. • I would say maybe add more of the calculations/mathematics into the course. • I don't know if there is a course that teaches about credits, taxes, mortgages, investments, etc but I would like to learn these concepts as well. • Maybe do case studies? It would help HES students especially by allowing us to deeply apply what we've learned, and problem solve.

Category: Course Materials

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The curriculum in this course has helped me to understand how the economy as a whole functions, it has been incredibly interesting to take this course post pandemic to see real world examples of the topics we discuss in class. • Direct, useful information. I feel well prepared for the exams. • The strengths of this course are the tests being online, homework being online, and lots of extra points for grabs. • The access you get to material over canvas. • Hands-on experience, Theory behind that, personal assistance of the teacher. • There is a lot of supplementary material. • Time management!! It is also good for attendance. • The material is presented in a way that it easy to learn. • I believe that the textbook is perfect for this course and explains topics in some detail but not too much. Furthermore, the information covered is extremely applicable for many situations in life. The ability to work on the information over the weekend is appreciated.	• If each exam could have their own review. • Make tests more accurate to course material. • I think more homework honestly. • Having quizzes or variety of homework that effected our grade would be beneficial as most of the grading comes from our exams. • Provide more interactive opportunities for students to interact with the content that they learn. • I think having more worksheets and such to have different way of teaching material. It becomes less repetitive. • The addition of video examples of particular topics in action could be helpful. • Lower the amount of material that needs to be taught. • Slow down on some of the material.

Category: Course Structure/Organization

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The organization of assignments, lectures, and office hours. The course is well-organized, and the textbook is in depth and very useful. • The course was presented in a simple, approachable, and easily understandable manner. • Easy to follow and notes are very helpful to refer back to. • Many opportunities to seek out tutoring before exams. Great professors with labs that tie into the lectures. • I think the strongest part of this course is that the information is available before class, it's important to have the information readily available for students who need it outside of class. • The flexibility of the work and the canvas page is really organized. • The concepts are broken down well and explained thoroughly. There are many opportunities for practicing new skills as well as asking questions to clarify understanding.	• Extra optional online practice over the chapter material. • Offer more sections for this course. • I think making the online tools such as top hat and McGraw Hill more accessible would be nice. If there was an alternative to the paid subscriptions, I think that would be nice. This class is the only one I have that uses these tools and so it's expensive to have to buy these tools for one class. If an alternative is not possible, I think that adding a disclaimer on the course description would be good because then students can take multiple classes that use these tools and not have to pay for them over and over again because they didn't know to plan to take them at the same time to get the best value out of these tools. • Sometimes lectures everyday gets tiring so more in class activities could be helpful.

Category: Difficulty

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• It's pretty comprehensive and simply for how complex a topic it's covering. • Homework is easy. • I really like the lectures, I think Dr. B is good at showing the material. I also like how there isn't much homework, so it makes coming to class more interesting. • The lectures and test reviews are good preparations for the exams, making it manageable to study for the exams. • I am good at the calculation problems, but not applying information to new ideas. • Tests are very strong in difficulty. • The course was fairly hard for me but I would say it prepares you for the next chem very well. • I enjoyed the labs but the ta did not provide a lot of information regarding the lab or the chemicals being used. • This course is very flexible. The workload is doable and there is plenty of time throughout the week to do it. There are opportunities to do extra credit and the work is not difficult if you put in the effort.	• A possibility on spending more time on the harder sections or on graphs. • The subject itself is a little difficult to get. • Maybe a little smaller class sizes, because with around 700 people it's hard to build a relationship with the professor. • Studying for the exam is hard I would recommend the teacher to give more time to not just go over the study guide but to give more helpful things to use when taking the exam. • Making the tests more equal for everyone. I don't like how the test comes from a test bank of over 1000 questions, so each person has a different exam with different questions. I think if the questions were hand selected, it would make it more equal and fairer, and be a better representation of the class learning. • Stop lecturing directly from the textbook and relying on PowerPoint slides. Change exams to better reflect students' capabilities. Stop using computer-generated exams that don't even align with the practice exam and make them yourself. • The course goes very quickly and it can be hard to keep up. The lab portion, while taught by a great TA, wasn't always clear. Some of the material in the labs was not covered in lecture or not yet covered. Labflow's questions were sometimes repetitive or superfluous. • Exam times are a little short. • The professor is nice but the professor teaches the course as if we already know all the material before hand as if we had already taken the course. This made it very hard to even learn the material in the first place and doing the homework's. The exams were not like any of the practice problems provided or any of the practice exams. The average of the tests were a C or lower which seems a little ridiculous for an introductory class. The TA in the lab did not provide us any safety information prior to the labs regarding chemicals and gloves. I would ask my TA a question and it would completely conflict with what my professor would tell me. • The labs are all written terribly. Most of them have at least a couple confusing sentences that can be interpreted in different ways causing you to make a mistake in the lab. Sometimes my lab ta didn't even know how to interpret the wording. • The homework was hard, and we needed to be shown how to do them. • I feel like the tests should have more calculation-based questions rather than concept based questions as that's what we focus on more in class. • The lab sections feel very arbitrary, and do not feel like they reinforce any of the type of material we are being tested over.

	• I clicker questions would preferably have a bit more time for them. • Having to be physically present for a lab when it's completely online kinda sucks.
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Category: Professor

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The Teacher does a great job of giving the information in a digestible manner. I appreciated the practice exams. • The professor teaches her lecture at an excellent pace and ensures that a topic is fully explained and understood before moving on. Also, the homework's and learning curves properly prepare us for exams. • The teacher interacts with the class and was able to give out helpful strategies for the class. • The professor's grading criteria was the strength. • Accessible office hours.	• If there was any way we could do problems in class with immediate feedback being given by the professor instead of just long lectures, I think students would stay much more engaged.

Category: Relevance

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The strengths are being able to apply the curriculum in real life, able to analyze and understand the material through different lenses, and also see how the economic policies have impacted the world differently throughout history. • The course was easy to understand and had many real-world applications. We combined math, graphs, and principles to understand real economic concepts. • It helped me learn about real world issues about money and how money works, which can help me utilize the information to become wealthy. • Gives, what I hope, is a solid foundation for future science classes. There is a lot of material and resources that we can use to learn outside of class.	• Provide more information on what to apply information from the lecture to exams or life.

Community, Culture, and Diversity Skills: MUNM 3113, MUNM 3213, MUNM 3513, ANTH 2203

Category: Skill Development

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- Thinking outside the box and putting yourself in another person's shoes to understand why they are the way they are. - This course makes you think critically about music theory and origins of different types of South Asian music. It helped understand culture at a deeper level, and it also helped with critical thinking and writing skills.	

Category: Class Environment/Organization

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- The lectures, in class videos and participation activities. - More hands-on activities tend to keep students engaged rather than sitting in lectures every week. - Maybe sometimes it would be nice to be able to do discussion posts or be able to anonymously interact with students and their opinions. - I enjoyed this course because it was set up in a way to really learn and absorb the material. The environment was very encouraging, and instead of getting points taken off for not understanding a topic, the instructor would attempt to re-explain it in a way where the student might better understand. - Using real life stories to convey major points.	- I think an online discussion aspect would be helpful, so we can learn how other students interpret the music and cultures. - I feel like this class would be more fun and interesting if it were in person. I feel that there are so many ways to make the learning more meaningful and engaging if you could talk to other students about what they are learning. I still learned a lot, but it would have been nice to talk to other students about what they were getting out of the class also. - Between a changed concert review date and music reviews it was difficult to keep up with material for class discussions. I think that the discussions and the level of interaction were better in the beginning of the semester and believe this is in part to having worried less about accumulated writing assignments. - This course could have more group work. - I think it would be awesome if we had some speakers come and talk about different topics!

Category: Difficulty

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• I like that it's an online course and that you can do assignments at your own pace. • A lot of unnecessary readings.	• The documents which are uploaded in Canvas aren't clear. It was sometimes hard to read. • The only think I could possibly think of is maybe shortening the readings a little bit. • Engagement questions (not the engagement activities) be a little bit less complicated in what they are asking. • This course has a lot of assignments per week, and the papers are scheduled very close to each other, which can be overwhelming especially near the end of the semester. Maybe changing around the schedules and having some big assignments be earlier rather than all at the end. • As a new student essentially coming into the course blind, with no guess as to what will be covered in the course, I found it hard to really know what was truly important. I didn't know which details should stick with me and what isn't as important. • The assignment structure was spaced in a way that the latter half of the semester felt much heavier on writing compared to discussion. If the reviews done for this class were spread evenly over the course of the semester, I think I would have felt less overwhelmed especially during the final paper time. • Too much writing. • Course load is very tiresome.

Category: Course Content/Material

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The coursework is intriguing and offers an education that I believe to be beneficial no matter what course of major. • The number of interesting topics and the fact that you could just immerse yourself into them without getting bored. • The diversity in content and examples from across the globe. • Self-paced, course structure, and content quality. • The book that was selected for my course did a really good job at looking to other cultures and places to see in what ways we can be similar and how we can be different. • I enjoyed all the videos incorporated into the class material - i find this a captivating way of learning. • The course has a very strong focus on the different systems that interact within communities that create discrimination, and also how discrimination lays the foundation or affects these systems and identities.	• Fewer readings with more focus on the specific areas of interest would be my recommendation. The vast amount of terminology also was a steep learning curve. • I feel like that reasoning should be explained at the beginning of the course or the course should be called a different name entirely. • Need more quizzes. • Add more discussions for students' interaction.

• The readings are very helpful and interesting. The tests and assignments are a reasonable amount of work. • Truly engaging material and I never found myself bore with any assignment. • Engaging lectures and meaningful content.	
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Category: Course Assignment

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• One of the strengths of this course is how thought-provoking the questions on the assignments are. Even though some of the assignments feel like busy work, they still force the student to think deeply about their answers and learn the material. • Easy book to navigate. The homework actually promotes learning rather than memorization. • The professor also had a few special assignments that I believed helped me think more about the material, rather than just at a surface level, it went deeper and made me look more at things in music, even today's modern singers. • I think there was variety in the assignments we had to do which made them interesting and non-repetitive. • I feel like the assignments actual make you read and help you understand more about the course and the diverse culture around the world.	• I think having more fun/creative projects or assignments that involve the students to create their own presentation about the material could better student learning because these projects allowed me to learn the material without being bored by the questions. • Potentially more feedback for essays and a different activity besides quizzes and essays. • Make the assignments take less time to complete. Some assignments I didn't take the time to do simply because it was either complete a 10 point assignment for this class or a 25 point assignment for another. • I would like to have the assignment list updated by month rather than getting assignments added to canvas like a week before because it helps me better plan my schedule and leave time for the class.

Category: Personal Growth

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The knowledge and awareness of things you don't really think about. • It helps with getting a better understanding of other people's cultures and their ideas. • The written responses were immersive and allowed us to be creative and properly take in and interpret information. • I believe the strengths of the class include being able to listen to the listening guides and looking at the descriptions of them because there is lots of useful information in those as well as a lyric breakdown of the songs and their meanings. • Inclusion and education on cultures around the world and how they differ from culture in America. • Learning about the modification of other cultures. • I was able to learn a lot about the different cultures of Native American tribes without being overloaded with work.	

Category: Professor

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The professor is always available and truly cares about your input and well doing in his class. • The professor's teaching method. • I really liked having the instructor notes in the reading. It helped me understand and learn more. • The professor's ability to change up the class for the students. • There is a lot of content that needs to be covered, and the professor makes a good attempt to respectfully cover it all. There is adequate depth to the content and the professor uses a lot of interesting examples to make sure students even without a music background can relate. It is cool to also see how culture intersects with music. • Feedback with comments on each assignment is great. • Communication, clarity of understanding the taught materials, new knowledge of different cultures.	• Instructor's notes throughout the chapter were very inconsistent and I normally did not have access to them.

Critical Analysis and Scientific Reasoning Skills: METR 2603, HES 2823

Category: Skill Development/Personal Growth

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- This course challenges the students to practice critical thinking skills. - It has taught me how to eat better and be more mindful of what goes into the food products I eat. - Note-taking. - Getting knowledge about nutrients in food.	

Category: Class Environment

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- I loved how engaged and involved we are encouraged to be every day through the semester to ask questions and speak out on topics we are learning about. The quizzes each week helped me piece together information learned over each week to further my education of the topics being covered. - Teacher-Student relations. Comfortable classroom environment. - This course went into depth about each topic covered and gave thorough instructions.	- Attend class and ask questions when confused. - One thing that could add to this course is more interaction. - Students are encouraged to ask questions but many times when they do they are told to look back through the slides rather than just answering the students question. It would be more helpful to answer the students' questions so they can clear any confusion before moving on in the lecture. - The course could improve on encouraging collaboration. - Turning the lights off may help people see the PowerPoint but it also makes me fall asleep. - The lectures were boring. They could be made better by make them more interactive.

Category: Course Content

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- The content, there is a lot, but all is taught so well. - As a student, I personally am a fan of lectures, and this class was very lecture based. - The course is a strong course that covers all the topics needed. - The content within the course can lead to exploration outside of the classroom.	- More engaging topics. - Change the schedule so that the course can cover winter weather and hazards to aviation. - Maybe do case studies? It would help HES students especially by allowing us to deeply apply what we've learned and problem solve.

Category: Course Materials

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
I loved the layout of all the information, it was very easy to find what I needed when studying and doing the homework problems. Also, the information was displayed with multiple examples which helped me understand certain concepts that I couldn't understand at first. I also really liked the use of analogies to help with comprehension! The Homework's are very helpful too, they help review/re-learn and solidify the concepts and they relevant in the exams. Material is engaging, Good material coverage, it covers a lot of different topics but all of them can connect to each other. The lecture slides are very informative and the recordings to look back on are always helpful. The variety of assignments that makes easier to remember the material. The course is equipped with necessary materials that educate students on essential nutritional information that all humans should be aware of.	• More comprehensive assignments. • The only negative thing about lectures is that this was the only thing we did in class. Even though I like lectures, I might prefer some more demonstration other than what's presented on the slides. • Having a practice exam might be helpful for some students. • The only recommendations would be to readjust the material lectured to wean out any unnecessary or overly complicated parts. • More videos on the complex concepts. • More interactive activities in class and outside, through group projects or online simulations. Additionally, in-person experiments would make this material more quantitative and easier to understand. • I would love more homework honestly. I've been trying to bring my grade up and it's difficult due to the few points available besides tests and the occasional homework. • I don't like the textbook. • Varied ways of learning so that we are not looking at the same types of PowerPoints during every class of the semester.

Category: Course Structure/Organization

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• Lessons are structured and easily accessible. Expectations are clearly stated. • Having a variety of ways for students to access the lecture, for example, zoom(live), recorded video, transcript, and helpful presentation slide ("key slides"). • How well the course is structured, the frequent reminders, making sure the students retained the information, and just the professor being extremely comforting throughout the semester. • The flexibility of the work and the canvas page is really organized. • I loved how the lecture notes were posted. It was also very organized, which was helpful. Seeing the modules set up by week was very useful.	• Friday quizzes could be given in the start of class so people aren't moving around leaving as a distraction. • This class is overly complicated and designed very poorly.

Category: Difficulty

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
• The course required me to assess my time more to studying as it's a lot of information. • I felt like I gained nothing from this course. • It makes hard concepts easy to understand. • It's a useful class that everyone should take, even though it is time-consuming it helped with my self-discipline. • This course is very flexible. The workload is doable and there is plenty of time throughout the week to do it. There are opportunities to do extra credit and the work is not difficult if you put in the effort. • The weekly quizzes worked better for me rather than having big midterms throughout the semester. • I was very excited to take this course because I am very interested in nutrition, but I honestly was disappointed. Not very well explained, if you want to learn anything you'll have to do it yourself.	• I would recommend that the homework be more like the material on the exam, rather than practices that we do not touch outside of the homework, thus making it more meaningful. • If we had more real-life examples and more time to be hands on with what we're learning I think I could've done better. it seemed like a very rushed class. There needs to be some modules removed to ensure we have more time on each module. • The slides were good, however, I felt as though more complicated information and concepts could be simplified slightly more. • Sometimes the information we are learning can be very dense and hard to understand. • The tests in this course cover a lot of material all at once, making them difficult to study for. More, less complicated exams would be a way to combat this issue! • The homework was hard, and we needed to be shown how to do them. • Perhaps the weekly quizzes could have less meaningless questions that don't really relate the content and more content questions, or ones that are just good for us to know in general health. • I think making the online tools such as tophat and McGraw Hill more accessible would be nice. If there was an alternative to the paid subscriptions, I think that would be nice. This class is the only one I have that uses these tools and so it's really expensive to have to buy these tools for one class. If an alternative is not possible, I think that adding a disclaimer on the course description would be good because then students can take multiple classes that use these tools and not have to pay for them over and over again because they didn't know to plan to take them at the same time to get the best value out of these tools. • I believe one aspect that could improve student learning in this course is posting the slideshow online for students to be able to fill in their notes. There are times when some students are not able to write as fast as the instructor teaches which can cause for some blanks in notes. By posting the slideshow online, a student can go back and fill in these spaces at a slower pace. It also allows for students to remember the material better because they have access to it at a later date if needed.

Category: Professor

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- Professor is extremely educated and genuinely cares about his students. Additionally, course is detailed and applicable to the University of Oklahoma. - He is always open to meeting with students and is very quick to responding. He helps students even outside of his class with their future career goals. - I really enjoyed the professor. I thought that it was clear how knowledgeable he was, which made it easier to ask questions with the confidence of receiving an answer you can understand. - Not too demanding. - The professor's ability to apply applied sciences and evidence to non-science majors. The professor's ability to provide several resources for success in this course (lectures, quizzes, extra-credit, office hours. The professors desire to show varies paths in how to approach meteorology and evidence/sciences. - The professor does an incredible job teaching about a challenging topic. He is clearly very passionate and engaging and obviously loves what he does.	- Be a little less wordy with the homework questions. Makes it hard to understand. - The only thing I can say that would/could have improved learning in this class would be to lower the amount of information we receive each day. The professor goes over many slides each day which is a lot of information to intake in such a short period. So maybe find another way to help us remember everything. - I think that if the class had one or two more Tas that would be really helpful. Having only one forces a bottleneck and slows the grading process significantly- that is my only real recommendation for the sake of students. - He could be more lenient on rounding a 89.9 an A, as this is closer to an A than it is to an 89.00! Also this is a class that a lot of businesses majors take and we don't need nutrition.

Category: Relevance

What are the strengths of this course?	Do you have any specific recommendations about the course that could be improved to better student learning?
- The course leaves you with knowledge that you can use in your day-to-day life. It also is engaging and interesting to learn about. - Gave me information about the basic weather formations and advanced weather formations. I also learned why certain things occur in the weather and how it effects the environment. - Discussing the primary science behind the atmosphere and the the different types of extreme weather that occurs on Earth. - I would say some strengths of this course would be learning about the weather and how everything happens on the inside and learning about the math and logic behind how tornados, hurricanes, tsunamis, etc happen. - The curriculum is extremely relevant and usable in everyday life. - This course taught me important things about my diet and gave helpful suggestions on how to live a healthy lifestyle.	- Provide more information on what to apply information from the lecture to exams or life - More assignments about learning how to use the knowledge we learn and apply it to our health

Appendix B

OU General Education Assessment Reporting Template

Semester: Fall 2023
 Course: MEIR 1014
 Learning Outcome: Quantitative and Numerical Analysis

For each of the following performance indicators (or sub-outcomes):

- (1) State the number of students enrolled in the course.
- (2) Briefly describe the assessments already used in the course that address one or more aspects of each performance indicator.
- (3) State the number or percent of students that do not meet expectations, partially meet expectations, meet expectations, and exceed expectations. This should be based on students' overall performance in cumulative formative assessments (quizzes, tests, presentations, etc.) and/or a "major" or "signature" assignment(s)/project(s) in the course.
- (4) Share info on areas where students are doing well and where they are having challenges then provide brief descriptions on your plans for curriculum improvement intended to enhance student learning and experiences, as well as instruction in the course. Include, where applicable, areas in the curriculum where there's need for additional resources. Use prompts on the second page as a guide in completing the "continuous improvement" section as that's the most important part of the assessment process.

Critical Analysis and Scientific Reasoning Performance Indicators	Total number of Students Assessed	State or brief describe the means used to assess the performance indicator (e.g., major assignment, term paper, examination, presentation, portfolio, etc.)	Scale State the percent of students in terms of how they performed based on the selected assessment(s).				Continuous Improvement* This is the most important part of the assessment process. For each performance indicator, describe briefly (in bullet form) how information regarding student performance and student perceptions (from students' survey) will be used for continuous improvement.
			Do Not Meet Expectations	Partially Meet Expectations	Meet Expectations	Exceed Expectations	
a) Analyze and interpret quantitative information from formulas, graphs, and tables.							
b) Apply appropriate strategies of quantitative problem solving.							
c) Express the relationship between mathematical representation and real-world application.							

* Below are some of the crucial questions that can help in documenting Continuous Improvement. Questions 4, 5 and 6 are particularly helpful in determining how to use results to enhance student learning and instruction:

1. What do the findings or data on student performance suggest?
2. Were there gains in student learning?

3. *What are the strengths and challenges based on student performance?*
4. *What are the next steps in enhancing student learning and teaching strategies?*
5. *What modifications need to be made in terms of the curriculum or assessment process?*
6. *What resources are needed to enhance student learning and pedagogy?*

Appendix C

General Education Student Survey

MUNM 3113 World Music

Dear OU Student:

The General Education curriculum is at the heart of OU's mission and is designed to ensure that graduating Sooners have breadth and depth - the fundamental knowledge and skills they need to flourish as individuals and as citizens.

To help support the above mission and to enhance your educational experience at OU, we are seeking your opinions about your learning experiences in the above general education course. Please respond to all items in the short questionnaire below. Your responses are extremely important to the University and will be used to improve the general education curriculum and your educational experiences.

Please contact Dr. Felix Wao at wao@ou.edu if you have any questions regarding the survey or if you experience technical difficulties.

MUNM 3113 is part of OU General Education courses designed to address the **COMMUNITY, CULTURE AND DIVERSITY** learning outcomes in the context of the statements in the table below.

Part 1: Please rate your level of agreement with each of the statements.

COMMUNITY, CULTURE AND DIVERSITY

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<i>This course equipped me with the ability to...</i>					
a) Describe the role of geographic and environmental factors in shaping today's world.					
b) Summarize the process of value formation, transmission, and modification across cultures.					
c) Compare and contrast the political, social, and/or economic institutions of the United States of America and the larger global community.					
d) Explain the factors that contribute to the development of cultural identities.					
e) Demonstrate an understanding of behaviors, ideas, beliefs, and values held by persons in situations other than one's own.					

Part 2: Please respond to the following section based on your experience in this course:

- In what ways was this course effective or ineffective in addressing the above statements?
- Is there any other feedback or comment you would like to share?