

General Education Assessment Plan (AY 2021-22 to AY 2023-24)



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General Education Assessment Plan

Introduction

An integral part of the delivery of General Education (Gen Ed) at Georgia Institute of Technology (Georgia Tech) includes the assessment of the learning outcomes. The learning outcomes were approved by the Undergraduate Curriculum Committee at Georgia Tech and by the University System of Georgia's (USG) Council on General Education in April 2011:

- **Communication (Core Area A1)**
Outcome: Student will demonstrate proficiency in the process of articulating and organizing rhetorical arguments in written, oral, visual, and nonverbal modes, using concrete support and conventional language.
- **Quantitative (Core Area A2)**
Outcome: Student will demonstrate the ability to apply basic elements of differential and integral calculus to solve relevant problems.
- **Computing (Institutional Options B)**
Outcome (2021 Fall): Student will be able to develop algorithms and implement them using an appropriate computer language and will understand algorithmic complexity and reasonable versus unreasonable algorithms.
Provisional Outcome (2023 Fall): Students will be able to develop solutions to problems involving data and to implement these solutions using an appropriate computer language.
- **Humanities, Fine Arts, and Ethics (Core Area C)**
Outcome: Student will be able to describe relationships among languages, philosophies, cultures, literature, ethics, or the arts.
- **Natural Sciences, Math, and Technology (Core Area D)**
Outcome: Student will be able to demonstrate the ability to obtain, analyze, interpret, and criticize qualitative observations and quantitative measurements to explain natural phenomena and to test hypotheses.
- **Social Sciences (Core Area E)**
Outcome: Student will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

For a course to be included in Georgia Tech's Gen Ed, it must align with the appropriate learning outcome in the Gen Ed proposal process. Courses proposed to be included in Gen Ed undergo approval processes through the Institute's Undergraduate Curriculum Committee, the Vice Provost for Undergraduate Education, the Faculty Senate, and the USG's Council on General Education.

The 3-Year Georgia Tech Gen Ed Assessment Plan (2021-2024) sets the framework for good practice in course delivery and assessment, capitalizing on the good judgement of faculty members regarding students' levels of attainment of the Gen Ed learning outcomes. Faculty

develop signature assignments in their Gen Ed courses, and the assignment, along with student performance, is collected for review and analysis at the end of each semester of the 3-Year Assessment Plan. These direct measures of student learning via faculty identified signature assignments are at the heart of the Gen Ed Assessment Plan.

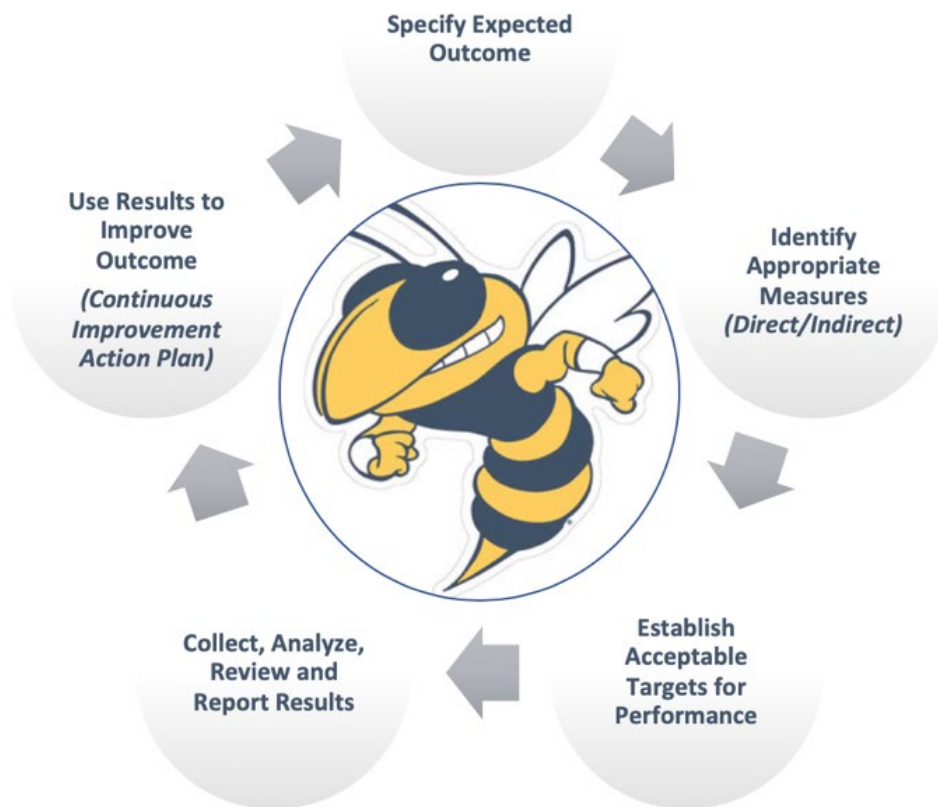
Complementing the direct measures will be indirect measures that involve student perceptions of their learning. One indirect measure will be the National Survey of Student Engagement (NSSE). Georgia Tech has participated in the NSSE every three years since 2000 as required by the USG. The survey is administered to all first-year students and seniors. Some NSSE questions align well with Georgia Tech's Gen Ed learning outcomes. Georgia Tech plans to use the NSSE results from the 2020 and 2023 administrations as our benchmarks and to inform our level of expected attainment. Longitudinal trends of the results will be monitored over time, compared against our previous benchmarks, and will be triangulated with assessment information from our direct measures.

The second indirect measure will be the Georgia Tech Exit Survey given to graduating seniors. The Institute has been gathering information about students' experiences for more than fifteen years. Specifically, the last form of the survey specifically addresses the Gen Ed learning outcomes, and results will be aligned accordingly.

This Gen Ed Assessment Plan aims to develop a sustainable assessment structure and timeline for Georgia Tech's Gen Ed learning outcomes. Nurtured by the Subcommittee on Gen Ed and Policy, this plan outlines the learning outcomes, signature assignments and student results, targets for performance, and faculty reporting to the Office of Academic Effectiveness. Taken together, the results will be shared with the Subcommittee on Gen Ed and Policy. Using the assessment results, the Subcommittee, along with other stakeholders, consider opportunities for improvement for students' attainment of the Gen Ed learning outcomes.

Overview of Assessment of the General Education Program

The Institute's approach to meaningful outcomes assessment consists of the following five steps: (1) Specify expected outcomes that are aligned with program goals, strategic priorities, and the Institute's mission, (2) Identify appropriate measures (i.e., direct/indirect where appropriate) to assess the outcome, (3) Establish acceptable targets for performance, (4) Collect, analyze, review and report results, (5) Use results to improve the outcome.



Georgia Tech conducted an intensive review of the Gen Ed learning outcomes and how students demonstrate their learning in these areas.

To better understand how students experience Gen Ed at Georgia Tech, the Office of Academic Effectiveness examined enrollment patterns for students taking courses in Gen Ed for the last five years. Patterns were determined, too, by class size (large class-100 or more students; medium class- 50-99 students; small class- 20-49 students). This exercise led to the value that all class sizes would be included in the 3-year Gen Ed Assessment Plan, as well as coverage of each discipline that contributes to Gen Ed.

The Office of Academic Effectiveness worked with Course Coordinators or Instructors to understand how students demonstrate Gen Ed learning outcomes in their courses. Careful attention to signature assignments and their alignment to the appropriate learning outcome was taken. In addition, key personnel for courses also provided acceptable targets for performance. The Office of Academic Effectiveness collaborates with key personnel to develop efficient ways to collect direct student performance information.

Frequency and Timeline of General Education Assessment

The table below schedules assessment activity and presents the data collection timeline to ensure that assessment will focus on each Core Area of Georgia Tech's Gen Ed by Spring 2024. Further, the table ensures that each discipline contributing to Gen Ed is included in the assessment plan. The Office of Academic Effectiveness will collect student performance data related to each learning outcome from the course instructors or course coordinators for further analysis.

Assessment and Data Collection Timeline by Learning Outcomes

Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024
Computing (B)	Quantitative (A2)	Natural Sciences, Math, and Technology (D)	Natural Sciences, Math, and Technology (D)	Computing (B)	Quantitative (A2)
CS1301 Introduction to Computing (In-Person)	MATH 1552 Integral Calculus	CHEM 1310 General Chemistry	MATH 1554 Linear Algebra	CS1301 Introduction to Computing	MATH 1552 Integral Calculus
CS1315 Introduction to Media Computation	MATH 1712 Survey of Calculus	BIOS 1107DL Biological Principles Laboratory	MATH 1711 Finite Mathematics	CS1315 Introduction to Media Computation	MATH 1712 Survey of Calculus
		EAS 1600 Introduction to Environmental Science		CS1371 Computing for Engineers	
	Communication (A1)	PHYS 2212 Introductory Physics II	Social Sciences (E)		Communication (A1)
	ENGL 1101 English Composition I		HIST 2111 The United States to 1877		ENGL 1101 English Composition I
	ENGL 1102 English Composition II	Social Sciences (E)	HIST 2112 The United States since 1877		
		CP 4020 Introduction to Urban and Regional Planning	POL 2101 State and Local Government		Humanities, Fine Arts, and Ethics (C)
	Humanities, Fine Arts, and Ethics (C)	ECON 2100 Economic Analysis and Policy Problems	POL 1101 Government of the United States		ARCH 2111 History of Arch 1
	ARCH 2111 History of Arch 1	PSYC 1101 General Psychology	INTA 1200 American Government in Comparative Perspective		FREN 1002 Elementary French II
	FREN 1002 Elementary French II	PSYC 2210 Social Psychology	INTA 2030 Ethics in International Affairs		ID 2202 History of Modern Industrial Design
	ID 2202 History of Modern Industrial Design	PSYC 2230 Abnormal Psychology			ID 2241 History of Art 1
	ID 2241 History of Art 1	SOC 1101 Introduction to Sociology			LMC 2100 Introduction to Science, Technology and Culture
	LMC 2100 Introduction to Science, Technology and Culture				LMC 2350 Introduction to Social Justice
	LMC 3226 Major Authors I				LMC 3219 Literature and Medicine
	ML 2500 Think Globally, Act Locally: An Introduction to Cross-Cultural Studies				LMC 3226 Major Authors I
	PHIL 4176 Environmental Ethics				ML 2500 Think Globally, Act Locally: An Introduction to Cross-Cultural Studies
	PHIL 3109 Engineering Ethics				PHIL 4176 Environmental Ethics
	SPAN 2001 Intermediate Spanish I				PHIL 3109 Engineering Ethics
					SPAN 2001 Intermediate Spanish I

Assessment Plan

To encourage a more comprehensive and accurate assessment of student performance, Georgia Tech will use both direct and indirect methods to assess general education learning outcomes. However, the majority of assessment activity relies on direct methods that are embedded across Gen Ed courses. The direct methods are measures that are tangible, visible, self-explanatory, and provide compelling evidence of exactly what students have learned. The strength of direct measures is that they require students to demonstrate what they have learned in a way that is observable and measurable, such as capstone projects, portfolios, test questions, written work, and presentations. The following components are included for each Core Area outcome's assessment plan: Expected Outcome, Appropriate Methods/Measures (Direct and Indirect), and Targets. Key personnel are identified for each Gen Ed outcome in Appendix A.

Communication (Core Area A1) Outcome:

Student will demonstrate proficiency in the process of articulating and organizing rhetorical arguments in written, oral, visual, and nonverbal modes, using concrete support and conventional language.

Appropriate Methods/Measures

Courses that contribute to Communication

Course ID	Course Name	Class Size
ENGL 1101	English Composition I	Large
ENGL 1102	English Composition II	Large

ENGL 1101 and ENGL1102 are taught at Georgia Tech to enhance students communication skills for all majors. From these two courses, every student composes an electronic portfolio by the end of the semester. Because composing in multiple modes is a central aim of the outcome, student portfolios are likely to include final and process documents of podcasts, videos, posters, and presentations. The reflective essay in each student's portfolio is an artifact in which students will reflect on all their course learning experiences from various modes.

Who assesses student performance?

Georgia Tech's Writing and Communication Program (WCP) instructors meet six times over the academic year and assess sets of student portfolios. In WCP, instructors calibrate their scores by discussing the assignments and the quality of student work using a rubric.

Measures

Direct and indirect assessment evidence will be collected.

Direct Assessment

In ENGL 1101 and 1102, students will be asked to develop portfolios demonstrating proficiency in rhetorical arguments in written, oral, visual, and nonverbal modes. Student portfolios are scored at the conclusion of the semester by groups of three to four faculty members to ensure consensus on the quality of student learning. According to our baseline data, 80% of students are expected to perform at the level of developing or higher. A Communication Rubric is used to assess students portfolios includes the following dimensions: 1. Reflects on Process, 2. Reflects on WOVEN, 3. Articulates an Argument, 4. Organizes around Argument, 5. Employs WOVEN modes, 6. Uses Concrete Support, and 7. Uses Conventions Persuasively. The rubric is structured to assess student performance on a continuum: 1-Basic, 2 Beginning, 3-Developing, 4-Competent, 5-Mature, 6-Exemplary.

X=scale Y=criteria	1 Beginning/Basic	2 Developing	3 Competent	4 Mature/Exemplary
Reflects on Process How well does the essay reflect on how writing process contributes to growth as thoughtful communicator?	Little discussion of process in essay; no discussion of the significance of process	Conclusions about process are broad, not specific; some discussions of the significance of process	Names specific changes made in individual artifacts and discusses differences between drafts; clear discussion of significance of process	Explores process as a major feature; indicates revision went beyond peer or teacher suggestions; makes connections between process on different artifacts
Reflects on WOVEN How well does the essay reflect on how WOVEN contributes to growth as thoughtful communicator?	Little discussion of WOVEN; no discussion of the significance of multimodality	Conclusions about WOVEN are broad, not specific; some discussions of the significance of multimodality	Names specific changes in modes in individual artifacts and discusses differences between modes; clear discussion of significance of process	Explores WOVEN as a major feature; indicates multimodal choices went beyond peer or teacher suggestions; makes connections about multimodality across different artifacts
Articulates an argument How well does the essay articulate an argument about growth as a thoughtful communicator?	Makes an overly general argument; significance is difficult to discern, or not appropriate to the rhetorical situation	Makes a simplistic or implicit argument, or multiple arguments that have no clear connection to one another; gestures towards significance, but does not fully develop it	Makes an explicit and straightforward argument that does not oversimplify the problem or question explores at least one question of the argument in depth	Makes a complex, unified argument that clearly articulates a position or stance; explores multiple implications of the argument in depth
Organizes around argument How is the essay organized around an argument about growth as a thoughtful communicator?	Does not organize essay around argument or attempt is insufficient; uses few effective connections to demonstrate organization; some logical moves necessary to prove the argument are absent	Organizes essay around some unifying claims but overall attempt to support argument is inconsistent; employs simplistic organization	Organizes essay around unifying claims that support the argument throughout; and employs an effective by mechanical scheme	Organizes essay around an argument that develops logically and progressively; adapts typical organizational schemes for the context; achieves substantive coherence
Employs WOVEN modes How well does the essay employ WOVEN modes to support argument about growth as a thoughtful communicator?	Does not include modes other than writing; no attempt to show how different modes and media are woven together in writing process and/or course artifacts	Evidence is mostly written; essay attempts to show how different modes and media are woven together in writing process and/or course artifacts but most attempts are unclear or missing	Evidence is mostly WOVEN; essay mostly shows how different modes and media are woven together in writing process and/or course artifacts but some attempts are unclear	Evidence is fully WOVEN; the essay shows how different modes and media are woven together in the writing process and/or course artifacts in depth or with unexpected insight
Uses concrete support How well does the essay employ evidence to support the argument about growth as a thoughtful communicator?	Little or no attempt to make use of evidence; or evidence used seems to support few or no assertions	Attempts to make use of multiple types of evidence in support of assertions but the attempt is incomplete; only some evidence supports some assertions; essay does not consider the most important evidence	Makes use of multiple types of evidence (paraphrase, quotation, etc.) and/or synthesizes evidence to support and complicate assertions but connection between assertions and evidence sometimes unclear	Makes use of best evidence and/or synthesizes multiple types of evidence (paraphrase, quotation, etc.) to support and complicate assertions throughout essay
Uses conventions persuasively How well does essay use grammar, mechanics, style, citation, etc. to support argument about growth as a communicator?	Omits some important features; pattern of inconsistencies that distract from the argument; uses features that do not support the argument	Uses features that support the argument, but some match imprecisely with content; includes minor errors or inconsistencies	Promotes engagement and supports the argument with features that efficiently use affordances suited to argument and reflection	Persuades with careful, seamless integration of features and content; innovative use of affordances

In response to the assessment results from both the direct and indirect measures in AY 2021-2022, the Writing and Communication Program faculty members then implemented changes to strengthen students' performance on this outcome. Specifically, faculty members have revised and clarified key communication components within their course to include additional writing elements designed to

strengthen student communication and learning. This change was piloted in five ENGL 1101 courses taught by five instructors. Because of the curricular enhancement, the rubric was also modified and focused more on writing. The revised rubric (remove Reflects on WOVEN, see below) includes the following six dimensions: 1. Reflects on Process, 2. Articulates an Argument, 3. Organizes around Argument, 4. Employs WOVEN modes, 5. Uses Concrete Support, and 6. Uses Conventions Persuasively. The rubric is structured to assess student performance on a continuum: 0-Beginning/Basic, 1-Developing, 2-Competent, 3-Mature/Exemplary.

X=scale Y=criteria	0 Beginning/Basic	1 Developing	2 Competent	3 Mature/Exemplary
Reflects on Process How well does the essay reflect on how writing process contributes to growth as thoughtful communicator?	Little discussion of process in essay; no discussion of the significance of process	Conclusions about process are broad, not specific; some discussions of the significance of process	Names specific changes made in individual artifacts and discusses differences between drafts; clear discussion of significance of process	Explores process as a major feature; indicates revision went beyond peer or teacher suggestions; makes connections between process on different artifacts
Articulates an argument How well does the essay articulate an argument about growth as a thoughtful communicator?	Makes an overly general argument; significance is difficult to discern, or not appropriate to the rhetorical situation	Makes a simplistic or implicit argument, or multiple arguments that have no clear connection to one another; gestures towards significance, but does not fully develop it	Makes an explicit and straightforward argument that does not oversimplify the problem or question explores at least one question of the argument in depth	Makes a complex, unified argument that clearly articulates a position or stance; explores multiple implications of the argument in depth
Organizes around argument How is the essay organized around an argument about growth as a thoughtful communicator?	Does not organize essay around argument or attempt is insufficient; uses few effective connections to demonstrate organization; some logical moves necessary to prove the argument are absent	Organizes essay around some unifying claims but overall attempt to support argument is inconsistent; employs simplistic organization	Organizes essay around unifying claims that support the argument throughout, and employs an effective by mechanical scheme	Organizes essay around an argument that develops logically and progressively; adapts typical organizational schemes for the context; achieves substantive coherence
Employs WOVEN modes How well does the essay employ WOVEN modes to support argument about growth as a thoughtful communicator?	Does not include modes other than writing; no attempt to show how different modes and media are woven together in writing process and/or course artifacts	Evidence is mostly written; essay speaks at least minimally to different modes and media are woven together in writing process and/or course artifacts but most attempts are unclear or missing	Evidence is mostly written; essay describes to some extent how different modes and media are woven together in writing process and/or course artifacts but some attempts are unclear	Evidence is fully WOVEN; the essay shows how different modes and media are woven together in the writing process and/or course artifacts in depth or with unexpected insight
Uses concrete support How well does the essay employ evidence to support the argument about growth as a thoughtful communicator?	Little or no attempt to make use of evidence; or evidence used seems to support few or no assertions	Attempts to make use of multiple types of evidence in support of assertions but the attempt is incomplete; only some evidence supports some assertions; essay does not consider the most important evidence	Makes use of multiple types of evidence (paraphrase, quotation, etc.) and/or synthesizes evidence to support and complicate assertions but connection between assertions and evidence sometimes unclear	Makes use of best evidence and/or synthesizes multiple types of evidence (paraphrase, quotation, etc.) to support and complicate assertions throughout essay
Uses conventions persuasively How well does essay use grammar, mechanics, style, citation, etc. to support argument about growth as a communicator?	Omits some important features; pattern of inconsistencies that distract from the argument; uses features that do not support the argument	Uses features that support the argument, but some match imprecisely with content; includes minor errors or inconsistencies	Promotes engagement and supports the argument with features that efficiently use affordances suited to argument and reflection	Persuades with careful, seamless integration of features and content; innovative use of affordances

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech's Exit Survey data will be used as indirect measures. The NSSE items related to the Communication Outcome are:

During the current school year, about how often have you done the following?

- Summarized what you learned in class or from course materials
- Give a course presentation

How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

- Writing clearly and effectively

- Speaking clearly and effectively

The Exit Survey items related to communication outcome to be used are:
How much has your experience at Georgia Tech contributed to your knowledge, skills, and personal growth in the following areas? GT education contributed “very much” or “Quite a bit” to their development of Writing Skills, and Oral Communication Skills.

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Rubric Applied to Students Portfolio in the following courses: ENGL 1101: English Composition I ENGL 1102: English Composition II	Direct	80% of students at developing or above.
Georgia Tech Exit Survey	Indirect	80% of students “Somewhat” or “Very Much” think that their Georgia Tech education contributed to their growth in select areas
NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students’ average is not significantly lower ($p < .05$) with an effect size at least 0.3
Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected

Quantitative (Core Area A2) Outcome:

Student will demonstrate the ability to apply basic elements of differential and integral calculus to solve relevant problems.

Appropriate Methods/Measures

Courses that contribute to Quantitative

Course ID	Course Name	Class Size	Main Enrolled Students
MATH 1552	Integral Calculus	Large	Students outside of Ivan Allen College of Liberal Arts and Scheller College of Business
MATH 1712	Survey of Calculus	Large	Ivan Allen College of Liberal Arts and Scheller College of Business

Who assesses student performance?

Course instructors will assess and collect student performance information according to the timeline and identified questions.

Measures

Direct and indirect assessment evidence will be collected by the following plan:

Direct Assessment

Students will be asked to respond two questions:

Question 1 will assess the students' ability to compute integrals and derivatives of functions. The student will be asked to compute an integral using an important technique of integration, such as integration by parts or substitution, to evaluate an integral. To solve this problem, the student will also need to demonstrate mastery of techniques to compute derivatives of functions.

Question 2 will assess the students' ability to compute limits. The student will be asked to evaluate a problem that involves calculating a limit. To solve this problem, students need to demonstrate a clear understanding of limits.

By applying an appropriate scale, 80% of students are expected to achieve "Developing" or higher.

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech's Exit Survey data will be used as indirect assessment. The NSSE items related to Quantitative Outcome to be used are:

During the current school year, how often have you

- Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)
- Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)
- Evaluated what others have concluded from numerical information

The Exit Survey items related to quantitative outcome to be used are:

How much has your experience at Georgia Tech contributed to your knowledge, skills, and personal growth in the following areas?

Georgia Tech education contributed "very much" or "Quite a bit" to their development of Mathematical Skills.

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Scoring guide applied to signature assignments in the selected courses.	Direct	80% of students meets or exceeds expectations
Georgia Tech Exit Survey	Indirect	80% of students "Somewhat" or "Very Much" think that their Georgia Tech education contributed to their growth in select areas
NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students' average is not significantly lower ($p < .05$) with an effect size at least 0.3

Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected
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Computing (Core Area B) Outcome:

Students will be able to develop algorithms and implement them using an appropriate computer language and will understand algorithmic complexity and reasonable versus unreasonable algorithms.

Appropriate Methods/Measures

Courses that contribute to the Institutional Option (Computing)

Course ID	Course Name	Class Size
CS 1301	Introduction to Computing	Large
CS 1315	Introduction to Media Computation	Large
CS 1371	Computing for Engineers (added in 2023)	Large

Who assesses student performance?

Course instructors will assess and collect student performance information according to the timeline and identified questions.

Measures

Direct and indirect assessment evidence will be collected by the following plan:

Direct Assessment

In Fall 2021, the CS 1301, 1315, and 1371, students will be asked to respond to three questions:

Question 1 will assess the student's ability on the first part of the outcome: Student will be able to develop algorithms and implement them using an appropriate computer language. This question will give the student a problem to solve and an incomplete solution to the problem. The student will be required to choose which of multiple possible pieces of code could be included in the code block to produce the correct output.

Question 2 will assess the student's ability on the second part of the outcome: Student will understand algorithmic complexity. This question will give the student a problem to solve and multiple pieces of code, each of which would work to solve the problem and each of which would produce the correct output. The student will be required to choose which of these code functions would be the best and most efficient solution.

Question 3 will assess the student's ability on the third part of the outcome: Student will understand reasonable versus unreasonable algorithms. This question will give

the student a problem to solve and multiple code segments--only one of which would produce a reasonable solution to the problem. The student will be required to choose the code that provides the correct solution.

Based on the assessment results from the previous assessment cycle, the questions and the learning outcome were modified in Fall 2023.

The CS 1301, 1315, and 1371 courses will ask two questions for the new modified outcome: Students will be able to develop solutions to problems involving data and to implement these solutions using an appropriate computer language.

It should be noted that while an impressive 93.3% of students met or exceeded the Computing Outcome expectations in 2021-2022 assessment result, instructors identified opportunities for improvement. Specifically, faculty teaching CS1301, CS1315, and CS1371 recognized a misalignment between the original computing outcome established in 2011 and the updated course materials. This disconnect, despite the signature assignment's alignment, hampered the relevance and efficacy of the assessment. To address this, the College of Computing Undergraduate Curriculum Committee (CCUCC) implemented a two-pronged approach: revision of the computing outcome and direct measure assessment design. Revision of the Computing Outcome: To further align the assessment, the CCUCC approved a provisional learning outcome - Students will be able to develop solutions to problems involving data and to implement these solutions using an appropriate computer language.

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech’s Exit Survey data will be used as indirect assessment. The NSSE items related to Computing Outcome to be used are:

Georgia Tech had contributed “very much” or “quite a bit” to their development in
Used numerical information to examine a real-world problem or issue.

The Exit Survey items related to quantitative outcome to be used are:

How much has your experience at Georgia Tech contributed to your knowledge, skills, and personal growth in the following areas?

GT education contributed “very much” or “Quite a bit” to their development of Ability to think critically and logically.

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Scoring guide applied to signature assignments in the selected courses.	Direct	85% of students meets or exceeds expectations
Georgia Tech Exit Survey	Indirect	80% of students “Somewhat” or “Very Much” think that their Georgia Tech education contributed to their growth in select areas

NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students' average is not significantly lower ($p < .05$) with an effect size at least 0.3
Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected

Humanities, Fine Arts, and Ethics (Core Area C) Outcome:

Student will be able to describe relationships among languages, philosophies, cultures, literature, ethics, or the arts.

Appropriate Methods/Measures

Courses that contribute to Humanities, Fine Arts, and Ethics

Based on the enrollment and class type from the past 5 academic years. Approximately 54% of students took large courses (≥ 100), 15% of students took middle courses (50-99), and 9% of students took small courses (20-49). To ensure school representation is appropriate, meetings with course coordinators and instructors were conducted. The following set of classes includes each discipline contributing to the Humanities outcome:

Course ID	Course Name
Large Class	
FREN 1002	Elementary French II
SPAN 2001	Intermediate Spanish I
ID 2202	History of Modern Industrial Design
ID 2241	History of Art 1
PHIL 3109	Engineering Ethics
ARCH 2111	History of Arch 1
Middle Class	
LMC 3226	Major Authors
ML 2500	Think Globally, Act Locally: An Introduction to Cross-Cultural Studies
LMC 3219	Literature and Medicine (added in 2023)
Small Class	
LMC 2100	Introduction to Science, Technology and Culture
PHIL 4176	Environmental Ethics
LMC 2350	Introduction to Social Justice (added in 2023)

Who assesses student performance?

Course instructors will assess and collect student performance information according to the timeline and identified projects, papers, or questions.

Measures

Direct and indirect assessment evidence will be collected by the following plan:

Direct Assessment

➤ FREN 1002 Elementary French II

Final exam/quiz question:

The student will describe two aspects of French culture discussed in class: a) one that demonstrates a similarity of French culture with student's native culture, and thus shouldn't cause problems when student interact with a native French speaker; and b) one that demonstrates an important cultural difference or contrast that student need to keep in mind when interacting with a native French speaker within their culture.

Evaluation for parts a) and b), 6 points total:

3: student provides a completely adequate and clear example

2: student example is partially adequate, but requires more evidence to be completely appropriate

1: student example is minimally adequate: it is a possible example, but requires reflection to see appropriateness

0: student example is not appropriate or does not relate to information from this course

➤ SPAN 2001 Intermediate Spanish I

Final exam/quiz question:

The student will describe two aspects from a Hispanic culture we discussed in class: a) one that demonstrates a similarity from a Hispanic culture with student's native culture, and thus shouldn't cause problems when student interact with a native Spanish speaker; and b) one that demonstrates an important cultural difference or contrast that student need to keep in mind when interacting with a native Spanish speaker within their culture.

Evaluation for parts a) and b), 6 points total:

3: student provides a completely adequate and clear example

2: student example is partially adequate, but requires more evidence to be completely appropriate

1: student example is minimally adequate: it is a possible example, but requires reflection to see appropriateness

0: student example is not appropriate or does not relate to information from this course

➤ ID 2202 History of Modern Industrial Design

The student will be able to demonstrate an understanding of the influences of literature on the design arts by correctly identifying multiple answers on an exam question.

Exam question: From a set of answers, identify the correct cross-influences from the Transcendentalist literature of the late/early 20th century (Emerson, Thoreau) on the design field known as The Arts & Crafts Movement (Morris, Stickley) in terms of

selection and use of (ecological) materials, function of the design (within Survivalist agendas) and design narratives (“spiritual truth”).

➤ ID 2241 History of Art 1

The student will be able to demonstrate an understanding of the influences of philosophy on Renaissance art the by correctly identifying multiple answers on an exam question.

Exam question: From a set of answers, identify the cross-influences from the philosophy of Neoplatonism (Ficino and the Medici School) on the art practiced by Michelangelo in terms of his choices in subject matter for his art projects (“the Great Chain of Being” and “Perfect Forms”) and his compositional devices (hierarchies in spatial positioning, perspective systems, use of self-portraits).

➤ PHIL 3109 Engineering Ethics

Students will be asked to write a short (2 pages, double-spaced) assignment summarizing and providing a critical reaction to a concrete case study from the field of engineering ethics. Through this writing they will identify an ethical dilemma and describe the relationships that are in potential conflict. Faculty will score this writing to determine the quality of student learning. Approximately 80% of students will score at 8 or higher out of 10.

➤ ARCH 2111: History of Architecture I

In ARCH 2111, students will be asked to respond two questions:

Question 1 will assess the evolution of architectural drawing conventions as an essential graphic language that transcended isolated areas and eras. Students will be asked to explain how the introduction of paper shaped architectural production and enhances our understanding of architectural history. Students’ answers should be approximately one paragraph with a clear thesis statement and at least three specific examples from different geographic regions (artifacts, projects/sites, and/or architects and how paper transformed their work and/or legacy).

Question 2 will assess the translation of structural and performative concepts in architecture. Students will be asked to examine two specific structural features or assemblies then explain how they are directly representative of cross-cultural contact, assimilation, and/or adaptation.

➤ ML 2500 Think Globally, Act Locally: An Introduction to Cross-Cultural Studies

Final exam/quiz question:

The student will describe two aspects of one of the cultures discussed in class: a) one that demonstrates a common or important literary theme/idea from that culture that is also found in literature from student’s native culture, and thus shouldn’t cause problems when discussing with a native speaker of that culture; and b) one that demonstrates a common or important literary theme/idea that is quite different or absent from those themes found in student’s native culture, and which might cause problems when discussing literature with a native speaker of that culture within their culture.

Evaluation for parts a) and b), 6 points total:

3: student provides a completely adequate and clear example

2: student example is partially adequate, but requires more evidence to be completely appropriate

1: student example is minimally adequate: it is a possible example, but requires reflection to see appropriateness

0: student example is not appropriate or does not relate to information from this course

➤ LMC 2100 Introduction to Science, Technology and Culture, LMC 2350 Introduction to Social Justice, LMC 3219 Literature and Medicine, and LMC 3226 Major Authors

In LMC courses, students will be asked to produce a piece of writing that demonstrates a description of the relationships among languages, philosophies, cultures, literature, ethics, or the arts. Through this writing, students will identify the ways in which these disciplines work together. Faculty will score this writing to determine the quality of student learning.

➤ PHIL 4176 Environmental Ethics

Students will be asked to write a Consideration, an assignment in which they describe the ethical implications of an option for responding to a problem situation, drawing from several distinct ethical frameworks. The course uses a specification grading scheme whereby assignments are graded satisfactory/unsatisfactory, with time-limited opportunities to revise. The assessment will compare number of students who complete the first consideration satisfactorily on their first attempt with the number who complete the additional considerations to reach the satisfactory level (Fall 2021)

Working in groups, students will be asked to share a resource related to the theme of the chosen course module with the class. The main objective is to present a resource in a way that connects it to the themes from the class and analyze it from the perspective of the concepts introduced in the class. This assignment is designed to demonstrate students' competency to apply the ethics frameworks from the course in analyzing real-world events pertaining to the environment and climate. The students will also prepare two discussion questions surrounding their resource, demonstrating their competency to independently identify and evaluate the ethical dimension of the human relationship to the environment and climate. Lastly, by asking students to identify ethical challenges surrounding real-world events, the assignment allows for a critical examination of the intersection of environmental ethics and issues surrounding the economy, politics, policy, and technology (Fall 2023)

By applying an appropriate scale, 80% of students are expected to achieve "Developing" or higher.

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech's Exit Survey data will be used as indirect assessment. The NSSE items related to the Humanities and Ethics Outcomes are:

Georgia Tech had contributed "very much" or "quite a bit" to their

- Developing/clarifying a personal code of values and ethics.

- Understanding people of other backgrounds
- Tried to better understand someone else’s view by imagining how an issue looks from their perspective

The Exit Survey items related to Humanities and Ethics are:
Georgia Tech contributed “very much” or “quite a bit” to their Ability to make ethically responsible decisions

How much has your experience at Georgia Tech contributed to your knowledge, skills, and personal growth in the following areas? GT education contributed “very much” or “Quite a bit” to their development of an appreciation for different cultures.

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Scoring guide applied to signature assignments in the selected courses.	Direct	80% of students meets or exceeds expectations
GT Exit Survey	Indirect	80% of students “Somewhat” or “Very Much” think that their Georgia Tech education contributed to their growth in select areas
NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students’ average is not significantly lower ($p < .05$) with an effect size at least 0.3
Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected

Natural Sciences, Math, and Technology (Core Area D) Outcome:

Student will be able to demonstrate the ability to obtain, analyze, interpret, and criticize qualitative observations and quantitative measurements to explain natural phenomena and to test hypotheses.

Appropriate Methods/Measures

Courses that contribute to Natural Sciences, Math, and Technology

Course ID	Course Name	Class Size
CHEM 1310	General Chemistry	Large
BIOS 1207DL	Biological Principles Laboratory	Large
EAS 1600	Introduction to Environmental Science	Large
PHYS 2212	Introductory Physics II	Large
MATH 1554	Linear Algebra	Large
MATH 1711	Finite Mathematics	Large

Who assesses student performance?

Course instructors will assess and collect student performance information according to the timeline and identified projects, papers, or questions.

Measures

Direct and indirect assessment evidence will be collected by the following plan:

Direct Assessment

➤ CHEM 1310 General Chemistry

General Chemistry is a combined lecture-laboratory science course that explores the fundamental laws and theories of chemical reactions. To assess student's ability to obtain, analyze, interpret, and criticize qualitative observations, the student will prepare an abbreviated technical report for the experiment "Fundamentals of Chemistry, Precision, and Accuracy." They will be asked to respond to the following prompt:

1. Making references to specific results and solubility rules; explain how students observations during the experiment are consistent with the solubility rules.

To assess student's ability to obtain, analyze, interpret, and criticize quantitative measurements, the student will prepare an abbreviated technical report for the experiment "Exploring Gas Laws." They will be asked to respond to the following prompt:

1. During the experiment, students measured the relationship between pressure (P) and volume (V) for air, with temperature and number of moles held constant. Report the relationship students found as an equation relating P and V and comment on the accuracy of students' data to the ideal gas model.

➤ BIOS 1207DL Biological Principles Laboratory

The objective of BIOS 1207 Lab is to give students experience in how to carry out research in biology by designing an experiment, formulating a hypothesis, and then analyzing and interpreting data. Students will be asked to create and evaluate written lab reports and give research presentations. Faculty will score students labs assignments on a scale.

➤ EAS 1600 Introduction to Environmental Science

Students will be asked to complete a lab report/lab project/quiz, and they should be able to design or implement quantitative information in a visual space (i.e. graphs/plotting software) and communicate experimental findings from visualized data.

➤ PHYS 2212 Introductory Physics II

Students will respond to three questions:

Question 1 will assess students' ability to obtain experimental data. Students will be presented with diagrams of several experimental set-ups and asked which could be used to collect data related to a particular physical phenomenon. They will be asked which parameter should be controlled and which should be measured.

Question 2 will assess students' ability to analyze and interpret experimental data. Students will be presented with several graphs of experimental data, and asked which could be used to analyze data related to a particular physical phenomenon, and what physical property the graph displays.

Question 3 will assess students' ability to criticize qualitative observations and quantitative measurements. Students will be presented with a graph of experimental data, and asked how it has been affected by random and systematic errors.

Faculty will score the student responses on a scale.

➤ MATH 1554 Linear Algebra

Final exam/quiz question:

Students will demonstrate the ability, given a transition diagram or stochastic process word problem, to obtain a stochastic matrix which represents the transition diagram, determine whether the Markov Chain corresponding to a given initial state tends to a long-term steady state vector by analyzing the values in stochastic matrix, and then compute the steady state vector if it exists. The student will then interpret the information to predict the long-term distributions of the given population.

Faculty will score the student responses on a scale.

➤ MATH 1771 Finite Mathematics

Final exam/quiz question:

Students will demonstrate the ability, given a word problem relating a real life situation involving a business scenario or natural phenomenon and containing a table of data, to obtain a linear regression model for the data by analyzing the data points. The student will then use the linear regression model to analyze and interpret the information in order to predict the future value of the dependent variable and make a recommendation on a desirable course of action.

Faculty will score the student responses on a scale.

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech's Exit Survey data will be used as indirect assessment. The NSSE items related to the Natural Sciences, Math, and Technology Outcome are:

During the current school year, how often have you

- Analyzing numerical and statistical information
- Solving complex real-world problems
- Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)?

- Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)?
- Evaluated what others have concluded from numerical information?

Georgia Tech’s Exit Survey data will be used as an indirect assessment.

The Exit Survey items related to natural sciences, math, and technology to be used are:

Georgia Tech contributed “very much” or “quite a bit” to their Ability to apply scientific methods of inquiry

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Scoring guide applied to signature assignments in the selected courses	Direct	80% of students meets or exceeds expectation
Georgia Tech Exit Survey	Indirect	80% of students “Somewhat” or “Very Much” think that their Georgia Tech education contributed to their growth in select areas
NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students’ average is not significantly lower ($p < .05$) with an effect size at least 0.3
Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected

Social Sciences (Core Area E) Outcome:

Student will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

Appropriate Methods/Measures

Courses that contribute to the Social Sciences

Based on the enrollment and class type from the past five years, about 2/3 student took large classes (≥ 100 students), and about 1/3 students took middle classes (50-99). There are 15 courses selected:

Course ID	Course Name
Large Class	
ECON 2100	Economic Analysis and Policy Problems
HIST 2111	The United States to 1877
HIST 2112	The United States since 1877
INTA 1200	American Government in Comparative Perspective
INTA 2030	Ethics in International Affairs
POL 1101	Government of the United States

PSYC 1101	General Psychology
PSYC 2210	Social Psychology
SOC 1101	Introduction to Sociology
PSYC 2230	Abnormal Psychology
Middle Class	
CP 4020	Introduction to Urban and Regional Planning
Small Class	
POL 2101	State and Local Government

Who assesses student performance?

Course instructors will assess and collect student performance information according to the timeline and identified projects, papers, or questions.

Measures

Direct and indirect assessment evidence will be collected by the following plan:

Direct Assessment

➤ ECON 2100 Economic Analysis & Policy Problems

ECON 2100 is structured as an introductory economics course that exposes students to the foundational principles of both microeconomics and macroeconomics. The Core Area E outcome is assessed based on two subsets of midterm/final exam questions. Questions were chosen such that students would not be required simply to recall the definition of a term or set of terms, but to synthesize and apply their understanding of the concepts themselves. The questions will be administered to ECON 2100 students on either midterm exams or final exams. The first subset of questions pertains to the following core microeconomic concepts: opportunity cost, price controls, elasticities, and externalities. The second subset pertains to the following core macroeconomic concepts: inflation, the role of money, economic forces and growth, and interest rates. The assessment criteria are as follows:

# correct answers out of 8 questions	Evaluation
7-8	Exceeds expectations
5-6	Meets expectations
3-4	Does not meet expectations – Needs improvement
2 or fewer	Does not meet expectations – Severely deficient

➤ HIST 2111 The United States to 1877

Graded activities in HIST 2111 can range widely depending on the professor's pedagogical approach, but usually include objective tests that allow students to demonstrate their ability to describe how social, political, and economic forces

influence the behavior of individuals and larger social groups (e.g., families, organizations, nations). Therefore, to provide an assessment of Core Area E the professor will designate three questions on the final examination that will assess students' ability to describe:

- How social forces influence the history of the United States to 1877;
 - How political forces influence the history of the United States to 1877; and
 - How economic forces influence the history of the United States to 1877.
- Each student will receive a score of 0 – 3 on an index measuring the accuracy of their responses.

3: student had three correct answers, therefore, student showed sufficient ability to describe the social, political, and economic forces that influence social behavior.

2: student had two correct answers, therefore, student showed a partial ability to describe the social, political, and economic forces that influence social behavior.

1: student had one correct answer, therefore, student showed a minimal ability to describe the social, political, and economic forces that influence social behavior.

0: student had zero correct answers, therefore, student did not demonstrate an ability to describe the social, political, and economic forces that influence social behavior.

➤ HIST 2112 The United States since 1877

Graded activities in HIST 2112 can range widely depending on the professor's pedagogical approach, but usually include objective tests that allow students to demonstrate their ability to describe how social, political, and economic forces influence the behavior of individuals and larger social groups (e.g., families, organizations, nations). Therefore, to provide an assessment of Core Area E the professor will designate three questions on the final examination that will assess students' ability to describe:

- How social forces influence the history of the United States since 1877;
- How political forces influence the history of the United States since 1877; and
- How economic forces influence the history of the United States since 1877.

Each student will receive a score of 0 – 3 on an index measuring the accuracy of their responses.

3: student had three correct answers, therefore, student showed sufficient ability to describe the social, political, and economic forces that influence social behavior.

2: student had two correct answers, therefore, student showed a partial ability to describe the social, political, and economic forces that influence social behavior.

1: student had one correct answer, therefore, student showed a minimal ability to describe the social, political, and economic forces that influence social behavior.

0: student had zero correct answers, therefore, student did not demonstrate an ability to describe the social, political, and economic forces that influence social behavior.

➤ INTA 1200 American Government in Comparative Perspective

Final exam:

INTA 1200 American Government in Comparative Perspective explores the institutions and processes of government and how they influence the lives of their citizens in social, political, and economic areas. In this class, the final exam is used to assess this outcome. On the final exam students must typically display knowledge of electoral system formation and how it influences voter turnout, explore the responsibilities, impact and realities of both political parties and interest groups for shaping public discourse and policy, as well as have competence over various national and state level public policies such as civil liberties, justice systems, and economic policies. The threshold used for competence is a score of 70% on the final exam with class competence being 70% of student obtaining this score.

➤ INTA 2030 Ethics in International Affairs

The overall objective of this course is to introduce students to issues of morality and ethical reasoning in international relations. The course looks at the importance of determining individual and collective conduct of foreign relations and examines the ethical nature of rules, structures, and patterns of behavior in the international system. In this context, acquiring knowledge of the complex interplay and even tensions among political morality and social, political, and economic forces, is critical in providing students with a solid understanding of why international state and non-state actors behave the way they do.

The course learning outcome – ability of students to describe the social, political, and economic forces that influence social behavior – will be assessed in the context of the **final exam**, which is worth a maximum total score of 25 points. For this exam, students will have the option to choose between writing a research paper and taking a cumulative exam consisting of multiple-choice questions. The following assessment methods and instruments will be used for the two forms of final examination:

1. Research paper. Students will discuss the topic selected with the instructor and will submit an outline and annotated bibliography in week twelve to ensure that the topic serves the learning outcome. To measure student success in achieving this learning outcome, the following scale will be used:
 - a. 22.5-25 points: work reflects an excellent understanding of the social, political, and economic forces that influence social behavior;
 - b. 20-22.4 points: work reflects a very good understanding of the social, political, and economic forces that influence social behavior;
 - c. 17.5-19.9 points: work reflects a satisfactory understanding of the social, political, and economic forces that influence social behavior;
 - d. 15-17.4 points: work reflects a marginally acceptable understanding of the social, political, and economic forces that influence social behavior;
 - e. Below 15: work reflects an incomplete and unacceptable understanding of the social, political, and economic forces that influence social behavior;
2. Cumulative multiple-choice exam. This exam will include 50 questions, two of which are listed below to illustrate their application and practical nature aiming to assess student understanding of the social, political, economic, and moral factors at play in decision making processes. The above grading scale will be used for this assignment, as well.

➤ POL 1101 Introduction to American Government

Among the topics discussed in POL 1101 is understanding the causes and effects of trade protectionism and free trade on American politics. Basic explanations of comparative advantage and distributive trade politics are used to explain on-going debates over trade. This material allows the students to see the contrast between economic and political interest, and the actions and messaging used by politicians and different interest groups to sway public opinion and voters.

Faculty score student responses on a scale.

➤ PSYC 1101 General Psychology

Concept paper:

Students are asked to write Concept Papers throughout the course. The goal is to examine a psychology subfield of interest (e.g. social, personality, biopsychology) and summarize an area of research. Students are asked to comment on how social, personality, or biopsychology might influence themselves or someone else.

The faculty score the paper on a scale.

➤ PSYC 2210 Social Psychology

Social psychology is defined as the scientific study of the thoughts, feelings, and behaviors of individuals in social situations. In the PSYC 2210 course, we discuss topics such as how others can persuade us to change our attitudes or behaviors.

In PSYC 2210, students are asked to read empirical articles on topics such as persuasion, stereotype threat, and social loafing and are asked to submit an article critique and personal reflection. One assigned article is: "Knowing is half the battle: Teaching stereotype threat as a means of improving women's math performance" (Johns et al., 2005). This article supplements our in-class discussion of stereotype threat (the risk of confirming negative stereotypes about an individuals' own group) and provides details about an intervention to weaken the impact of stereotype-related performance. We also discuss how stereotype threat can impact more than just performance, but also confidence and even concealment of one's true identity.

Empirical Article Critiques:

The article critiques must include a critical summary of the article and student personal reaction to the article. The article critiques must be typewritten and a minimum of 500 words. In addition to the summary and personal reaction, students must include two (2) thought-provoking questions from the readings that will be used to stimulate class discussion.

SECTION 1. Summary of Article: Students will describe the study and include the following information if applicable:

1. Problem/Purpose
2. Key Hypotheses

3. Sample
4. Measures & Procedure
5. Results/Conclusions
6. Practical Application

SECTION 2. Personal Reaction: In this section, students will provide a thoughtful reaction to multiple aspects of the article (describe reaction and reasoning).

SECTION 3. Discussion Questions: In this section, provide two questions that could be used to facilitate discussion.

Faculty will score the critiques on a scale.

➤ SOC 1101 Introduction to Sociology

Graded activities in SOC 1101 include objective tests that allow students to demonstrate their ability to describe how social, political, and economic forces influence the behavior of individuals and larger social groups (e.g., families, organizations, nations).

Therefore, to provide an assessment of Core Area E, the professor will designate three questions on the final examination that will assess students' ability to describe:

- How social forces influence the behavior of individuals or social groups;
- How political forces influence the behavior of individuals or social groups; and
- How economic forces influence the behavior of individuals or social groups.

Each student will receive a score of 0 – 3 on an index measuring the accuracy of their responses.

3: student had three correct answers, therefore, student showed sufficient ability to describe the social, political, and economic forces that influence social behavior.

2: student had two correct answers, therefore, student showed a partial ability to describe the social, political, and economic forces that influence social behavior.

1: student had one correct answer, therefore, student showed a minimal ability to describe the social, political, and economic forces that influence social behavior.

0: student had zero correct answers, therefore, student did not demonstrate an ability to describe the social, political, and economic forces that influence social behavior.

➤ PSYC 2230 Abnormal Psychology

This course gives an overview of the field of Abnormal Psychology based on the contemporary biopsychosocial perspective and scientific research. The influence of social, political, and economic forces are inherent in considering "environmental" contributions to the interaction of the person and the environment. Case studies are presented in class and analyzed in biopsychosocial terms.

The Discussion Leader assignment is for 100 points, so students will write an essay on the topic and some discussion questions. Students will

- Read assigned textbook chapter

- Locate an outside article related to the topic(s) covered in assigned textbook chapter.
- Provide a citation and/or a link to students outside article.
- Summarize students outside article.
- Clearly explain the connection of students outside resource to the textbook reading.

Pose a couple of interesting questions (2-3) related to students' article and the textbook chapter that will make classmates think about the topic.

For each topic, if students are not assigned to be a Discussion Leader, then students are a Discussion Responder. Responders are required to make at least one post to one of the leader prompts for that chapter, which will be graded out of 10 points. A Discussion Responder's post needs to contribute something to the discussion or move it along in some way. If students agree or disagree, say why. If students give an example, say why it's relevant to the Discussion. Same if students ask a follow-up question, what's students' underlying concern? If students suggest an alternative, say why.

Faculty will use rubric to score students' performance.

➤ CP 4020: Introduction to Urban and Regional Planning

CP 4020 provides students an overview of the planning of cities and metropolitan regions and describes how planning influences the design and development of human settlements. Students will be asked to complete an individual project that students will explore a comprehensive plan and other information that sheds light on the planning processes in the community. This individual project will demonstrate students' ability to describe the social, political, and economic forces that influence social behavior. Faculty will score this writing according to a scale to determine the quality of student learning.

➤ POL 2101: State and Local Government

In this course students gain a hands-on understanding how the political process of state and local government operates in the United States. POL 2101 is based on problem-based learning principles to provide students the skills and confidence to use their problem-solving skills to address policy problems facing society today. Students have the opportunity to discuss their ideas with elected officials and develop strategies used in policy processes. The major tasks to achieve the course goal are (1) creating a problem definition, (2) writing a policy paper, and (3) discussion of advocacy strategies. Brief assignments and a policy paper are used to assess progress.

Faculty will score the policy paper on a scale.

By applying an appropriate scale, 80% of students are expected to achieve "Developing" or higher.

Indirect Assessment

NSSE 2020 and 2023 and Georgia Tech's Exit Survey data will be used as indirect assessment. The NSSE items related to the Natural Sciences, Math, and Technology Outcome are:

How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

- Being an informed and active citizen.
- Learned something that changed the way you understand an issue or concept.
- Connected your learning to societal problems or issues.
- Attending events that address important social, economic, or political issues.

The Exit Survey items related to the social sciences are:

Georgia Tech contributed “very much” or “somewhat” to their

Understanding of current events

Acceptable Target

Georgia Tech General Education Assessment Plan

Assessment Measures	Measure Type	Acceptable Target for Performance
Scoring guide applied to signature assignments in the selected courses	Direct	80% of students meets or exceeds expectation
Georgia Tech Exit Survey	Indirect	80% of students “Somewhat” or “Very Much” think that their Georgia Tech education contributed to their growth in select areas
NSSE Survey	Indirect	Compared to AAU & R1, Georgia Tech students’ average is not significantly lower ($p < .05$) with an effect size at least 0.3
Student Voice in General Education Assessment Focus Group	Indirect	What students learned and program improvement suggestions are collected

Analysis

The Office of Academic Effectiveness will analyze the assessment information and create appropriate reports for distribution across stakeholders.

Actions and Follow-Up

At the course level, faculty members teaching in Gen Ed will be continuously assessing students and their attainment of the Gen Ed outcomes. This iterative process of teaching and assessment in the classroom includes pedagogical adjustments that focus on student success and learning.

Faculty and administrators will interpret assessment information related to students’ attainment of the Institute’s Gen Ed outcomes. The General Education and Policy Subcommittee, serving under the Institute Undergraduate Curriculum Committee which is commissioned by the Faculty Senate with representation from all the colleges at Georgia Tech, will analyze and interpret the assessment results from direct and indirect measures and will make recommendations related to student learning and attainment. In addition,

the Faculty Council on Accreditation charged by the Provost and the Institute Assessment Council charged by the Associate Provost for the Office of Academic Effectiveness will also study the trends and assessment information related to student learning and attainment of the Gen Ed learning outcomes and make recommendations related to student learning, as well as the assessment process. Assessment information may also inform opportunities for faculty development programs through the Center for Teaching and Learning of other Faculty Development initiatives related to good practices in teaching and learning.

To promote transparency and encourage the use of General Education assessment data, findings and results from the assessment of each learning outcome are made available on the Office of Academic Effectiveness website. The Office of Academic Effectiveness will also host a General Education Faculty Engagement Day, facilitated by the director of assessment whose work focuses on general education assessment. Faculty will be invited, including those whose course or department will be represented in the assessment plan. A robust and insightful dialogue on ways for learning improvement for each General Education Learning Outcome will be categorized into three pillars: (1) Instructional Changes, (2) Student Support Services, and (3) Assessment. The Improvement Report will be later shared with all General Education participating departments and the Subcommittee on General Education and Policy.

Ultimately, Georgia Tech seeks to ensure that its Gen Ed outcomes are adequately embedded throughout the Gen Ed courses. The emphasis of these Gen Ed outcomes will be well documented through our signature and selected assignments, and Georgia Tech's focus will clearly be on our number one value: Students are our top priority.

Conclusion

Georgia Tech Gen Ed plays a critical role in providing students with foundational knowledge, exposing students to multiple disciplines and ways of knowing in Communication, Mathematics, Computer Science, Natural Sciences, Social Sciences, and Humanities, Fine Arts, and Ethics. It is important that Georgia Tech implements a Gen Ed Assessment Plan that provides information about how students experience Gen Ed and how they demonstrate their learning of the Gen Ed outcomes within a framework of transparency.

Appendix A

Key Personnel for Each Outcome

Communication Outcome:

Student will demonstrate proficiency in the process of articulating and organizing rhetorical arguments in written, oral, visual, and nonverbal modes, using concrete support and conventional language.

McKenna Rose	Brittain Fellow and Assistant Director of Assessment	mckenna.rose@lmc.gatech.edu
Melissa Ianetta	Interim School Chair and Professor	melissa.ianetta@lmc.gatech.edu
Andy Frazee	Senior Academic Professional and Director of Writing and Communication	andy.frazee@lmc.gatech.edu
Roberta Berry	Associate Vice Provost for Undergraduate Education & Executive Director of Honors Program	robertaberry@gatech.edu
Sarah Wu	Assessment Manager	sarah.wu@gatech.edu
Loraine Phillips	Associate Provost for Academic Effectiveness	Loraine.Phillips@gatech.edu
Reta Pikowsky	Associate Vice Provost and Registrar	reta.pikowsky@registrar.gatech.edu

Quantitative Outcome:

Student will demonstrate the ability to apply basic elements of differential and integral calculus to solve relevant problems.

Enid Steinbart	Director of Undergraduate Advising & Assessment	enid.steinbart@math.gatech.edu
Guillermo Goldsztein	Director of Undergraduate Studies	ggold@math.gatech.edu
Federico Bonetto	Associate Professor	federico.bonetto@math.gatech.edu
Klara Grodzinsky	Director of Teaching Assistants	klara.grodzinsky@math.gatech.edu
Sarah Wu	Assessment Manager	sarah.wu@gatech.edu
Loraine Phillips	Associate Provost for Academic Effectiveness	Loraine.Phillips@gatech.edu
Roberta Berry	Associate Vice Provost for Undergraduate Education & Executive Director of Honors Program	robertaberry@gatech.edu
Reta Pikowsky	Associate Vice Provost and Registrar	reta.pikowsky@registrar.gatech.edu

Computing Outcome:

Student will be able to develop algorithms and implement them using an appropriate computer language and will understand algorithmic complexity and reasonable versus unreasonable algorithms.

Elijah Cameron	Director of Assessment and Quantitative Services	ecameron@cc.gatech.edu
Melinda McDaniel	CS 1301 representative	mcdaniel@cc.gatech.edu
David Joyner	CS 1301 representative	david.joyner@gatech.edu
Caleb Southern (2021) Iretta Kears (2023)	CS1315 representative	caleb.southern@gatech.edu ikearse7@gatech.edu
Daniel Forsyth	CS1371 representative	dan.forsyth@cc.gatech.edu
Olufisayo Omojokun	Computing main contact	omojokun@cc.gatech.edu
Cedric Stallworth	Assistant Dean for Outreach, Enrollment and Community; Senior Lecturer	cedric@cc.gatech.edu
Kantwon Rogers	Ph.D. Student	KantwonRogers@gatech.edu
Reta Pikowsky	Associate Vice Provost and Registrar	reta.pikowsky@registrar.gatech.edu
Sarah Wu	Assessment Manager	sarah.wu@gatech.edu
Loraine Phillips	Associate Provost for Academic Effectiveness	Loraine.Phillips@gatech.edu
Roberta Berry	Executive Director, Honors Program	robertaberry@gatech.edu

Humanities, Fine Arts, and Ethics Outcome:

Student will be able to describe relationships among languages, philosophies, cultures, literature, ethics, or the arts.

Michelle Rinehart	Associate Dean for Academic Affairs and Outreach, College of Design	michelle.rinehart@design.gatech.edu
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Natural Sciences, Math, and Technology Outcome:

Student will be able to demonstrate the ability to obtain, analyze, interpret, and criticize qualitative observations and quantitative measurements to explain natural phenomena and to test hypotheses.

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Social Sciences Outcome:

Student will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

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