TCC General Education
Assessment Report
Fall 2023 – Spring 2024

OVERVIEW

General Education Assessment (GEA) Plan

Each course offered at Tidewater Community College (TCC) develops students in one or more of the following core competencies: Civic Engagement, Critical Thinking, Professional Readiness, Quantitative Literacy, Scientific Literacy and Written Communication. Discipline faculty identify the competency or competencies supported by course content and the competencies are documented in the Official Course Outlines, available in i-INCURR. Faculty members then incorporate course activities and assignments to facilitate student development for the selected competency learning outcomes as identified on the TCC General Education Competency Rubrics. TCC rubrics are adapted from the Association of American Colleges and Universities (AAC&U) VALUE Rubrics. Rubrics, and other GEA tools, can be found on the "Assessment" tab in i-INCURR and on the General Education Assessment Resource System (GEARS) website.

TCC measures student learning by assessing student work products (SWPs) completed in general education courses, which support the applicable competencies. In addition, TCC assesses assignment design in non-general education courses. This assessment determines the extent to which assignments prompt students to demonstrate the learning outcomes for the applicable competencies.

Scientific Literacy and Written Communication competencies were assessed in the 2023-2024 academic year.

SCIENTIFIC LITERACY (FALL 2023)

Student Learning – Scientific Literacy

The Office of Institutional Effectiveness provided a random sample of 280 students to assess the scientific literacy competency. Of the students selected, faculty submitted student work products for 121 students, or 43% of the requested work products (n=121). Student course withdrawals, students not submitting the competency assignment and faculty not participating in the assessment cycle contributed to the number of reviewed work products. The following chart shows the number of students not assessed and the inaccessible reason.

Reason	Students	Percent
Faculty member did not submit the requested product	109	68.6%
Student did not submit the work product to the instructor	17	10.7%
Student dropped/withdrawn from course	27	17.0%
Work product cannot be assessed	6	3.8%
Total	*159*	*100.0%*

* Work product cannot be assessed – file format made work product inaccessible

A breakdown of scores by academic plan/pathway, discipline, transfer v. career/technical programs, score frequency and assignment support were provided by OIE. Course level data is available in Appendix A. This information is shared and reviewed with Pathway Deans and discipline faculty during pathway meetings and through professional development sessions offered by the Assessment staff.

The following chart identifies transfer program students by academic plan and discipline of the course they were assessed in with average scores and the number of students who have met the 2.0 college benchmark.

Scientific Literacy Scores by Academic Plan and Discipline
Transfer Program Students

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	213 Business Administration	BIO - Biology	6	.	4	2.11	1.44
		ENV - Environmental Science	1	.	1	3.50	.
	246 Computer Science	BIO - Biology	4	.	3	2.29	0.67
		CHM - Chemistry	2	.	2	3.00	0.47
		NAS - Natural Science	1	.	1	2.00	.
	699 General Studies	BIO - Biology	14	.	11	2.21	0.56
		CHM - Chemistry	2	.	2	2.67	0.00
		GOL - Geology	1	.	1	2.33	.
		NAS - Natural Science	2	.	2	2.59	0.12
		PHY - Physics	1	.	1	2.33	.
		PSY - Psychology	1	.	1	2.67	.
	831 Engineering	PHY - Physics	3	.	3	3.11	0.68
	880 Science	BIO - Biology	7	.	7	2.38	0.53
		CHM - Chemistry	6	.	6	2.47	0.27
		GOL - Geology	2	.	2	2.75	1.06
		PHY - Physics	3	.	3	2.61	0.35
		PSY - Psychology	1	.	1	3.50	.
	882 Social Sciences	BIO - Biology	5	.	5	2.40	0.65
		CHM - Chemistry	2	.	2	2.50	0.71
		NAS - Natural Science	1	.	1	2.33	.
Demonstrate proper usage of credible and relevant scholarly sources	213 Business Administration	BIO - Biology	6	.	3	1.95	1.42
		ENV - Environmental Science	1	.	1	3.50	.
	246 Computer Science	BIO - Biology	4	.	4	2.42	0.50
		CHM - Chemistry	2	.	2	3.17	0.23
		NAS - Natural Science	1	.	.	0.50	.
	699 General Studies	BIO - Biology	14	.	7	1.92	0.89
		CHM - Chemistry	2	1	1	3.00	.
		GOL - Geology	1	.	1	3.00	.
		NAS - Natural Science	2	.	2	2.17	0.23
		PHY - Physics	1	.	.	1.67	.
		PSY - Psychology	1	1	.	.	.
	831 Engineering	PHY - Physics	3	.	2	2.72	0.95

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	880 Science	BIO - Biology	7	2	4	2.37	0.63
		CHM - Chemistry	6	3	1	2.00	0.87
		GOL - Geology	2	.	1	2.00	0.71
		PHY - Physics	3	.	3	2.67	0.29
		PSY - Psychology	1	.	1	3.50	.
	882 Social Sciences	BIO - Biology	5	.	2	1.97	1.02
		CHM - Chemistry	2	1	1	3.50	.
		NAS - Natural Science	1	.	1	2.00	.
Identify or apply methods of inquiry that lead to scientific knowledge	213 Business Administration	BIO - Biology	6	1	3	2.03	1.47
		ENV - Environmental Science	1	.	1	3.00	.
	246 Computer Science	BIO - Biology	4	.	4	2.58	0.69
		CHM - Chemistry	2	.	2	3.17	0.71
		NAS - Natural Science	1	.	1	2.00	.
	699 General Studies	BIO - Biology	14	.	11	2.25	0.74
		CHM - Chemistry	2	.	2	2.67	0.00
		GOL - Geology	1	.	1	2.67	.
		NAS - Natural Science	2	.	2	2.84	0.23
		PHY - Physics	1	.	1	2.67	.
		PSY - Psychology	1	.	1	2.67	.
	831 Engineering	PHY - Physics	3	.	3	3.33	0.29
	880 Science	BIO - Biology	7	.	7	2.48	0.58
		CHM - Chemistry	6	.	6	3.00	0.41
		GOL - Geology	2	.	2	2.75	1.06
		PHY - Physics	3	.	3	2.72	0.54
		PSY - Psychology	1	.	1	3.50	.
	882 Social Sciences	BIO - Biology	5	.	5	2.57	0.44
		CHM - Chemistry	2	.	2	2.50	0.71
		NAS - Natural Science	1	.	1	2.00	.
Organize and interpret quantitative or qualitative evidence	213 Business Administration	BIO - Biology	6	.	4	2.11	1.42
		ENV - Environmental Science	1	.	1	3.50	.
	246 Computer Science	BIO - Biology	4	.	4	2.50	0.58
		CHM - Chemistry	2	.	2	3.17	0.71
		NAS - Natural Science	1	.	1	2.00	.
	699 General Studies	BIO - Biology	14	.	11	2.23	0.70
		CHM - Chemistry	2	.	2	2.50	0.24

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
		GOL - Geology	1	.	1	2.67	.
		NAS - Natural Science	2	.	2	3.00	0.00
		PHY - Physics	1	.	1	2.33	.
		PSY - Psychology	1	.	1	2.50	.
	831 Engineering	PHY - Physics	3	.	3	3.33	0.29
	880 Science	BIO - Biology	7	1	6	2.36	0.37
		CHM - Chemistry	6	.	6	2.86	0.40
		GOL - Geology	2	.	2	3.00	0.71
		PHY - Physics	3	.	3	2.72	0.54
		PSY - Psychology	1	.	1	3.50	.
	882 Social Sciences	BIO - Biology	5	.	5	2.37	0.42
		CHM - Chemistry	2	.	2	2.84	0.23
		NAS - Natural Science	1	.	1	2.50	.
Draw conclusions based on evidence	213 Business Administration	BIO - Biology	6	.	3	2.14	1.39
		ENV - Environmental Science	1	.	1	3.00	.
	246 Computer Science	BIO - Biology	4	.	4	2.54	0.42
		CHM - Chemistry	2	.	2	3.17	0.71
		NAS - Natural Science	1	.	.	0.00	.
	699 General Studies	BIO - Biology	14	.	11	2.33	0.75
		CHM - Chemistry	2	.	2	2.84	0.23
		GOL - Geology	1	.	1	2.67	.
		NAS - Natural Science	2	.	2	3.00	0.00
		PHY - Physics	1	.	1	2.33	.
		PSY - Psychology	1	.	1	2.50	.
	831 Engineering	PHY - Physics	3	.	3	3.33	0.29
	880 Science	BIO - Biology	7	.	6	2.33	0.55
		CHM - Chemistry	6	.	6	2.83	0.36
		GOL - Geology	2	.	2	2.50	0.71
		PHY - Physics	3	.	3	2.50	0.17
		PSY - Psychology	1	.	1	3.50	.
	882 Social Sciences	BIO - Biology	5	.	5	2.63	0.49
		CHM - Chemistry	2	.	2	2.67	0.47
		NAS - Natural Science	1	.	1	2.50	.

*Parent Program of student

The following chart identifies career/technical program students by academic plan and discipline of the course they were assessed in with average scores and the number of students who have met the 2.0 college benchmark.

Scientific Literacy Scores by Academic Plan and Discipline
Career & Technical Program Students

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	041 HS Dual credit-HS & College	BIO - Biology	8	.	8	2.44	0.39
	146 Emergency Medical Services	BIO - Biology	4	.	4	2.58	0.50
		PSY - Psychology	1	.	.	1.50	.
	181 Respiratory Therapy	BIO - Biology	1	.	.	1.50	.
	242 Culinary Arts	GOL - Geology	1	.	1	2.33	.
	299 {Information Systems Technology}	BIO - Biology	1	.	1	2.50	.
	335 Horticulture	ENV - Environmental Science	1	.	1	2.67	.
		GOL - Geology	1	.	1	3.50	.
	400 Criminal Justice	BIO - Biology	9	.	8	2.67	0.62
		CHM - Chemistry	1	.	1	2.00	.
		ENV - Environmental Science	2	.	2	2.33	0.00
		GOL - Geology	1	.	1	2.00	.
	427 Fire Science Technology	ENV - Environmental Science	1	.	1	2.67	.
	514 Graphic Design	ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	2.00	.
	520 Interior Design	BIO - Biology	1	.	1	2.00	.
		NAS - Natural Science	1	.	1	3.50	.
	636 Early Childhood Development	BIO - Biology	3	.	1	1.28	0.86
		ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	2.67	.
	640 ASL-English Interpretation	NAS - Natural Science	1	.	1	2.67	.
	729 Comp-Aid Draft and Design Tech	PHY - Physics	2	.	2	2.50	0.71
		PSY - Psychology	2	.	2	2.50	0.71
	746 Maritime Technologies	PHY - Physics	1	.	1	2.33	.
	841 {Electrical Technology}	GOL - Geology	1	.	1	2.00	.
	909 Automotive Technology	CHM - Chemistry	1	.	1	4.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
		PSY - Psychology	1	.	1	2.67	.
	915 Civil Engineering Technology	CHM - Chemistry	1	.	1	2.67	.
		PHY - Physics	1	.	1	2.00	.
	956 Mechanical Engineering Technol	PHY - Physics	1	.	1	2.00	.
	981 Electronics Technology	CHM - Chemistry	1	.	1	2.67	.
		PHY - Physics	2	.	1	1.75	0.35
Demonstrate proper usage of credible and relevant scholarly sources	041 HS Dual credit-HS & College	BIO - Biology	8	.	5	2.17	0.73
	146 Emergency Medical Services	BIO - Biology	4	1	3	2.78	0.39
		PSY - Psychology	1	1	.	.	.
	181 Respiratory Therapy	BIO - Biology	1	.	.	1.50	.
	242 Culinary Arts	GOL - Geology	1	1	.	.	.
	299 {Information Systems Technology}	BIO - Biology	1	.	1	2.00	.
	335 Horticulture	ENV - Environmental Science	1	.	1	2.00	.
		GOL - Geology	1	.	1	3.50	.
	400 Criminal Justice	BIO - Biology	9	.	7	2.44	0.56
		CHM - Chemistry	1	1	.	.	.
		ENV - Environmental Science	2	.	.	1.59	0.12
		GOL - Geology	1	1	.	.	.
	427 Fire Science Technology	ENV - Environmental Science	1	.	1	2.00	.
	514 Graphic Design	ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	1	.	.	.
	520 Interior Design	BIO - Biology	1	.	.	1.50	.
		NAS - Natural Science	1	.	1	3.50	.
	636 Early Childhood Development	BIO - Biology	3	.	1	1.17	1.04
		ENV - Environmental Science	1	.	1	3.50	.
		GOL - Geology	1	.	1	2.00	.
	640 ASL-English Interpretation	NAS - Natural Science	1	.	.	1.67	.
	729 Comp-Aid Draft and Design Tech	PHY - Physics	2	.	2	3.25	1.06
		PSY - Psychology	2	.	2	2.92	0.83
	746 Maritime Technologies	PHY - Physics	1	1	.	.	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	841 {Electrical Technology}	GOL - Geology	1	1	.	.	.
	909 Automotive Technology	CHM - Chemistry	1	.	1	3.50	.
		PSY - Psychology	1	.	1	2.67	.
	915 Civil Engineering Technology	CHM - Chemistry	1	1	.	.	.
		PHY - Physics	1	.	.	1.67	.
	956 Mechanical Engineering Technol	PHY - Physics	1	.	1	2.50	.
	981 Electronics Technology	CHM - Chemistry	1	.	1	3.00	.
		PHY - Physics	2	.	1	1.75	0.35
Identify or apply methods of inquiry that lead to scientific knowledge	041 HS Dual credit-HS & College	BIO - Biology	8	.	7	2.71	0.48
	146 Emergency Medical Services	BIO - Biology	4	.	3	2.50	0.71
		PSY - Psychology	1	.	.	1.50	.
	181 Respiratory Therapy	BIO - Biology	1	.	1	2.00	.
	242 Culinary Arts	GOL - Geology	1	.	1	2.33	.
	299 {Information Systems Technology}	BIO - Biology	1	.	1	2.50	.
	335 Horticulture	ENV - Environmental Science	1	.	1	3.00	.
		GOL - Geology	1	.	1	3.50	.
	400 Criminal Justice	BIO - Biology	9	.	9	2.83	0.67
		CHM - Chemistry	1	.	1	2.50	.
		ENV - Environmental Science	2	.	2	2.42	0.12
		GOL - Geology	1	.	1	2.00	.
	427 Fire Science Technology	ENV - Environmental Science	1	.	1	2.67	.
	514 Graphic Design	ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	2.33	.
	520 Interior Design	BIO - Biology	1	.	.	1.50	.
		NAS - Natural Science	1	.	1	3.50	.
	636 Early Childhood Development	BIO - Biology	3	.	1	1.50	1.00
		ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	3.00	.
	640 ASL-English Interpretation	NAS - Natural Science	1	.	1	2.67	.
	729 Comp-Aid Draft and Design	PHY - Physics	2	.	2	3.09	0.83

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	Tech	PSY - Psychology	2	.	2	3.00	0.00
	746 Maritime Technologies	PHY - Physics	1	.	1	3.00	.
	841 {Electrical Technology}	GOL - Geology	1	.	1	2.00	.
	909 Automotive Technology	CHM - Chemistry	1	.	1	4.00	.
		PSY - Psychology	1	.	1	2.67	.
	915 Civil Engineering Technology	CHM - Chemistry	1	.	1	3.33	.
		PHY - Physics	1	.	1	2.00	.
	956 Mechanical Engineering Technol	PHY - Physics	1	.	1	2.50	.
	981 Electronics Technology	CHM - Chemistry	1	.	1	2.67	.
		PHY - Physics	2	.	1	1.75	0.35
Organize and interpret quantitative or qualitative evidence	041 HS Dual credit-HS & College	BIO - Biology	8	.	7	2.63	0.49
	146 Emergency Medical Services	BIO - Biology	4	.	4	2.58	0.50
		PSY - Psychology	1	.	1	2.00	.
	181 Respiratory Therapy	BIO - Biology	1	.	1	2.00	.
	242 Culinary Arts	GOL - Geology	1	.	1	3.00	.
	299 {Information Systems Technology}	BIO - Biology	1	.	1	2.50	.
	335 Horticulture	ENV - Environmental Science	1	.	1	2.33	.
		GOL - Geology	1	.	1	3.50	.
	400 Criminal Justice	BIO - Biology	9	.	8	2.59	0.90
		CHM - Chemistry	1	.	1	2.00	.
		ENV - Environmental Science	2	.	2	2.34	0.47
		GOL - Geology	1	.	1	2.00	.
	427 Fire Science Technology	ENV - Environmental Science	1	.	1	3.00	.
	514 Graphic Design	ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	.	1.67	.
	520 Interior Design	BIO - Biology	1	.	1	2.00	.
		NAS - Natural Science	1	.	1	3.50	.
	636 Early Childhood Development	BIO - Biology	3	.	1	1.33	1.04
		ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	3.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	640 ASL-English Interpretation	NAS - Natural Science	1	.	1	2.67	.
	729 Comp-Aid Draft and Design Tech	PHY - Physics	2	.	2	3.09	0.83
		PSY - Psychology	2	.	2	2.84	0.23
	746 Maritime Technologies	PHY - Physics	1	.	1	2.33	.
	841 {Electrical Technology}	GOL - Geology	1	.	1	2.33	.
	909 Automotive Technology	CHM - Chemistry	1	.	1	4.00	.
		PSY - Psychology	1	.	1	2.67	.
	915 Civil Engineering Technology	CHM - Chemistry	1	.	1	3.00	.
		PHY - Physics	1	.	1	2.00	.
	956 Mechanical Engineering Technol	PHY - Physics	1	.	1	2.50	.
	981 Electronics Technology	CHM - Chemistry	1	.	1	2.33	.
		PHY - Physics	2	.	1	1.75	0.35
Draw conclusions based on evidence	041 HS Dual credit-HS & College	BIO - Biology	8	.	7	2.71	0.49
	146 Emergency Medical Services	BIO - Biology	4	.	3	2.50	0.80
		PSY - Psychology	1	.	1	2.00	.
	181 Respiratory Therapy	BIO - Biology	1	.	1	2.00	.
	242 Culinary Arts	GOL - Geology	1	.	1	2.33	.
	299 {Information Systems Technology}	BIO - Biology	1	.	1	2.50	.
	335 Horticulture	ENV - Environmental Science	1	.	1	2.00	.
		GOL - Geology	1	.	1	3.50	.
	400 Criminal Justice	BIO - Biology	9	.	7	2.67	0.70
		CHM - Chemistry	1	.	1	2.50	.
		ENV - Environmental Science	2	.	2	2.50	0.24
		GOL - Geology	1	.	1	2.00	.
	427 Fire Science Technology	ENV - Environmental Science	1	.	1	3.00	.
	514 Graphic Design	ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	2.33	.
	520 Interior Design	BIO - Biology	1	.	1	2.00	.
		NAS - Natural Science	1	.	1	3.50	.
	636 Early Childhood Development	BIO - Biology	3	.	1	1.33	1.04

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
		ENV - Environmental Science	1	.	1	4.00	.
		GOL - Geology	1	.	1	2.67	.
	640 ASL-English Interpretation	NAS - Natural Science	1	.	1	2.33	.
	729 Comp-Aid Draft and Design Tech	PHY - Physics	2	.	2	2.67	0.94
		PSY - Psychology	2	.	2	3.09	0.59
	746 Maritime Technologies	PHY - Physics	1	.	1	3.00	.
	841 {Electrical Technology}	GOL - Geology	1	.	1	2.00	.
	909 Automotive Technology	CHM - Chemistry	1	.	1	4.00	.
		PSY - Psychology	1	.	1	2.33	.
	915 Civil Engineering Technology	CHM - Chemistry	1	.	1	3.00	.
		PHY - Physics	1	.	1	2.00	.
	956 Mechanical Engineering Technol	PHY - Physics	1	.	1	3.00	.
	981 Electronics Technology	CHM - Chemistry	1	.	1	2.67	.
		PHY - Physics	2	.	1	1.25	1.06

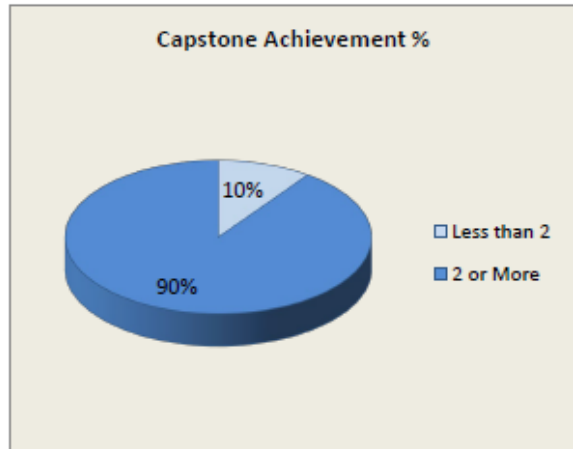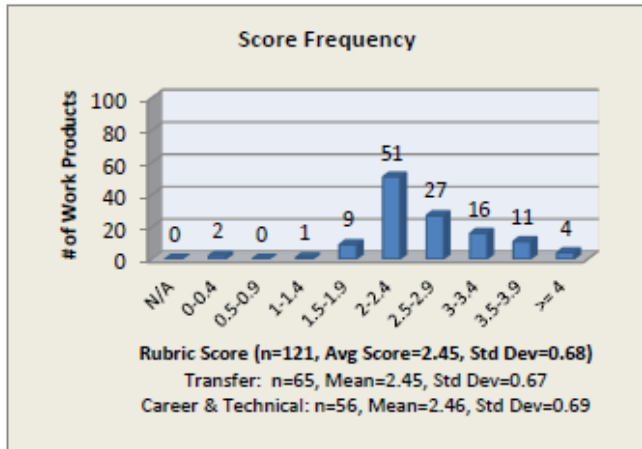## Learning Outcomes - Scientific Literacy

On average, students met or exceeded all five competency learning outcomes (benchmark 2.0). The chart below provides overall scores, as well as score breakdowns for transfer and career/technical program students. See Appendix C (Fall 2023 Scientific Literacy Student Learning Assessment Scores by Program) for additional details.

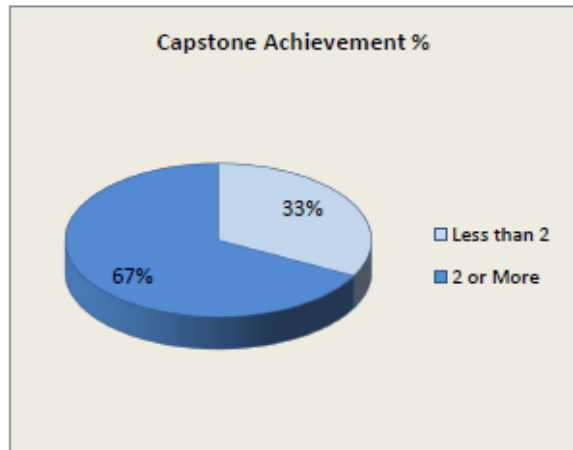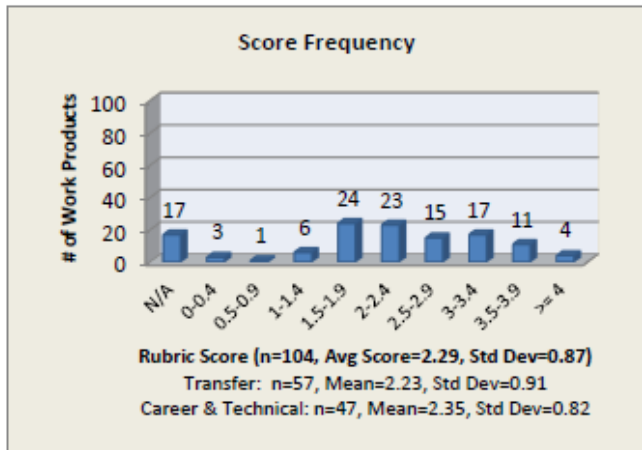*Comparison of Transfer and Career/Technical Program Student Results*

As a community college, TCC is home to students planning to transfer to four-year institutions to continue their academic studies, as well as those enrolled in academic plans which prepare them for employment. A comparison of student learning between those enrolled in a transfer associate degree and those enrolled in a career/technical associate degree shows a slight but statistically insignificant difference between performance. Both groups exceeded the established benchmark of 2.0 for all five learning outcomes. Career/technical program students performed slightly higher with an overall average score of 2.52 while transfer program students had an overall average score of 2.47.

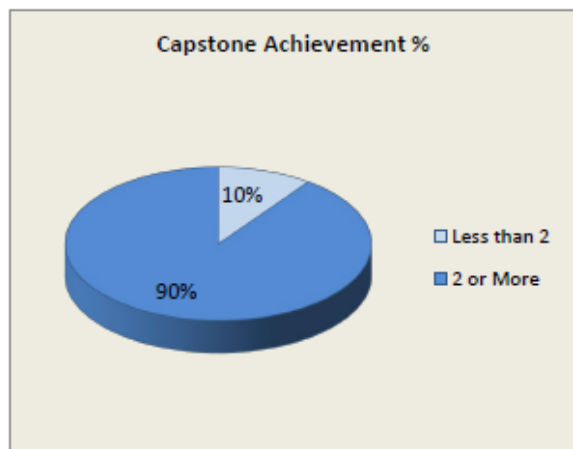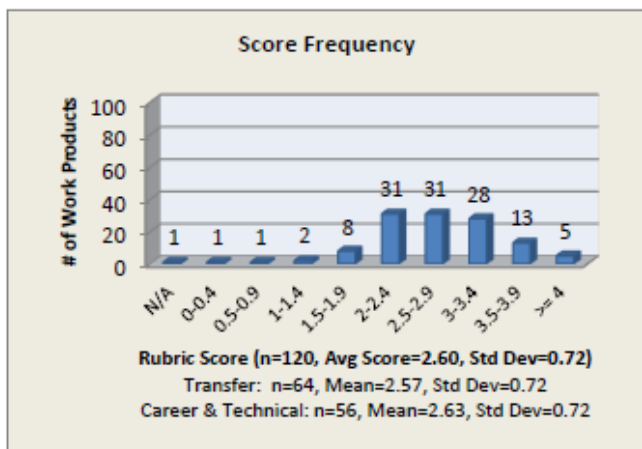| Learning Outcome/Assessment Category	Overall Score	Transfer Program Student Average Score	Career/Technical Program Student Average Score
Apply scientific principles to explain phenomena	2.45	2.45	2.46
Demonstrate proper usage of credible and relevant scholarly sources	2.29	2.23	2.35
Identify or apply methods of inquiry that lead to scientific knowledge	2.60	2.57	2.63
Organize and interpret quantitative or qualitative evidence	2.55	2.55	2.55
Draw conclusions based on evidence	2.54	2.53	2.56

Apply Scientific Principles to Explain Phenomena

Score Frequency

Rubric Score (n=121, Avg Score=2.45, Std Dev=0.68)
Transfer: n=65, Mean=2.45, Std Dev=0.67
Career & Technical: n=56, Mean=2.46, Std Dev=0.69

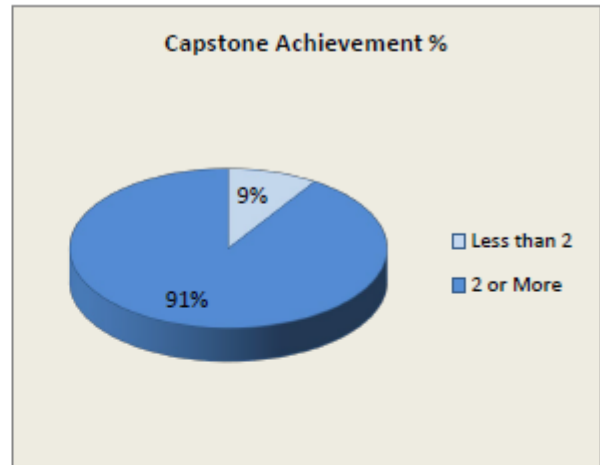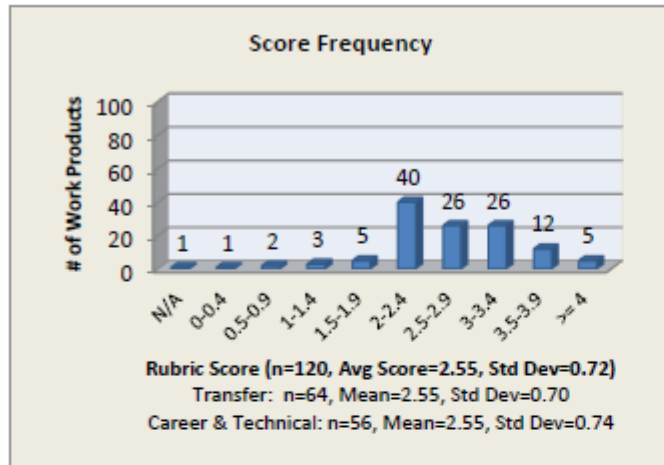### Capstone Achievement %

10% — Less than 2
90% — 2 or More

Demonstrate Proper Usage of Credible and Relevant Scholarly Sources

Score Frequency

Rubric Score (n=104, Avg Score=2.29, Std Dev=0.87)
Transfer: n=57, Mean=2.23, Std Dev=0.91
Career & Technical: n=47, Mean=2.35, Std Dev=0.82

Capstone Achievement %

33% — Less than 2
67% — 2 or More

Identify or Apply Methods of Inquiry that Lead to Scientific Knowledge

Score Frequency

Rubric Score (n=120, Avg Score=2.60, Std Dev=0.72)
Transfer: n=64, Mean=2.57, Std Dev=0.72
Career & Technical: n=56, Mean=2.63, Std Dev=0.72

Capstone Achievement %

10% — Less than 2
90% — 2 or More

Organize and Interpret Quantitative or Qualitative Evidence

Score Frequency

Rubric Score (n=120, Avg Score=2.55, Std Dev=0.72)
Transfer: n=64, Mean=2.55, Std Dev=0.70
Career & Technical: n=56, Mean=2.55, Std Dev=0.74

Capstone Achievement %

9% — Less than 2
91% — 2 or More

Draw Conclusions Based on Evidence

Score Frequency

Rubric Score (n=121, Avg Score=2.54, Std Dev=0.75)
Transfer: n=65, Mean=2.53, Std Dev=0.75
Career & Technical: n=56, Mean=2.56, Std Dev=0.76

Capstone Achievement %

12% — Less than 2
88% — 2 or More

Underrepresented Students – Scientific Literacy

Of the students assessed for Scientific Literacy, 71% are considered underrepresented, defined as being a minority, age 25 or older, or receiving a Pell Grant. These students performed slightly higher on all five learning outcomes than those not in this subgroup. The chart below shows the mean scores of both student groups for comparison.

Underrepresented Students - Scientific Literacy Rubric Score

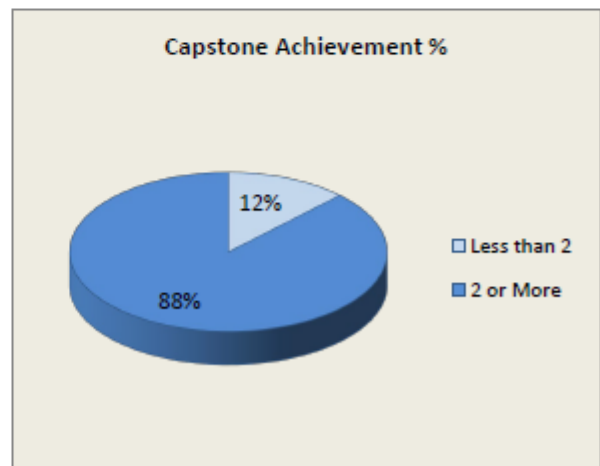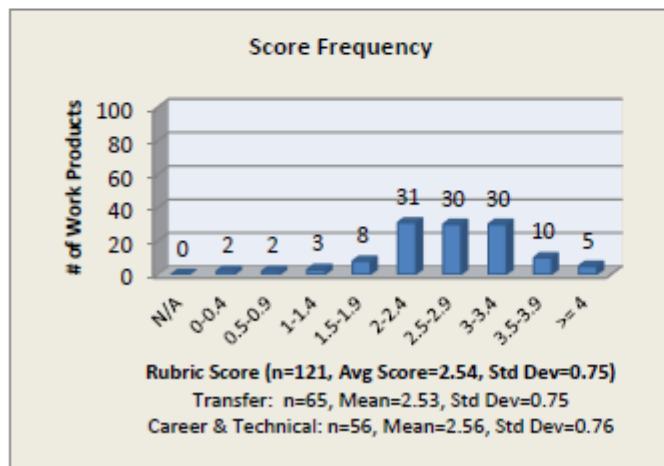| Underrepresented Students	Apply scientific principles to explain phenomena			Demonstrate proper usage of credible and relevant scholarly sources			Identify or apply methods of inquiry		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Yes	86	2.46	0.65	75	2.30	0.81	85	2.62	0.69
No	35	2.45	0.74	29	2.27	1.02	35	2.55	0.78

Underrepresented Students	Organize and interpret quantitative or qualitative evidence			Draw conclusions based on evidence		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Yes	85	2.56	0.69	86	2.54	0.74
No	35	2.53	0.79	35	2.56	0.78

WRITTEN COMMUNICATION (SPRING 2024)

Student Learning – Written Communication

The Office of Institutional Effectiveness provided a random sample of 280 students to assess the written communication competency. Of the students selected, faculty submitted student work products for 85 students, or 30.4% of the requested work products (n=85). Student course withdrawals, students not submitting the competency assignment and faculty not participating in the assessment cycle contributed to the number of reviewed work products. The following chart shows the number of students not assessed and the inaccessible reason.

Reason	Students	Percent
Faculty member did not submit the requested product	148	75.9%
Student did not submit the work product to the instructor	8	4.1%
Student dropped/withdrawn from course	39	20.0%
Total	*195*	*100.0%*

A breakdown of scores by academic plan/pathway, discipline, transfer v. career/technical programs, score frequency and assignment support were provided by OIE. Course level data is available in Appendix B. This information is shared and reviewed with Pathway Deans and discipline faculty during pathway meetings and through professional development sessions offered by the Assessment staff.

The following chart identifies transfer program students by academic plan and discipline of the course they were assessed in with average scores and the number of students who have met the 2.0 college benchmark.

Written Communication Scores by Academic Plan and Discipline
Transfer Program Students

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	213 Business Administration	CST - Communication Studies & Theatre	2	.	2	2.17	0.23
		ENG - English	2	.	2	2.25	0.35
	246 Computer Science	ENG - English	1	.	1	2.00	.
		PHI - Philosophy	1	.	1	2.00	.
	560 Music	CST - Communication Studies & Theatre	1	.	1	2.33	.
	648 Liberal Arts	CST - Communication Studies & Theatre	2	.	2	2.50	0.71
		ENG - English	2	.	2	3.67	0.00
		SSC - Social Science	1	.	1	2.00	.
	699 General Studies	CST - Communication Studies & Theatre	5	.	5	2.37	0.25
		ENG - English	12	.	10	2.31	0.51
		HUM - Humanities	3	.	2	2.56	0.92
		PHI - Philosophy	5	.	3	1.93	0.80
		PLS - Political Science	1	.	1	3.50	.
		SSC - Social Science	2	.	1	2.00	0.47
	831 Engineering	HUM - Humanities	1	.	.	0.50	.
		PHI - Philosophy	1	.	1	2.00	.
	880 Science	CST - Communication Studies & Theatre	2	.	2	2.50	0.24
		ENG - English	1	.	1	2.67	.
		PHI - Philosophy	2	.	2	2.00	0.00
	882 Social Sciences	CST - Communication Studies & Theatre	2	.	1	2.34	0.94
		ENG - English	1	.	1	2.33	.
		HUM - Humanities	1	.	1	3.00	.
		PHI - Philosophy	1	.	1	3.33	.
		SSC - Social Science	1	.	1	2.33	.
Content Development	213 Business Administration	CST - Communication Studies & Theatre	2	.	1	1.92	0.59
		ENG – English	2	.	2	2.25	0.35

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	246 Computer Science	ENG - English	1	.	1	2.00	.
		PHI - Philosophy	1	.	1	2.00	.
	560 Music	CST - Communication Studies & Theatre	1	.	1	2.00	.
	648 Liberal Arts	CST - Communication Studies & Theatre	2	.	1	2.09	0.59
		ENG - English	2	.	2	3.67	0.00
		SSC - Social Science	1	.	.	1.50	.
	699 General Studies	CST - Communication Studies & Theatre	5	.	4	2.13	0.38
		ENG - English	12	.	8	2.07	0.56
		HUM - Humanities	3	.	2	2.39	0.67
		PHI - Philosophy	5	.	3	1.87	0.87
		PLS - Political Science	1	.	1	3.50	.
		SSC - Social Science	2	.	1	1.67	0.47
	831 Engineering	HUM - Humanities	1	.	.	0.50	.
		PHI - Philosophy	1	.	1	2.00	.
	880 Science	CST - Communication Studies & Theatre	2	.	2	2.17	0.23
		ENG - English	1	.	1	2.67	.
		PHI - Philosophy	2	.	1	1.84	0.23
	882 Social Sciences	CST - Communication Studies & Theatre	2	.	1	2.34	0.94
		ENG - English	1	.	1	2.67	.
		HUM - Humanities	1	.	1	3.00	.
		PHI - Philosophy	1	.	1	3.33	.
		SSC - Social Science	1	.	1	2.33	.
Genre and Disciplinary Conventions	213 Business Administration	CST - Communication Studies & Theatre	2	.	2	2.17	0.23
		ENG - English	2	.	1	1.84	0.23
	246 Computer Science	ENG - English	1	.	.	1.50	.
		PHI - Philosophy	1	.	1	2.00	.
	560 Music	CST - Communication Studies & Theatre	1	.	.	1.67	.
	648 Liberal Arts	CST - Communication Studies & Theatre	2	.	1	1.92	0.83
		ENG - English	2	.	2	3.17	0.23
		SSC - Social Science	1	.	.	1.50	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	699 General Studies	CST - Communication Studies & Theatre	5	.	3	2.03	0.48
		ENG - English	12	.	9	2.03	0.70
		HUM - Humanities	3	.	2	2.56	0.92
		PHI - Philosophy	5	.	3	1.87	0.87
		PLS - Political Science	1	.	1	3.50	.
		SSC - Social Science	2	.	1	1.67	0.47
	831 Engineering	HUM - Humanities	1	.	.	0.50	.
		PHI - Philosophy	1	.	1	2.00	.
	880 Science	CST - Communication Studies & Theatre	2	.	2	2.17	0.23
		ENG - English	1	.	1	2.33	.
		PHI - Philosophy	2	.	1	2.00	0.47
	882 Social Sciences	CST - Communication Studies & Theatre	2	.	1	2.34	0.94
		ENG - English	1	.	1	2.67	.
		HUM - Humanities	1	.	1	3.00	.
		PHI - Philosophy	1	.	1	3.33	.
		SSC - Social Science	1	.	1	2.33	.
Sources and Evidence	213 Business Administration	CST - Communication Studies & Theatre	2	1	1	2.00	.
		ENG - English	2	.	1	1.92	0.83
	246 Computer Science	ENG - English	1	.	1	2.50	.
		PHI - Philosophy	1	.	1	2.00	.
	560 Music	CST - Communication Studies & Theatre	1	.	.	1.33	.
	648 Liberal Arts	CST - Communication Studies & Theatre	2	.	2	2.25	0.35
		ENG - English	2	.	2	3.34	0.94
		SSC - Social Science	1	.	.	1.00	.
	699 General Studies	CST - Communication Studies & Theatre	5	.	2	1.80	0.76
		ENG - English	12	1	5	1.68	0.62
		HUM - Humanities	3	.	3	2.67	0.76
		PHI - Philosophy	5	1	1	1.63	0.95
		PLS - Political Science	1	.	1	3.50	.
		SSC - Social Science	2	1	1	2.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	831 Engineering	HUM - Humanities	1	.	.	0.00	.
		PHI - Philosophy	1	.	1	2.00	.
	880 Science	CST - Communication Studies & Theatre	2	2	.	.	.
		ENG - English	1	.	1	2.67	.
		PHI - Philosophy	2	1	1	2.50	.
	882 Social Sciences	CST - Communication Studies & Theatre	2	.	1	2.00	1.41
		ENG - English	1	1	.	.	.
		HUM - Humanities	1	.	1	2.50	.
		PHI - Philosophy	1	.	1	3.00	.
		SSC - Social Science	1	.	.	1.50	.
Control of Syntax and Mechanics	213 Business Administration	CST - Communication Studies & Theatre	2	.	1	1.75	0.35
		ENG - English	2	.	2	2.00	0.00
	246 Computer Science	ENG - English	1	.	.	1.50	.
		PHI - Philosophy	1	.	.	1.50	.
	560 Music	CST - Communication Studies & Theatre	1	.	1	2.00	.
	648 Liberal Arts	CST - Communication Studies & Theatre	2	.	2	2.25	0.35
		ENG - English	2	.	2	3.33	0.00
		SSC - Social Science	1	.	1	2.00	.
	699 General Studies	CST - Communication Studies & Theatre	5	.	4	2.10	0.44
		ENG - English	12	.	10	2.32	0.59
		HUM - Humanities	3	.	2	2.56	0.92
		PHI - Philosophy	5	.	3	1.93	0.80
		PLS - Political Science	1	.	1	3.50	.
		SSC - Social Science	2	.	1	1.84	0.23
	831 Engineering	HUM - Humanities	1	.	.	0.50	.
		PHI - Philosophy	1	.	1	2.00	.
	880 Science	CST - Communication Studies & Theatre	2	.	2	2.17	0.23
		ENG - English	1	.	1	2.67	.
		PHI - Philosophy	2	.	2	2.17	0.23
	882 Social Sciences	CST - Communication Studies & Theatre	2	.	1	2.34	0.94

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
		ENG - English	1	.	1	2.33	.
		HUM - Humanities	1	.	1	3.00	.
		PHI - Philosophy	1	.	1	3.33	.
		SSC - Social Science	1	.	1	2.33	.

*Parent Program of student

The following chart identifies career/technical program students by academic plan and discipline of the course they were assessed in with average scores and the number of students who have met the 2.0 college benchmark.

Written Communication Scores by Academic Plan and Discipline
Career and Technical Program Students

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	042 HS Concurrent-HS credit only	ENG - English	1	.	1	3.33	.
	212 Management	HUM - Humanities	1	.	1	3.00	.
	242 Culinary Arts	CST - Communication Studies & Theatre	1	.	1	2.00	.
		HUM - Humanities	1	.	1	3.00	.
	299 {Information Systems Tech}	PHI - Philosophy	1	.	1	2.67	.
	335 Horticulture	PHI - Philosophy	1	.	1	2.67	.
	345 Cyber Security	CST - Communication Studies & Theatre	2	.	2	2.50	0.24
		ENG - English	3	.	3	3.33	0.29
	400 {Criminal Justice}	CST - Communication Studies & Theatre	1	.	1	2.50	.
		ENG - English	1	.	1	2.50	.
	480 Human Services	ENG - English	1	.	1	2.00	.
		PHI - Philosophy	1	.	.	1.50	.
	514 Graphic Design	ENG - English	3	.	2	2.61	0.98
		HUM - Humanities	1	.	1	2.00	.
		SSC - Social Science	1	.	1	2.67	.
	532 Studio Arts	ENG - English	1	.	1	3.00	.
	636 Early Childhood Development	ENG - English	1	.	1	3.33	.
	640 ASL-English Interpretation	ENG - English	1	.	1	2.67	.
		SSC - Social Science	1	.	.	1.67	.
	706 Mechatronics	PHI - Philosophy	1	.	1	2.00	.
	790 {Diesel Technology}	CST - Communication Studies & Theatre	1	.	1	3.00	.
	841 {Electrical Technology}	ENG - English	2	.	2	3.17	0.71
	904 HVAC/R	PHI - Philosophy	1	.	1	2.50	.
	909 Automotive Technology	ENG - English	1	.	.	1.00	.
	956 Mechanical Engineering Technol	ENG - English	1	.	1	3.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	981 {Electronics Technology}	ENG - English	1	.	1	2.50	.
Content Development	042 HS Concurrent-HS credit only	ENG - English	1	.	1	3.00	.
	212 Management	HUM - Humanities	1	.	1	3.00	.
	242 Culinary Arts	CST - Communication Studies & Theatre	1	.	.	1.67	.
		HUM - Humanities	1	.	1	3.00	.
	299 {Information Systems Tech}	PHI - Philosophy	1	.	1	2.67	.
	335 Horticulture	PHI - Philosophy	1	.	1	2.67	.
	345 Cyber Security	CST - Communication Studies & Theatre	2	.	2	2.67	0.47
		ENG - English	3	.	3	3.33	0.29
	400 {Criminal Justice}	CST - Communication Studies & Theatre	1	.	1	2.50	.
		ENG - English	1	.	1	2.50	.
	480 Human Services	ENG - English	1	.	.	1.67	.
		PHI - Philosophy	1	.	.	1.50	.
	514 Graphic Design	ENG - English	3	.	3	2.94	0.42
		HUM - Humanities	1	.	1	2.00	.
		SSC - Social Science	1	.	1	2.67	.
	532 Studio Arts	ENG - English	1	.	1	3.00	.
	636 Early Childhood Development	ENG - English	1	.	1	3.33	.
	640 ASL-English Interpretation	ENG - English	1	.	1	2.33	.
		SSC - Social Science	1	.	.	1.33	.
	706 Mechatronics	PHI - Philosophy	1	.	.	1.00	.
	790 {Diesel Technology}	CST - Communication Studies & Theatre	1	.	1	3.00	.
	841 {Electrical Technology}	ENG - English	2	.	2	2.84	1.18
	904 HVAC/R	PHI - Philosophy	1	.	1	2.00	.
	909 Automotive Technology	ENG - English	1	.	.	1.00	.
	956 Mechanical Engineering Technol	ENG - English	1	.	1	3.00	.
	981 {Electronics Technology}	ENG - English	1	.	1	2.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Genre and Disciplinary Conventions	042 HS Concurrent-HS credit only	ENG - English	1	.	1	3.00	.
	212 Management	HUM - Humanities	1	.	1	3.00	.
	242 Culinary Arts	CST - Communication Studies & Theatre	1	.	1	2.00	.
		HUM - Humanities	1	.	1	3.00	.
	299 {Information Systems Tech}	PHI - Philosophy	1	.	1	2.33	.
	335 Horticulture	PHI - Philosophy	1	.	1	2.33	.
	345 Cyber Security	CST - Communication Studies & Theatre	2	.	2	2.34	0.47
		ENG - English	3	.	3	3.17	0.29
	400 {Criminal Justice}	CST - Communication Studies & Theatre	1	.	1	2.50	.
		ENG - English	1	.	1	2.50	.
	480 Human Services	ENG - English	1	.	.	1.33	.
		PHI - Philosophy	1	.	1	2.00	.
	514 Graphic Design	ENG - English	3	.	3	2.78	0.69
		HUM - Humanities	1	.	.	1.50	.
		SSC - Social Science	1	.	1	2.33	.
	532 Studio Arts	ENG - English	1	.	1	3.00	.
	636 Early Childhood Development	ENG - English	1	.	1	3.33	.
	640 ASL-English Interpretation	ENG - English	1	.	1	2.33	.
		SSC - Social Science	1	.	.	1.33	.
	706 Mechatronics	PHI - Philosophy	1	.	.	1.00	.
	790 {Diesel Technology}	CST - Communication Studies & Theatre	1	.	1	3.00	.
	841 {Electrical Technology}	ENG - English	2	.	2	3.00	0.47
	904 HVAC/R	PHI - Philosophy	1	.	1	2.00	.
	909 Automotive Technology	ENG - English	1	.	.	1.00	.
	956 Mechanical Engineering Technol	ENG - English	1	.	1	3.00	.
	981 {Electronics Technology}	ENG - English	1	.	1	2.00	.
Sources and Evidence	042 HS Concurrent-HS credit only	ENG - English	1	.	1	3.00	.
	212 Management	HUM - Humanities	1	.	1	3.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	242 Culinary Arts	CST - Communication Studies & Theatre	1	.	.	1.67	.
		HUM - Humanities	1	.	1	2.67	.
	299 {Information Systems Tech}	PHI - Philosophy	1	1	.	.	.
	335 Horticulture	PHI - Philosophy	1	1	.	.	.
	345 Cyber Security	CST - Communication Studies & Theatre	2	.	2	2.34	0.47
		ENG - English	3	.	3	3.17	0.29
	400 {Criminal Justice}	CST - Communication Studies & Theatre	1	.	1	2.50	.
		ENG - English	1	1	.	.	.
	480 Human Services	ENG - English	1	1	.	.	.
		PHI - Philosophy	1	.	.	1.50	.
	514 Graphic Design	ENG - English	3	.	3	2.83	0.29
		HUM - Humanities	1	.	.	0.50	.
		SSC - Social Science	1	.	1	2.33	.
	532 Studio Arts	ENG - English	1	.	1	3.00	.
	636 Early Childhood Development	ENG - English	1	.	1	3.00	.
	640 ASL-English Interpretation	ENG - English	1	.	1	2.00	.
		SSC - Social Science	1	.	.	1.67	.
	706 Mechatronics	PHI - Philosophy	1	.	.	1.00	.
	790 {Diesel Technology}	CST - Communication Studies & Theatre	1	.	1	3.00	.
	841 {Electrical Technology}	ENG - English	2	.	1	2.34	0.94
	904 HVAC/R	PHI - Philosophy	1	.	1	2.00	.
	909 Automotive Technology	ENG - English	1	.	.	1.00	.
	956 Mechanical Engineering Technol	ENG - English	1	.	1	3.00	.
	981 {Electronics Technology}	ENG - English	1	.	.	1.50	.
Control of Syntax and Mechanics	042 HS Concurrent-HS credit only	ENG - English	1	.	1	3.33	.
	212 Management	HUM - Humanities	1	.	1	3.00	.
	242 Culinary Arts	CST - Communication Studies & Theatre	1	.	1	2.00	.
		HUM - Humanities	1	.	1	3.00	.

Assessment Category	Academic Plan	Discipline	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	299 {Information Systems Tech}	PHI - Philosophy	1	.	1	2.67	.
	335 Horticulture	PHI - Philosophy	1	.	1	2.67	.
	345 Cyber Security	CST - Communication Studies & Theatre	2	.	2	2.50	0.71
		ENG - English	3	.	3	3.00	0.00
	400 {Criminal Justice}	CST - Communication Studies & Theatre	1	.	1	2.50	.
		ENG - English	1	.	1	2.00	.
	480 Human Services	ENG - English	1	.	.	1.67	.
		PHI - Philosophy	1	.	1	2.00	.
	514 Graphic Design	ENG - English	3	.	3	2.78	0.69
		HUM - Humanities	1	.	1	2.00	.
		SSC - Social Science	1	.	1	2.67	.
	532 Studio Arts	ENG - English	1	.	1	3.00	.
	636 Early Childhood Development	ENG - English	1	.	1	3.67	.
	640 ASL-English Interpretation	ENG - English	1	.	1	2.33	.
		SSC - Social Science	1	.	.	1.67	.
	706 Mechatronics	PHI - Philosophy	1	.	.	1.00	.
	790 {Diesel Technology}	CST - Communication Studies & Theatre	1	.	1	3.00	.
	841 {Electrical Technology}	ENG - English	2	.	2	3.00	0.47
	904 HVAC/R	PHI - Philosophy	1	.	1	2.50	.
	909 Automotive Technology	ENG - English	1	.	.	1.00	.
	956 Mechanical Engineering Technol	ENG - English	1	.	1	3.00	.
	981 {Electronics Technology}	ENG - English	1	.	.	1.00	.

Learning Outcomes - Written Communication

On average, students met or exceeded all five competency learning outcomes (benchmark 2.0). The chart below provides overall scores, as well as score breakdowns for transfer and career/technical program students. See Appendix D (Spring 2024 Written Communication Student Learning Assessment Scores by Program) for additional details.

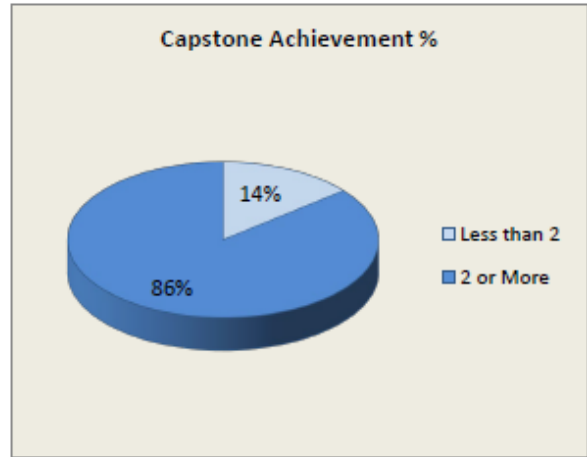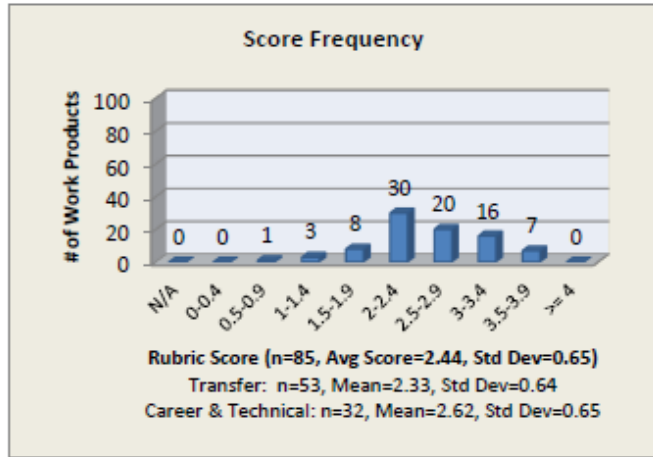*Comparison of Transfer and Career/Technical Results – Written Communication*

As a community college, TCC is home to students planning to transfer to four-year institutions to continue their academic studies, as well as those enrolled in academic plans which prepare them for employment. A comparison of written communication learning between those enrolled in a transfer associate degree and those enrolled in a career/technical associate degree does show differences in performance between transfer and non-transfer students.

Career and technical program students well exceeded the 2.0 benchmark on all 5 competency learning outcomes and had an overall average written communication competency score of 2.49. Students in transfer programs did not meet the benchmark in all competencies, falling just short in the "Sources and Evidence" learning outcome (average score of 1.99) and scoring just over the benchmark in the "Genre and Disciplinary Conventions" learning outcome (average score of 2.12). Transfer program students' overall competency score was a 2.17 which was well below the career and technical program students' overall score of 2.49.
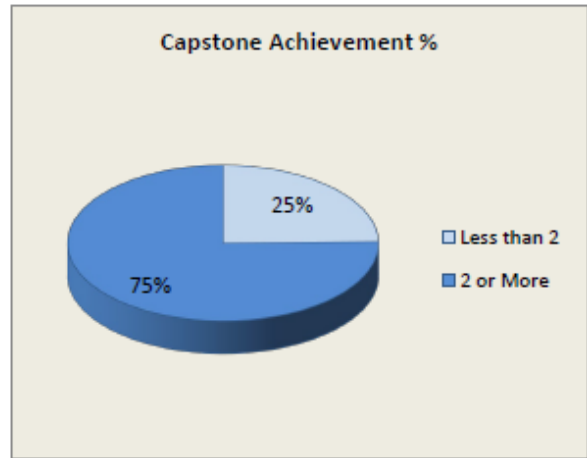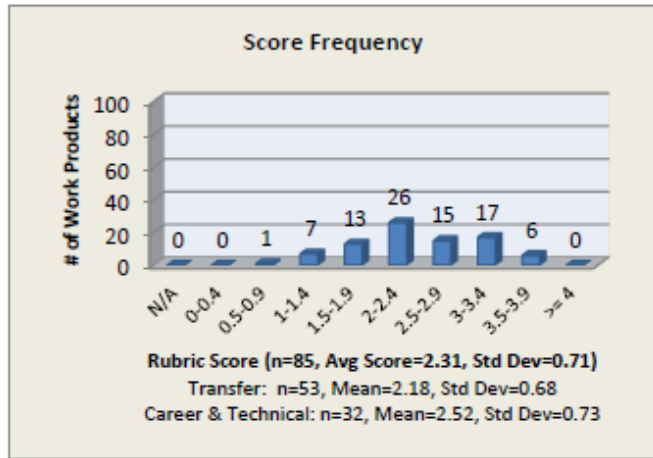
Learning Outcome/Assessment Category	Overall Score	Transfer Program Student Average Score	Career/Technical Program Student Average Score
Context of and Purpose for Writing	2.44	2.33	2.62
Content Development	2.31	2.18	2.52
Genre and Disciplinary Conventions	2.24	2.12	2.45
Sources and Evidence	2.13	1.99	2.35
Control of Syntax and Mechanics	2.33	2.23	2.50

Context of and Purpose for Writing

Score Frequency

Rubric Score (n=85, Avg Score=2.44, Std Dev=0.65)
Transfer: n=53, Mean=2.33, Std Dev=0.64
Career & Technical: n=32, Mean=2.62, Std Dev=0.65

Capstone Achievement %

14% — Less than 2
86% — 2 or More

Content Development

Score Frequency

Rubric Score (n=85, Avg Score=2.31, Std Dev=0.71)
Transfer: n=53, Mean=2.18, Std Dev=0.68
Career & Technical: n=32, Mean=2.52, Std Dev=0.73

Capstone Achievement %

25% — Less than 2
75% — 2 or More

Genre and Disciplinary Conventions

Score Frequency

Rubric Score (n=85, Avg Score=2.24, Std Dev=0.71)
Transfer: n=53, Mean=2.12, Std Dev=0.70
Career & Technical: n=32, Mean=2.45, Std Dev=0.70

Capstone Achievement %

26% — Less than 2
74% — 2 or More

Sources and Evidence

Score Frequency

Rubric Score (n=73, Avg Score=2.13, Std Dev=0.83)
Transfer: n=45, Mean=1.99, Std Dev=0.84
Career & Technical: n=28, Mean=2.35, Std Dev=0.78

Capstone Achievement %

36% — Less than 2
64% — 2 or More

Control of Syntax and Mechanics

Score Frequency

Rubric Score (n=85, Avg Score=2.33, Std Dev=0.68)
Transfer: n=53, Mean=2.23, Std Dev=0.65
Career & Technical: n=32, Mean=2.50, Std Dev=0.71

Capstone Achievement %

20% — Less than 2
80% — 2 or More

Underrepresented Students – Written Communication

Of the students assessed for Written Communication, 66% are considered underrepresented, defined as being a minority, age 25 or older, or receiving a Pell Grant. These students performed similarly to those students not in the subgroup with no significant differences noted.

Underrepresented Students - Written Communication Rubric Score
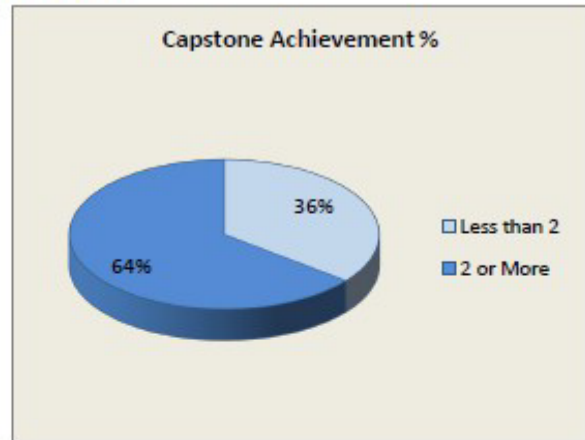
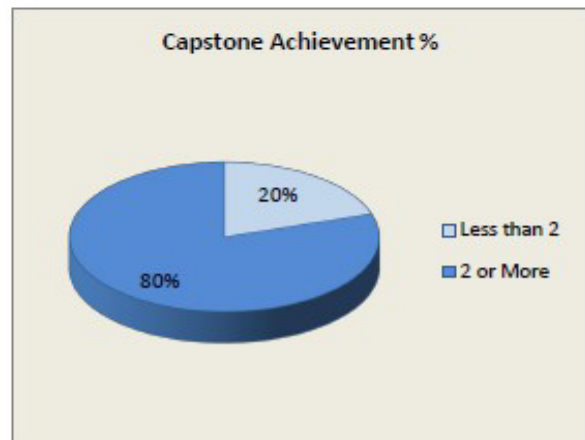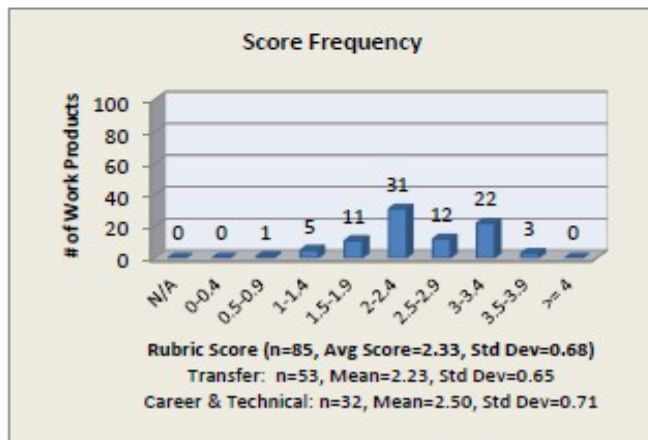| Underrepresented Students	Context of and Purpose for Writing			Content Development			Genre and Disciplinary Conventions		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Yes	56	2.45	0.66	56	2.34	0.69	56	2.27	0.68
No	29	2.42	0.65	29	2.24	0.76	29	2.19	0.78

Underrepresented Students	Sources and Evidence			Control of Syntax and Mechanics		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Yes	48	2.14	0.82	56	2.30	0.68
No	25	2.09	0.86	29	2.38	0.71

ASSIGNMENT DESIGN

In addition to reviewing student learning in general education courses, assessment practices at TCC also include a review of assignments in career/technical courses. While this is not a SCHEV requirement, all TCC courses identify general education competencies on Official Course Outlines, including those not designated as general education. Review of assignments designed to support these competencies provides an opportunity for support of career/technical program faculty as they also work to enhance student learning.

The Office of Institutional Effectiveness provides a small random sample of these courses and assessors review the assignment design to determine whether the assignment supports or does not support the competency learning outcomes. This information is shared and reviewed with Pathway Deans and discipline faculty during pathway meetings and through professional development sessions offered by the Assessment staff.

In **fall 2023**, 10 courses were identified for scientific literacy assignment design review and five assignments were received and assessed. Of those assignments reviewed, it was found that 80% of the assignments supported all of the following learning outcomes, while 20% did not:
- Apply scientific principles to explain phenomena
- Identify or apply methods of inquiry that lead to scientific knowledge
- Organize and interpret quantitative or qualitative evidence
- Draw conclusions based on evidence

Only 60% of the assignments supported the learning outcome "demonstrate proper usage of credible and relevant scholarly sources" and 40% did not.

In **spring 2024**, 10 courses were identified for written communication and four assignments were returned for assessment. Assessors found that all four assignments supported the five learning outcomes identified for the written communication competency.
- Context of and Purpose for Writing
- Content Development
- Genre and Disciplinary Conventions
- Sources and Evidence
- Control of Syntax and Mechanics

ASSESSORS

TCC has historically used a group of volunteer assessors to score student work products and assignment design submissions. Beginning in fall 2023, a small stipend was offered to assessors for the first time and was distributed at the conclusion of the assessment cycles each term.

Assessment scorers are essential to the success of the GEA program. Assessment scorers come from many areas of the college and include full-time and adjunct faculty, academic advisors/counselors, librarians and student services staff. There is consistent involvement from a group of 10-12 experienced assessors who return each semester to score. One or two new assessors are typically added each year, and those assessors receive individual or small group training prior to the first assessment cycle. When student work products and assignment designs are ready for review, new assessors meet with the Director of GEA to complete their first reviews to address questions and to serve as a norming opportunity.

This year, 15 staff and faculty served as scorers in fall 2023 and 12 served as scorers in spring 2024.

Rater agreement is reviewed each semester to determine if additional training and/or norming sessions are needed for assessors. An acceptable percentage of rater agreement has not been determined but will be considered in future assessment cycles.

Fall 2023 Scientific Literacy Rater Agreement

Rubric Description	Rater Score Agreement*	Students Evaluated	Percent
Apply scientific principles to explain phenomena	Yes	100	82.6%
	No	21	17.4%
Total		*121*	*100.0%*
Demonstrate proper usage of credible and relevant scholarly sources	Yes	77	63.6%
	No	44	36.4%
Total		*121*	*100.0%*
Identify or apply methods of inquiry	Yes	96	79.3%
	No	25	20.7%
Total		*121*	*100.0%*
Organize and interpret quantitative or qualitative evidence	Yes	100	82.6%
	No	21	17.4%
Total		*121*	*100.0%*
Draw conclusions based on evidence	Yes	101	83.5%
	No	20	16.5%
Total		*121*	*100.0%*

* Rater agreement is set to 'No' if the difference in the first and second raters' scores was greater than 1 or a score of 'not applicable' was assigned by one rater only (first or second rater)

Rubric Description	Rater Score Agreement*	Students Evaluated	Percent
Context of and Purpose for Writing	Yes	66	77.6%
	No	19	22.4%
Total		*85*	*100.0%*
Content Development	Yes	69	81.2%
	No	16	18.8%
Total		*85*	*100.0%*
Genre and Disciplinary Conventions	Yes	66	77.6%
	No	19	22.4%
Total		*85*	*100.0%*
Sources and Evidence	Yes	54	63.5%
	No	31	36.5%
Total		*85*	*100.0%*
Control of Syntax and Mechanics	Yes	66	77.6%
	No	19	22.4%
Total		*85*	*100.0%*

* Rater agreement is set to 'No' if the difference in the first and second raters' scores was greater than 1 or a score of 'not applicable' was assigned by one rater only (first or second rater)

SUMMARY

Student learning in general education is influenced by faculty and staff across the college. Individuals from Academic Affairs, Student Affairs, Institutional Effectiveness, Governance, Libraries, full-time and adjunct teaching faculty, and students all contribute to the general education assessment process. The goal is to improve student learning, promote best practices in assessment, and effectively communicate assessment activities college wide. This network of individuals works together to support SACSCOC accreditation standards, SCHEV requirements, VCCS reporting, and specialized accreditation efforts.

GEA Leadership

This year, GEA leadership participated in the following:
- Faculty Professional Development sessions offered through the Center for Teaching Excellence to review 2022-2023 data results

- o Civic Engagement – one for transfer programs, one for career/technical programs
- o Professional Readiness – one for transfer programs, one for career/technical programs
- College governance committees to include the Instruction and General Education Committees, charges in 2023-2024 for these committees supported the goals of GEA
  - o General Education Committee - "Collaborate with the Professional Development Committee to use general education assessment findings to determine, design, and implement strategies and faculty professional development opportunities"
  - o Instruction Committee – Annual review of TCC-adapted VALUE rubrics
- Review ways to further engage faculty in use of student learning results including collecting anecdotal data for the addition of a short addendum, "Using Assessment Results" report to create a two- year reporting structure
- GEA presentations at Faculty Professional Development Day, New Faculty Academy, Academic Affairs Council, and Dual Enrollment Orientations
- One-on-one meetings and communication with full-time and adjunct faculty to provide an overview of the GEA process
- One-on-one meetings and communication with full-time and adjunct faculty to discuss assignment design and student work products
- Assessment scorer training held individually or in small groups for new and returning scorers, as needed

Governance Committees

Shared governance is a priority at TCC and governance committees play an important role in the general education assessment process.

The General Education Committee's goal (GEC) is to improve the quality and relevance of the general education curriculum. During the 2023-2024 academic year, the GEC accepted three charges.
- Collaborate with the Professional Development Committee to use general education assessment findings to determine, design, and implement strategies and faculty professional development opportunities to foster student learning
- Collaborate with the Curriculum Committee to examine and recommend course eligibility for non-UCGS general education courses to remain as general education core requirements (renewed for 2024-2025)
- Draft a college procedure to propose inclusion of courses to the VCCS's UCGS (renewed for 2024-2025)

The Instruction Committee (IC) makes recommendations on instructional matters that impact the college's mission and is responsible for reviewing General Education Competency Rubrics each year. In 2023-2024, the committee revised and published the Critical Thinking and Quantitative Literacy rubrics utilizing feedback from pathway deans and faculty to guide their efforts. The IC determined it is best to review two rubrics a year, instead of a single rubric as they have been doing. This allows the committee to review and update both rubrics being assessed the following year.

The Instruction Committee updated the Scientific Literacy rubric in May of 2023 and the Written Communication rubric in May of 2021.

Transfer Program Students

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	BIO 101	14	.	13	2.44	0.62
	BIO 102	8	.	6	1.98	0.89
	BIO 106	6	.	4	2.31	1.06
	BIO 141	4	.	3	1.96	0.34
	BIO 142	4	.	4	2.46	0.71
	CHM 111	8	.	8	2.46	0.31
	CHM 112	4	.	4	2.88	0.37
	ENV 121	1	.	1	3.50	.
	GOL 111	2	.	2	2.92	0.83
	GOL 112	1	.	1	2.00	.
	NAS 131	2	.	2	2.59	0.12
	NAS 132	2	.	2	2.17	0.23
	PHY 100	1	.	1	2.33	.
	PHY 201	2	.	2	2.75	0.35
	PHY 241	4	.	4	2.92	0.68
	PSY 200	2	.	2	3.09	0.59
Demonstrate proper usage of credible and relevant scholarly sources	BIO 101	14	.	11	2.36	0.84
	BIO 102	8	2	2	1.42	1.19
	BIO 106	6	.	3	2.03	1.03
	BIO 141	4	.	2	1.79	0.46
	BIO 142	4	.	2	2.25	0.78
	CHM 111	8	4	2	2.38	1.03
	CHM 112	4	1	3	3.11	0.19
	ENV 121	1	.	1	3.50	.
	GOL 111	2	.	2	2.75	0.35
	GOL 112	1	.	.	1.50	.
	NAS 131	2	.	2	2.17	0.23
	NAS 132	2	.	1	1.25	1.06
	PHY 100	1	.	.	1.67	.
	PHY 201	2	.	2	2.75	0.35
	PHY 241	4	.	3	2.67	0.78

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	PSY 200	2	1	1	3.50	.
Identify or apply methods of inquiry that lead to scientific knowledge	BIO 101	14	.	14	2.62	0.62
	BIO 102	8	.	6	1.96	1.01
	BIO 106	6	1	3	2.33	1.05
	BIO 141	4	.	3	2.00	0.41
	BIO 142	4	.	4	2.54	0.66
	CHM 111	8	.	8	2.67	0.31
	CHM 112	4	.	4	3.34	0.45
	ENV 121	1	.	1	3.00	.
	GOL 111	2	.	2	3.09	0.59
	GOL 112	1	.	1	2.00	.
	NAS 131	2	.	2	2.84	0.23
	NAS 132	2	.	2	2.00	0.00
	PHY 100	1	.	1	2.67	.
	PHY 201	2	.	2	2.92	0.59
	PHY 241	4	.	4	3.08	0.55
	PSY 200	2	.	2	3.09	0.59
Organize and interpret quantitative or qualitative evidence	BIO 101	14	.	14	2.52	0.50
	BIO 102	8	1	5	1.83	1.08
	BIO 106	6	.	4	2.31	1.04
	BIO 141	4	.	3	1.96	0.34
	BIO 142	4	.	4	2.50	0.43
	CHM 111	8	.	8	2.67	0.25
	CHM 112	4	.	4	3.21	0.46
	ENV 121	1	.	1	3.50	.
	GOL 111	2	.	2	3.09	0.59
	GOL 112	1	.	1	2.50	.
	NAS 131	2	.	2	3.00	0.00
	NAS 132	2	.	2	2.25	0.35
	PHY 100	1	.	1	2.33	.
	PHY 201	2	.	2	2.92	0.59
	PHY 241	4	.	4	3.08	0.55
	PSY 200	2	.	2	3.00	0.71
Draw conclusions based on	BIO 101	14	.	14	2.67	0.55

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
evidence	BIO 102	8	.	5	1.90	1.03
	BIO 106	6	.	3	2.39	1.01
	BIO 141	4	.	3	2.00	0.41
	BIO 142	4	.	4	2.58	0.32
	CHM 111	8	.	8	2.75	0.24
	CHM 112	4	.	4	3.09	0.59
	ENV 121	1	.	1	3.00	.
	GOL 111	2	.	2	2.84	0.23
	GOL 112	1	.	1	2.00	.
	NAS 131	2	.	2	3.00	0.00
	NAS 132	2	.	1	1.25	1.77
	PHY 100	1	.	1	2.33	.
	PHY 201	2	.	2	2.59	0.12
	PHY 241	4	.	4	3.08	0.55
	PSY 200	2	.	2	3.00	0.71

*Course-level results should be used with caution. Results at the course level may not be representative of actual course-level outcomes due to small sample sizes.

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	BIO 101	17	.	15	2.35	0.73
	BIO 102	1	.	1	2.00	.
	BIO 106	6	.	5	2.47	0.64
	BIO 142	3	.	2	2.28	0.75
	CHM 101	1	.	1	4.00	.
	CHM 111	3	.	3	2.45	0.39
	ENV 121	6	.	6	3.00	0.79
	GOL 105	1	.	1	2.00	.
	GOL 110	1	.	1	3.50	.
	GOL 111	4	.	4	2.25	0.32
	NAS 132	2	.	2	3.09	0.59
	PHY 100	1	.	1	2.33	.
	PHY 201	6	.	5	2.08	0.49
	PSY 200	4	.	3	2.29	0.67
Demonstrate proper usage of credible and relevant scholarly sources	BIO 101	17	.	11	2.10	0.84
	BIO 102	1	1	.	.	.
	BIO 106	6	.	4	2.28	0.58
	BIO 142	3	.	2	2.28	0.75
	CHM 101	1	.	1	3.50	.
	CHM 111	3	2	1	3.00	.
	ENV 121	6	.	4	2.45	1.04
	GOL 105	1	1	.	.	.
	GOL 110	1	.	1	3.50	.
	GOL 111	4	3	1	2.00	.
	NAS 132	2	.	1	2.59	1.29
	PHY 100	1	1	.	.	.
	PHY 201	6	.	4	2.36	0.90
	PSY 200	4	1	3	2.83	0.60
Identify or apply methods of inquiry that lead to scientific knowledge	BIO 101	17	.	13	2.49	0.77
	BIO 102	1	.	.	1.50	.
	BIO 106	6	.	6	2.72	0.77

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	BIO 142	3	.	3	2.50	0.50
	CHM 101	1	.	1	4.00	.
	CHM 111	3	.	3	2.83	0.44
	ENV 121	6	.	6	3.08	0.74
	GOL 105	1	.	1	2.33	.
	GOL 110	1	.	1	3.50	.
	GOL 111	4	.	4	2.33	0.47
	NAS 132	2	.	2	3.09	0.59
	PHY 100	1	.	1	3.00	.
	PHY 201	6	.	5	2.36	0.74
	PSY 200	4	.	3	2.54	0.71
Organize and interpret quantitative or qualitative evidence	BIO 101	17	.	14	2.43	0.78
	BIO 102	1	.	1	2.00	.
	BIO 106	6	.	5	2.42	1.02
	BIO 142	3	.	3	2.44	0.51
	CHM 101	1	.	1	4.00	.
	CHM 111	3	.	3	2.44	0.51
	ENV 121	6	.	6	3.00	0.84
	GOL 105	1	.	.	1.67	.
	GOL 110	1	.	1	3.50	.
	GOL 111	4	.	4	2.58	0.50
	NAS 132	2	.	2	3.09	0.59
	PHY 100	1	.	1	2.33	.
	PHY 201	6	.	5	2.36	0.74
	PSY 200	4	.	4	2.59	0.42
Draw conclusions based on evidence	BIO 101	17	.	14	2.47	0.79
	BIO 102	1	.	.	1.33	.
	BIO 106	6	.	4	2.53	0.76
	BIO 142	3	.	3	2.56	0.51
	CHM 101	1	.	1	4.00	.
	CHM 111	3	.	3	2.72	0.25
	ENV 121	6	.	6	3.00	0.84
	GOL 105	1	.	1	2.33	.
	GOL 110	1	.	1	3.50	.

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	GOL 111	4	.	4	2.25	0.32
	NAS 132	2	.	2	2.92	0.83
	PHY 100	1	.	1	3.00	.
	PHY 201	6	.	5	2.14	0.99
	PSY 200	4	.	4	2.63	0.64

*Course-level results should be used with caution. Results at the course level may not be representative of actual course-level outcomes due to small sample sizes.

Transfer Program Students

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	CST 130	3	.	3	2.33	0.34
	CST 151	11	.	10	2.38	0.41
	ENG 111	4	.	3	2.21	0.37
	ENG 112	11	.	10	2.30	0.51
	ENG 113	1	.	1	3.67	.
	ENG 125	2	.	2	3.17	0.71
	ENG 245	1	.	1	2.33	.
	HUM 220	1	.	.	0.50	.
	HUM 256	3	.	2	2.72	0.95
	HUM 259	1	.	1	2.50	.
	PHI 100	4	.	3	2.08	0.69
	PHI 220	6	.	5	2.11	0.75
	PLS 241	1	.	1	3.50	.
	SSC 210	4	.	3	2.08	0.32
Content Development	CST 130	3	.	2	2.17	0.60
	CST 151	11	.	8	2.11	0.41
	ENG 111	4	.	2	1.88	0.60
	ENG 112	11	.	9	2.23	0.50
	ENG 113	1	.	1	3.67	.
	ENG 125	2	.	2	3.17	0.71
	ENG 245	1	.	1	2.00	.
	HUM 220	1	.	.	0.50	.
	HUM 256	3	.	2	2.56	0.77
	HUM 259	1	.	1	2.50	.
	PHI 100	4	.	3	2.00	0.82
	PHI 220	6	.	4	2.06	0.77
	PLS 241	1	.	1	3.50	.
	SSC 210	4	.	2	1.79	0.46
Genre and Disciplinary Conventions	CST 130	3	.	3	2.33	0.34
	CST 151	11	.	6	2.00	0.50
	ENG 111	4	.	3	2.00	0.72

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	ENG 112	11	.	7	1.96	0.62
	ENG 113	1	.	1	3.33	.
	ENG 125	2	.	2	3.00	0.00
	ENG 245	1	.	1	2.00	.
	HUM 220	1	.	.	0.50	.
	HUM 256	3	.	2	2.72	0.95
	HUM 259	1	.	1	2.50	.
	PHI 100	4	.	3	2.08	0.83
	PHI 220	6	.	4	2.06	0.77
	PLS 241	1	.	1	3.50	.
	SSC 210	4	.	2	1.79	0.46
Sources and Evidence	CST 130	3	2	1	3.00	.
	CST 151	11	1	5	1.78	0.64
	ENG 111	4	1	1	1.44	0.92
	ENG 112	11	1	6	1.97	0.62
	ENG 113	1	.	1	4.00	.
	ENG 125	2	.	1	2.09	0.83
	ENG 245	1	.	1	2.00	.
	HUM 220	1	.	.	0.00	.
	HUM 256	3	.	3	2.67	0.76
	HUM 259	1	.	1	2.50	.
	PHI 100	4	.	3	2.13	0.85
	PHI 220	6	2	2	1.88	0.85
	PLS 241	1	.	1	3.50	.
	SSC 210	4	1	1	1.50	0.50
Control of Syntax and Mechanics	CST 130	3	.	2	2.17	0.60
	CST 151	11	.	9	2.09	0.40
	ENG 111	4	.	3	2.17	0.43
	ENG 112	11	.	9	2.24	0.59
	ENG 113	1	.	1	3.33	.
	ENG 125	2	.	2	3.17	0.23
	ENG 245	1	.	1	2.00	.
	HUM 220	1	.	.	0.50	.
	HUM 256	3	.	2	2.72	0.95
	HUM 259	1	.	1	2.50	.

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	PHI 100	4	.	2	2.04	0.77
	PHI 220	6	.	5	2.11	0.75
	PLS 241	1	.	1	3.50	.
	SSC 210	4	.	3	2.00	0.27

*Course-level results should be used with caution. Results at the course level may not be representative of actual course-level outcomes due to small sample sizes.

Career & Technical Program Students

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	CST 151	5	.	5	2.50	0.37
	ENG 111	3	.	2	2.06	0.92
	ENG 112	12	.	11	2.86	0.61
	ENG 113	1	.	1	3.33	.
	ENG 125	1	.	1	3.67	.
	HUM 256	3	.	3	2.67	0.58
	PHI 100	1	.	1	2.67	.
	PHI 220	4	.	3	2.17	0.53
	SSC 210	2	.	1	2.17	0.71
Content Development	CST 151	5	.	4	2.50	0.55
	ENG 111	3	.	2	1.83	0.76
	ENG 112	12	.	11	2.82	0.58
	ENG 113	1	.	1	3.33	.
	ENG 125	1	.	1	3.67	.
	HUM 256	3	.	3	2.67	0.58
	PHI 100	1	.	1	2.67	.
	PHI 220	4	.	2	1.79	0.71
	SSC 210	2	.	1	2.00	0.95
Genre and Disciplinary Conventions	CST 151	5	.	5	2.43	0.44
	ENG 111	3	.	2	2.06	0.92
	ENG 112	12	.	11	2.71	0.64
	ENG 113	1	.	1	3.33	.
	ENG 125	1	.	1	3.33	.
	HUM 256	3	.	2	2.50	0.87
	PHI 100	1	.	1	2.33	.
	PHI 220	4	.	3	1.83	0.58
	SSC 210	2	.	1	1.83	0.71
Sources and Evidence	CST 151	5	.	4	2.37	0.53
	ENG 111	3	1	.	1.34	0.47
	ENG 112	12	1	10	2.77	0.56
	ENG 113	1	.	1	3.00	.

Assessment Category	Course	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
	ENG 125	1	.	1	3.00	.
	HUM 256	3	.	2	2.06	1.36
	PHI 100	1	1	.	.	.
	PHI 220	4	1	1	1.50	0.50
	SSC 210	2	.	1	2.00	0.47
Control of Syntax and Mechanics	CST 151	5	.	5	2.50	0.50
	ENG 111	3	.	2	1.89	0.84
	ENG 112	12	.	10	2.67	0.77
	ENG 113	1	.	1	3.33	.
	ENG 125	1	.	1	3.33	.
	HUM 256	3	.	3	2.67	0.58
	PHI 100	1	.	1	2.67	.
	PHI 220	4	.	3	2.04	0.75
	SSC 210	2	.	1	2.17	0.71

*Course-level results should be used with caution. Results at the course level may not be representative of actual course-level outcomes due to small sample sizes.

Transfer Program Students

Assessment Category	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	65	.	59	2.45	0.67
Demonstrate proper usage of credible and relevant scholarly sources	65	8	37	2.23	0.91
Identify or apply methods of inquiry that lead to scientific knowledge	65	1	59	2.57	0.72
Organize and interpret quantitative or qualitative evidence	65	1	59	2.55	0.70
Draw conclusions based on evidence	65	.	57	2.53	0.75
Overall	325	10	271	2.47	0.75

Career and Technical Program Students

Assessment Category	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Apply scientific principles to explain phenomena	56	.	50	2.46	0.69
Demonstrate proper usage of credible and relevant scholarly sources	56	9	33	2.35	0.82
Identify or apply methods of inquiry that lead to scientific knowledge	56	.	49	2.63	0.72
Organize and interpret quantitative or qualitative evidence	56	.	50	2.55	0.74
Draw conclusions based on evidence	56	.	49	2.56	0.76
Overall	280	9	231	2.52	0.75

Transfer Program Students

Assessment Category	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	53	.	45	2.33	0.64
Content Development	53	.	38	2.18	0.68
Genre and Disciplinary Conventions	53	.	36	2.12	0.70
Sources and Evidence	53	8	27	1.99	0.84
Control of Syntax and Mechanics	53	.	41	2.23	0.65
Overall	265	8	187	2.17	0.70

Career and Technical Program Students

Assessment Category	Students Assessed	Not Applicable	Score >=2	Average Score	Standard Deviation
Context of and Purpose for Writing	32	.	28	2.62	0.65
Content Development	32	.	26	2.52	0.73
Genre and Disciplinary Conventions	32	.	27	2.45	0.70
Sources and Evidence	32	4	20	2.35	0.78
Control of Syntax and Mechanics	32	.	27	2.50	0.71
Overall	160	4	128	2.49	0.71