

CMU Campus Assessment Update

Summer, 2016

This year campus faculty were focused on assessing student learning in Essential Learning courses. Additionally, learning outcomes assessment reports have been written for about 90% of all programs.

New Institutional Student Learning Outcomes

Four years ago, a working group was formed to create student learning outcomes based on the Lumina Foundation's Degree Qualifications Profile. At that time, the members of the group chose to focus on four of the five basic areas in the DQP to assess: Specialized Knowledge, Applied Learning (the committee combined these two areas into one outcome), and the Intellectual Skills of Communication Fluency, Quantitative Fluency, and Critical Thinking. The members believed that was a good starting point for the institution but also determined that was not the stopping point of assessment. Areas such as ethical reasoning, information literacy and civic learning were also discussed as future learning outcomes.

Assessment has grown throughout the institution demonstrated by the campus-wide reports that have been produced. A large number of programs already include assessment of ethical reasoning, listing this skill as specialized knowledge. The authors of the DQP have also drafted a new 2.0 version which has enhanced the intellectual skills area to include ethical reasoning and use of information resources. Based on this knowledge, faculty wrote both information literacy and ethical reasoning into the new graduate student learning outcomes.

The Assessment Committee followed suit and created new SLOs for the associate and baccalaureate level as well:

Information Literacy

Associate: Identify, utilize and cite various sources of information in academic assignments, projects or performances.

Baccalaureate: Find relevant sources of information, evaluate information critically, and apply the information appropriately and effectively to specific purposes.

Ethical Reasoning

Associate: Identify ethical situations and recognize their social, professional or legal implications.

Baccalaureate: Analyze ethical situations in terms of their social, professional or legal consequences; and evaluate possible solutions to ethical dilemmas.

The new outcomes were presented to Faculty Senate and will be added to the existing institutional outcomes in the near future.

The Committee also reviewed the assessment portion of five program reviews and provided feedback to the faculty. A report will be sent to Faculty Senate this fall.

Assessment Committee Activities

As of summer, 2016, the Assessment Committee has reviewed the majority of program reports from associate degree and technical certificate programs. Reviews were sent to department heads and assessment representatives to share with program faculty. The assessment portion of five program reviews was also reviewed with the report submitted to Faculty Senate. The Director of Assessment of Student Learning and/or the Faculty Coordinator of Assessment met with each external reviewer to discuss program assessment.

Program Assessment

The newest step in the assessment process is the 3-year summary report. A template was developed for program faculty to use that will help with consistency of reporting across campuses and programs. Programs in Cycles 1 and 2 from the Program Review Manual will be submitting the 3-year summary report in fall, 2016.

Essential Learning

Both the Written Communication and Critical Thinking outcomes were assessed in fall, 2015. The assessment report and review are in found in Appendix A. The first pilot assessment was performed on Oral Communication using artifacts from the Essential Speech courses. Based on this pilot, the review group believes that the AAC&U VALUE rubric for oral communication will work well for this assessment. A second pilot with more artifacts and reviewers will be conducted in the fall of 2016.

ETS Proficiency Profile

The ETS Proficiency Profile was administered in both the fall and spring semesters. Analysis of the results is in Appendix B.

Appendix A
Report of Essential Learning Review
December 2015/January 2016

Calibration of the artifacts in Written Communication and Critical Thinking took place on December 15, 2015. Two groups of faculty met to discuss the process of reviewing the Essential Learning outcomes, discussing previous scored artifacts and calibrating one artifact to assure all understood what was to be done. Members of the group were:

Written Communication

Robin Calland
Kate Dreiling
Kurt Haas
Alison Harris
Vince Patarino
Judy Williams

Critical Thinking

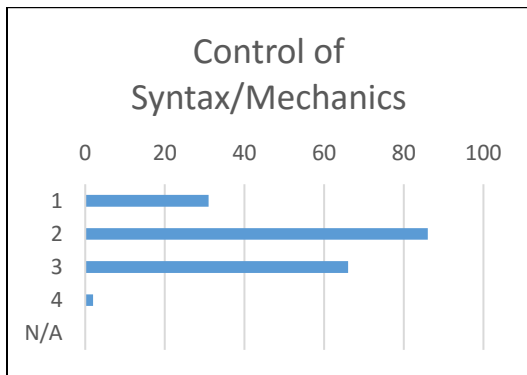
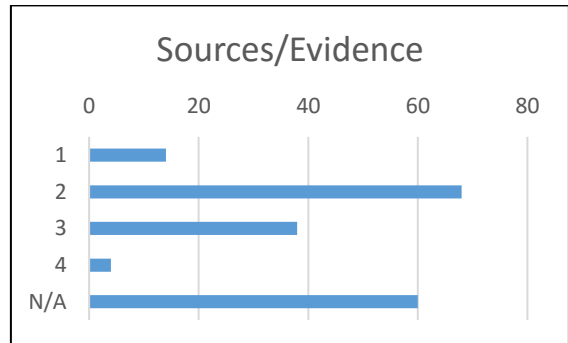
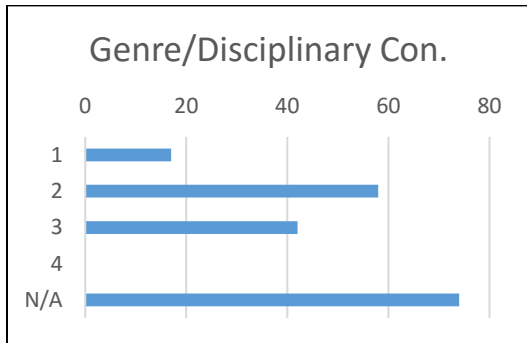
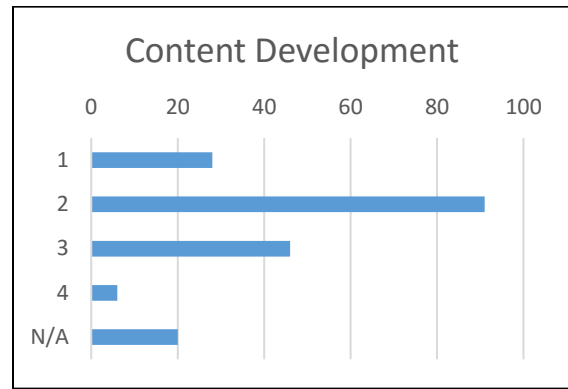
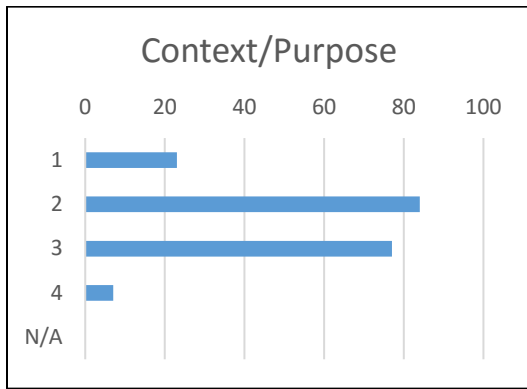
Olga Grisak
Suzanne Lay
Gary Looft
Shanell Sanchez
Steve Werman
Bill Wright

Written Communication

Six reviewers scored artifacts from English 111 and 112; and the Fine and Performing Arts. The sessions took approximately 2.5 hours to complete. Each faculty member received approximately 20 artifacts to score over the course of 5 weeks. Score sheets were submitted and data compiled. Each criteria score was averaged and the results are as follows:

	Fall, 2015	Spring, 2015
	Average	Average
Context and Purpose for Writing	2.34	2.46
Content Development	2.18	2.25
Genre and Disciplinary Conventions	2.20	2.20
Sources and Evidence	2.22	2.07
Control of Syntax and Mechanics	2.19	2.31
Total rubric average	2.23	2.26

The group determined that, if the instructor stated a certain criterion was not required for the artifact, the scorers would give that criteria a not applicable. There were many more 'n/a's' in this review than in the spring review which may have altered the results. The majority that were not applicable were in the Genre/Disciplinary Content Criterion which needs to be examined more closely for revision or clarification in future reviews. The other criterion with the most not-applicable scores was sources/evidence. Again, a discussion should be based on having this criterion be a requirement for submission of artifacts for EL. The following graphically demonstrate the numbers of student scores per criteria.



Using a metarubric, such as the VALUE rubric, to score across a broad range of artifacts and contexts can cause some consistency and inter-rater reliability issues. In general, a Krippendorff's alpha of .667 demonstrates tentative acceptable conclusions for inter-rater reliability. (Krippendorff, 2004) The results for Written Communication indicated that the alphas were generally much lower than indicated for Krippendorff's and as a result, further review was indicated. The results were as follows:

Context/ Purpose

Number of rating pairs (2 raters on same artifact)	96	
Pairs in agreement	45	47%
Krippendorff's alpha (ordinal)	0.3617	

Content Development

Number of rating pairs (2 raters on same artifact)	85	
Pairs in agreement	35	41%
Krippendorff's alpha (ordinal)	0.2549	

Genre/ Disciplinary Conventions

Number of rating pairs (2 raters on same artifact)	59	
Pairs in agreement	29	49%
Krippendorff's alpha (ordinal)	0.0512	

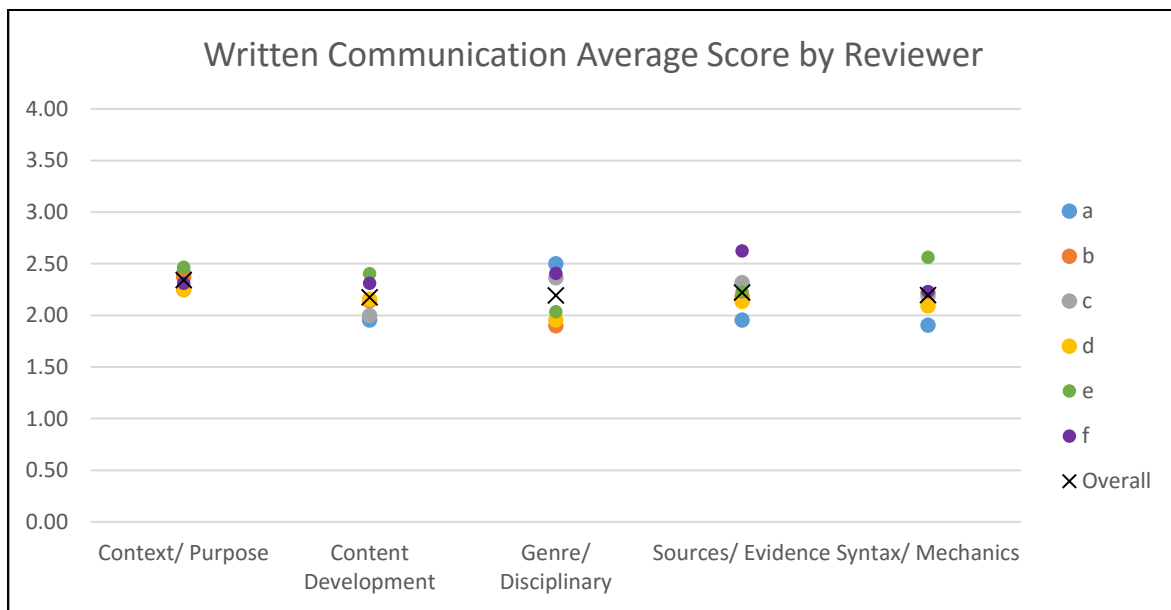
Sources/ Evidence

Number of rating pairs (2 raters on same artifact)	60	
Pairs in agreement	26	43%
Krippendorff's alpha (ordinal)	0.3206	

Syntax/ Mechanics

Number of rating pairs (2 raters on same artifact)	90	
Pairs in agreement	37	41%
Krippendorff's alpha (ordinal)	0.3839	

Average scores were much closer when compared to the spring results, however there were one or two outliers for some criteria:

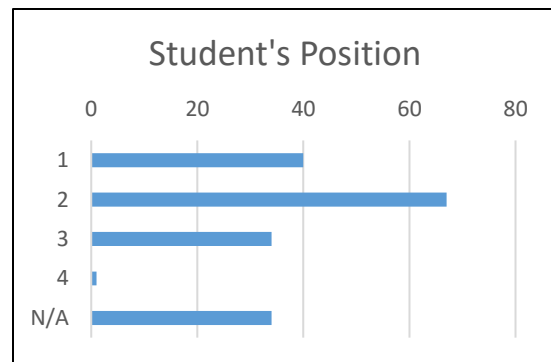
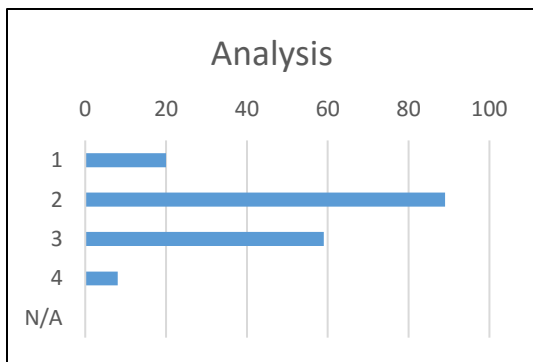
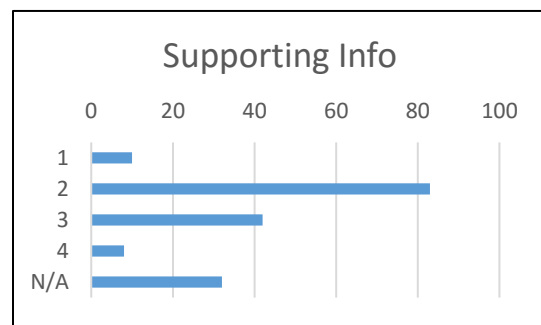
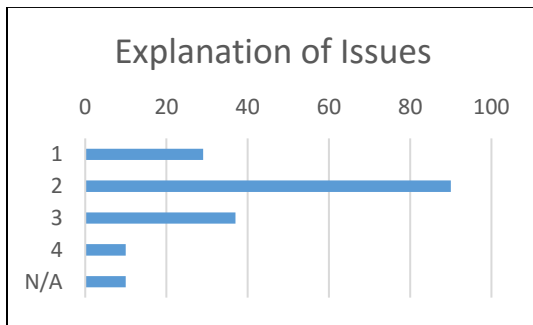


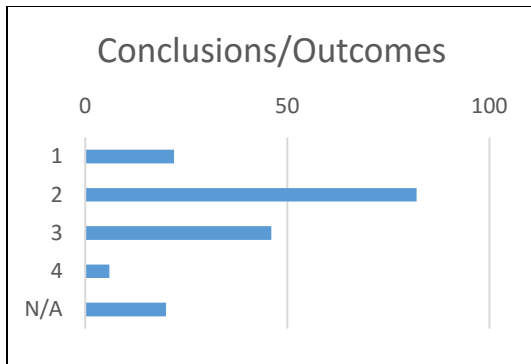
Critical Thinking

Six reviewers scored artifacts received from the Social Behavioral Sciences and the Humanities. Each reviewer reviewed approximately 20 artifacts. The review occurred over a five-week period of time. Each criteria score was averaged and the results are as follows:

	Fall, 2015 Average	Spring, 2015 Average
Explanation of Issues	2.17	2.13
Supporting Information	2.32	2.10
Analysis	2.31	2.30
Student's Position	1.97	2.01
Conclusions and Related Outcomes	2.23	2.14
Total rubric average:	2.20	2.18

There were far fewer criteria that were scored as 'not-applicable' than in the Written Communication review. The following graphically demonstrate the numbers of student scores per criteria.





Krippendorff's alpha was again used to assess inter-rater reliability. In this case, the alphas were stronger than in the Written Communication review. The results were as follows:

Explanation of Issues

Number of rating pairs (2 raters on same artifact)	83	
Pairs in agreement	48	58%
Krippendorff's alpha (ordinal)	0.6584	

Supporting Info

Number of rating pairs (2 raters on same artifact)	72	
Pairs in agreement	45	63%
Krippendorff's alpha (ordinal)	0.5335	

Analysis

Number of rating pairs (2 raters on same artifact)	88	
Pairs in agreement	55	63%
Krippendorff's alpha (ordinal)	0.5364	

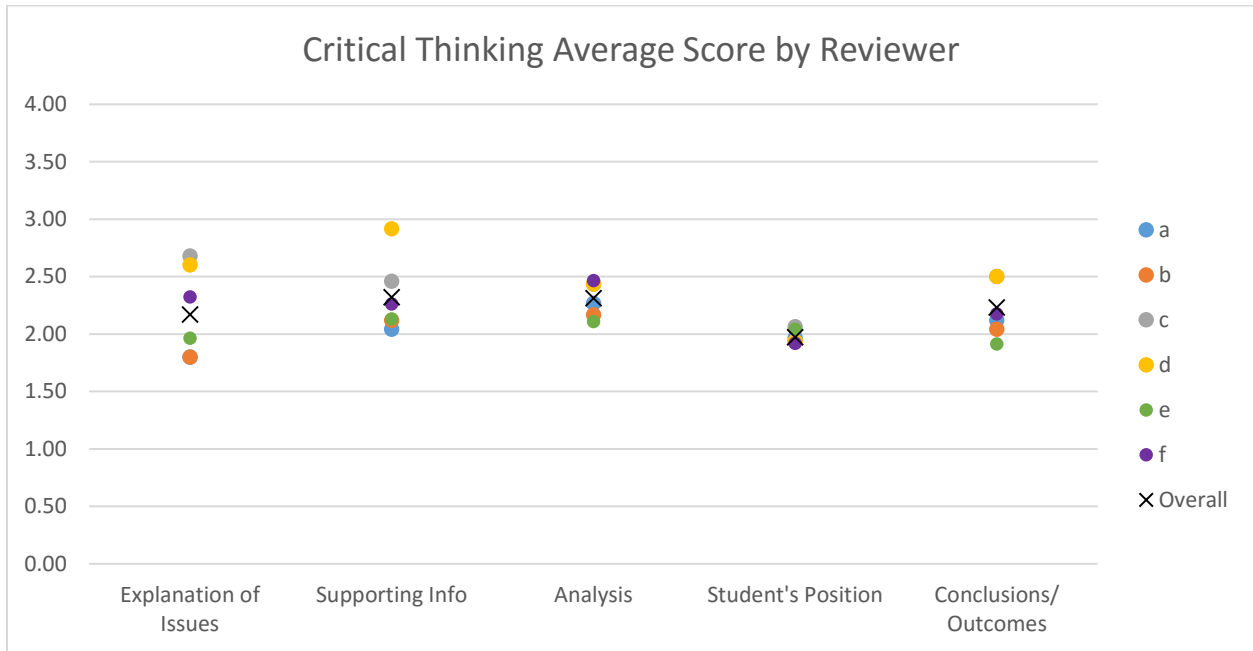
Student's Position

Number of rating pairs (2 raters on same artifact)	71	
Pairs in agreement	43	61%
Krippendorff's alpha (ordinal)	0.6498	

Outcomes/Conclusion

Number of rating pairs (2 raters on same artifact)	78	
Pairs in agreement	52	67%
Krippendorff's alpha (ordinal)	0.6543	

While scores were much closer in average for each criterion (with the exception of criterion 1), there were one or two outliers in the group.



Conclusions

The reviewers had requested that, prior to the calibration session, they receive artifacts from the previous session that had scored a 3, a 2 or a 1. The overall sense from the reviewers was that, by reviewing artifacts from the last calibration session, there was a better idea of what to look for when doing the calibration and scoring the remaining artifacts. Also, the reviewers were paired up to review the same sets of artifacts whereas, with the spring review, the sets were individually divided among the pairs of reviewers. This led to an overall increased consistency between the two individuals.

Based on the information received, communication with the Essential Learning faculty about requirements on the assignments will be needed if we are to use the VALUE rubrics for the outcomes. The number of 'not-applicable' scores could be effecting the results and inter-rater reliability of the review.

The next review of Written Communication and Critical Thinking will occur in fall, 2016. As the campus moves to the use of ePortfolio, the number of artifacts collected will increase significantly enhancing the pool of review documents.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. (2nd edition). Thousand Oaks, CA: Sage Publications.

Appendix B
Comparison of ETS Scores
Spring 2013 through Spring, 2016

The results of the ETS Proficiency Profile for fall, 2016 indicate that scores that were consistent with previous semesters. Participation rates did not change from 2013 to spring, 2014 increased slightly in fall, 2014 and significantly in spring, 2015. Since then, participation rates have decreased.

Scores across skills have not significantly varied over the seven semesters the test has been administered. Proficiencies have varied slightly but not significantly. These findings will be discussed and considered by the Assessment Committee along with Best Practice ETS Proficiency Profile use of data. Continued use of the ETS Proficiency Profile will be under review.

Numbers of Students completing test:

Spring, 2016: 259/600 (43.1%)

Fall, 2015: 125/283 (44.2%)

Spring, 2015: 336/579 (58.0%)

Fall, 2014: 178/381 (46.7%)

Spring, 2014: 250/587 (42.6%)

Fall, 2013: 167/367 (45.5%)

Spring, 2013: 213/500 (42.6%)

Score Scales:

Total 400-500

Skills 100-130

Comparison of Scores Total

	Total	Writing	Reading	Critical Thinking	Mathematics
Spring 2016	441.53	113.80	116.38	111.09	113.36
Fall 2015	443.53	114.34	117.61	111.09	113.54
Spring 2015	439.85	113.52	116.26	110.16	113.52
Fall 2014	443.76	111.44	117.3	114.54	113.88
Spring 2014	446.87	114.66	119.26	112.14	114.03
Fall 2013	443.42	114.37	117.54	111.72	112.96
Spring 2013	446.37	114.65	118.45	112.58	113.88

Proficiency Summary (%) (Proficient/Marginal)

	Read 1	Read 2	CT	Writing 1	Writing 2	Writing 3	Math 1	Math 2	Math 3
Fa. 16	49/16	25/16	3/12	49/27	16/30	5/21	45/25	23/25	5/15
Fa. 15	57/16	27/20	2/14	51/31	18/30	6/27	52/23	21/31	5/15
Sp. 15	47/22	22/18	3/7	47/29	15/28	5/21	47/20	24/26	7/13
Fa. 14	57/13	24/24	4/11	56/24	19/33	7/21	52/24	25/27	8/16
Sp. 14	66/13	38/20	5/16	58/22	24/31	9/24	52/21	26/27	10/14
Fa. 13	56/19	34/14	5/12	56/28	16/35	4/24	49/16	17/35	5/14
Sp. 13	59/17	33/18	5/16	53/30	22/25	6/25	53/18	26/28	8/15

Major Comparison

Program	Total	Critical Thinking	Reading	Writing	Mathematics
Art sp 15	437.19	109.44	114.81	114.25	111.5
Art sp14	440.67	109.75	117.46	114.38	112.83
Art sp13	441.67	111.13	118.2	113.8	112.53
Biology sp 15	459.75	115.08	122.67	115.92	118.25
Biology fa14	447.82	110.36	119.82	113.82	118.36
Biology sp13	456.75	117.08	121.67	115.33	116.08
Bus Admin sp 16	439.81	110.35	115.49	114.03	112.96
Marketing	439.94	111.82	115.53	112.53	113.71
Bus Admin sp 15	436.7	109.11	115.01	112.82	113.02
Accounting	440.83	110.33	114.42	113	118
Marketing	432.88	109	114.29	110.76	112.59
Business fa15	439.84	110.06	116.63	113.31	111.69
Business fa14	435.8	109.29	113.77	112.71	112.17
Business sp13	443.47	112.21	117.74	113.47	113.11
Crim Justice 16	431.30	112.00	112.85	110.46	112.00
Crim. Justice 15	436.78	110.44	116.11	112.44	111.94
Crim. Justice 14	440	111.76	117.47	113.41	111.41
Crim. Justice 13	440.44	110.94	114.39	113.33	114.67
Env. Science 16	453.50	115.50	120.33	115.00	115.06
Env. Science 14	446.15	112.31	116.92	114.69	115.46
Env. Science 13	455.94	114.56	121.56	115.33	117.06
Health and Med Sciences sp 16	449.72	112.31	119.78	115.63	114.75
Nursing	449.03				
Kinesiology	430.0				
Health and Med Sciences fa 15	446.58	112.14	119.11	114.92	114.11
Nursing	449.1				
Rad Tech	442.4				
Kinesiology	430.0				
Health and Med Sciences sp 15	444.05	110.64	117.14	114.86	114.52
Nursing	452.65				
Kinesiology	436.88				
Health Sci fa 14	445.5	111.91	117.57	115.48	114.04
Nursing (sp14)	447.83	112.49	120.02	114.13	114.26
Nursing (fa13)	445.32	112.4	118.2	114/66	113.14
Nursing (sp13)	444.69	111.81	118.24	115.38	112.29
History (sp16)	444.33	114.25	119.75	113.67	110.58
Math sp13	455.69	113.23	121	114.92	117.54
Psychology (sp16)	437.04	108.31	113.81	113.88	114.77
Psychology (sp 15)	438.21	109.63	118.05	113.58	111.21
Psychology (fa 14)	445.00	113.82	117.36	114.82	111.09
Psychology (sp14)	448.96	113.04	119.84	115.8	113.48
Psychology (fa13)	439.11	111.29	117.21	113.66	110.63
Psychology (sp13)	433.5	110.4	113.9	113.3	109.7
Other fa 15	430.54	108.69	111.38	111.69	112.15
Other sp 15	435.22	108.67	114.44	113.53	112.56
Other fa14	445.85	110.65	119.5	115.54	114.31
Other sp14	442.61	110.91	118.12	113.88	113.03
Other fa13	437.33	109.53	114.53	113.6	113.47
Other sp13	439.45	111.18	115.45	113.18	113.06

Transfer Status, Spring, 2016

	Number	Total Score	Critical Thinking	Reading	Writing	Mathematics
Total Group	255	441.53	111.09	116.38	113.80	113.36
		20.52	6.35	7.82	4.96	6.12
Not a transfer	171	440.90	110.91	116.15	113.69	113.15
		20.50	6.30	7.85	4.85	6.11
0 - 15 hours transferred	35	440.17	111.31	116.06	113.91	112.29
		18.68	7.27	7.46	4.87	5.01
16 - 30 hours transferred	20	444.90	111.40	117.05	113.35	115.60
		20.00	5.27	7.95	4.17	6.70
Over 30 hours transferred	29	444.52	111.62	117.69	114.59	114.34
		22	6.10	7.85	5.97	6.48

Transfer Status Fall, 2015

	Number	Total Score	Critical Thinking	Reading	Writing	Mathematics
Total Group	125	443.53	111.09	117.61	114.34	113.54
		[19.18]	[5.69]	[7.17]	[5.25]	[5.75]
Not a transfer	74	441.59	110.62	117.04	113.78	113.24
		[19.29]	[5.95]	[7.47]	[5.17]	[5.58]
0 - 15 hours transferred	20	448.3	112.1	118.15	116.25	115.4
		[15.31]	[4.89]	[5.00]	[4.94]	[5.43]
16 - 30 hours transferred	11	444.18	111.27	119.73	113.09	113.09
		[19.14]	[5.06]	[6.41]	[5.45]	[6.29]
Over 30 hours transferred	20	445.55	111.7	118	115.15	113.05
		[21.10]	[5.59]	[7.94]	[5.14]	[5.99]

Transfer Status Fall, 2014

	Number	Total Score	Critical Thinking	Reading	Writing	Mathematics
Total Group	178	443.76	111.44	117.3	114.54	113.88
		[19.92]	[6.44]	[7.66]	[5.12]	[6.07]
Not a transfer	101	442.54	110.62	117.5	114.7	113.19
		[17.45]	[5.85]	[7.20]	[4.70]	[5.55]
0 - 15 hours transferred	23	433.17	109.3	112.83	112.13	112.3
		[23.31]	[6.35]	[8.37]	[6.64]	[7.58]
16 - 30 hours transferred	15	456.07	115.07	120.8	116.53	116.67
		[17.84]	[5.72]	[6.87]	[4.46]	[5.78]
Over 30 hours transferred	39	448.41	113.44	118.05	114.79	115.54
		[20.76]	[7.13]	[7.54]	[4.87]	[5.76]