Mathematics Program

Evidence of Student Learning

Use of Evidence of Student Learning

2016-17

Assessment Data Mathematical, Information and Computer Sciences
Spring 2015

Learning Outcome: Students will be able to demonstrate facility with analytical concepts.

Outcome Measure: Annual - ETS Major Field Test in Mathematics: Calculus subscore

Criteria for Success: The department subscore will be at the 50th percentile or higher

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:
This is the most recent 10 years of data.

Year	Percentile
2007-08	80
2008-09	90
2009-10	90
2010-11	70
2011-12	99
2012-13	38
2013-14	72
2014-15	*
2015-16	16
2016-17	13

* Insufficient students for score to be calculated
Note the ETS changed the Mathematics test in 2004-05
Note the ETS changed the Mathematics test in 2012-13.

Conclusions Drawn from Data:
Before the change in the exam in 2013, the students were meeting our expectations, since the exam changed they have not. We need to look at the questions that make up this subscore to see if we need to make curricular adjustments or if the questions being asked mean that this tool is no longer measuring what we want to measure.

Changes to be Made Based on Data:
We made curricular adjustments in about 2008-09 to reduce the amount of Real Analysis (two semesters to one) in order to create space for additional course work. It does not appear that these changes had a negative impact on student scores. However, it appears that the questions in this section are mostly focused on calculus-related concepts.

Because of the change in 2013, we need to further analyze the questions as part of our program review to determine if this remains a valid measure for this learning outcome in our program. Digging into this issue will be part of our upcoming program review.

Rubric Used
None. The scores are computed by ETS.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to write proofs.

Outcome Measure:
Annual - MTH242 Signature Assignment
Alternating Years - MTH424 and MTH444 Signature Assignment

Criteria for Success: 80% of the students to score a 2.5 or higher (on a scale of 1-4) in each of the four areas:
- Statement of the problem
- Logic
- Symbolism
- Justification

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

	MTH242 Percentage of Class at 2.5 or Higher						
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Statement of Problem	100%	100%	100%	100%	100%	100%	89%
Logic	100%	88%	100%	100%	100%	100%	89%
Symbolism	100%	100%	100%	100%	100%	100%	100%
Justification	86%	75%	100%	83%	88%	100%	78%

	MTH424 Pecentage at 2.5 or higher	
	Fall 2013	**Fall 2015**
Statement of Problem	92%	100%
Logic	92%	89%
Symbolism	100%	100%
Justification	77%	67%

	Percentage at 2.5 or higher		
	Fall 2012	**Fall 2014**	**Fall 2016**
Statement of Problem	92%	100%	83%
Logic	92%	100%	0%
Symbolism	100%	100%	67%
Justification	77%	100%	67%

Conclusions Drawn from Data:
The place where the students continue to struggle the most is in the area of justification in their proofs. These classes are small so the difference between meeting or not meeting the benchmark may be the performance of single student. The 2016-17 data in MTH444 is somewhat surprising – the low scores are primarily due to the particular problem chosen and the instructions given. If the criteria for success is lowered to "percentage at 2 or higher" then the scores become Statement of Problem (100%), Logic (67%), Symbolism (100%) and Justification (83%). So this group of students was just below the benchmark.

Changes to be Made Based on Data:
We continue to emphasize the need for strong justification of every step in a proof and to more clearly reinforce that in assignments in all proof writing classes.

Proof Writing Rubric (MTH242, MTH424, MTH444)

	Unsatisfactory	Low Satisfactory	High Satisfactory	Outstanding
Statement of the Problem	Can not determine what is given and what needs to be proved	Misses one part of the hypothesis or the conclusion	Makes one minor error in identifying hypothesis or conclusion	Understands what is given and what is to be proved
Logic	Proof has major flaws that make it invalid.	Proof misses more than one major element.	Proof has the main flow of the logic correct but misses one major element	Statements flow logically from one another
Symbolism	There are many errors in the use of symbolic notation	There are more than two errors in symbolic notation	There are two or fewer minor errors in symbolic notation (e.g. missing parentheses)	All symbols are used correctly
Justification	There are several errors in the justification	There is one major mistake in justification or more than two minor errors.	There are two or fewer minor errors in justification for the steps.	Every logical step has the appropriate reason (theorem, definition, lemma, etc.)

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to demonstrate facility with algebraic structures.

Outcome Measure: Annual**:** ETS Major Field Test in Mathematics: Algebra subscore

Criteria for Success: The department subscore will be at the 50th percentile or higher.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:
This is the most recent 10 years of data:

Year	Percentile
2007-08	80
2008-09	80
2009-10	65
2010-11	90
2011-12	85
2012-13	72
2013-14	49
2014-15	*
2015-16	42
2016-17	8

* Insufficient students for score to be calculated
Note the ETS changed the Mathematics test in 2004-05
Note the ETS changed the Mathematics test in 2012-13.

Conclusions Drawn from Data:
Before the change in the exam in 2013, the students were meeting our expectations, since the exam changed they have not. We need to look at the questions that make up this subscore to see if we need to make curricular adjustments or if the questions being asked mean that this tool is no longer measuring what we want to measure.

Changes to be Made Based on Data:
We made curricular adjustments in about 2008-09 to reduce the amount of abstract algebra (two semesters to one) in order to create space for additional course work. It does not appear that these changes had a negative impact on student scores. We did increase the amount of linear algebra that we are requiring each student to take, so that may have balanced the reduction in abstract algebra.

The drop in the scores that corresponds to the change in the ETS test has us concerned. This may no longer be the right tool for measuring student learning in this area. Digging into this issue will be part of our upcoming program review.

Rubric Used
None. The scores are computed by ETS.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to apply their mathematical knowledge and critical thinking to solve problems.

Outcome Measure:
ETS Major Field Test in Mathematics: Applied subscore (Annual)

ETS Proficiency Profile – Reading/Critical Thinking (Annual)

Criteria for Success:
ETS MFT: The department subscore will be at the 50th percentile or higher

ETS Proficiency Profile: 85% of the students will be marginal or proficient at Level 2 Reading/Critical Thinking.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:
This is the data from the most recent 10 years.

Year	Percentile
2007-08	60
2008-09	95
2009-10	85
2010-11	70
2011-12	96
2012-13	60
2013-14	39
2014-15	*
2015-16	55
2016-17	55

* Insufficient students for score to be calculated
Note the ETS changed the Mathematics test in 2012-13.

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
ETS Proficiency Profile Level 2 Critical Thinking	80.0%	92.3%	100.0%	84.2%	91.7%

Conclusions Drawn from Data:
MFT: The students have been meeting our expectations. Our sample size is relatively small, so we expect some variation from year to year because of the size of the standard deviation on small samples. We are concerned about the drop in the scores with the exam change in 2012-13, however they seem to have recovered in the last few years.

Proficiency Profile: The students are meeting our criteria.

Changes to be Made Based on Data:
MFT: We have increased the amount of applied mathematics problems in our coursework, so the ETS results are somewhat puzzling. We will be reviewing this as part of our program review process.

Proficiency Profile: No changes at this time. The students are meeting our expectations.

Rubric Used
None. The scores are computed by ETS.

Assessment Data Mathematical, Information and Computer Sciences
Spring 2017

Learning Outcome: Students will be comfortable using technology to solve problems.

Outcome Measure: Annual: MTH382/MTH383 Signature Assignment and CSC254 Signature Assignment (through 2014-15)

Criteria for Success:

MTH382/MTH383: 80% of the students should have an average score of at least 2.5 in each of the major areas.

Fall 2014 and before:
CSC254: 80% of the students should have an average score of at least 2 in each of the major areas.

Fall 2015 and later:
Mathematics majors are now taking CSC252 (the first half of CSC254) and are not being assessed at the end of CSC254.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

	Percentage of students at 2.5 or higher					
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Students will be able to use technology to solve problems	100%	100%	skipped	100%	78%	100%

	CSC254 Percentage of Class at 2 or Higher			
	2011	2012	2013	2014
Compilation	100%	100%	92%	100%
Runtime Correctness	86%	58%	85%	75%
Problem Solving	100%	100%	100%	100%

Conclusions Drawn from Data:
MTH382/MTH383: Students have been able to satisfactorily analyze data using technology.

CSC254: The students find the run-time correctness the most challenging. This is because this is the area of programming that is the most detailed oriented.

Changes to be Made Based on Data:
MTH382/MTH383: Continue to use a hands on data analysis project.

CSC254: Continue to emphasize the need to carefully de-bug computer code during development.

MTH382 Signature Assignment Rubric

	Outstanding (4)	High Satisfactory (3)	Low Satisfactory (2)	Unsatisfactory (1)
Use of technology to solve problems	Other than checking results, uses only the relevant operations {+,-,×,÷,√□, and Sum()} in formulas in a manner that is typical of Excel usage in industry. and Uses cell addresses instead of typing in numerical results (other than typing *n* or *n-1*).	Other than checking results, uses only the relevant operations {+,-,×,÷,√□, and Sum()} in formulas. and Uses one or fewer instances of typing a numerical result (other than *n* or *n-1)* instead of a cell address in a formula.	Other than checking results, uses one of the built in functions (Average, StDev) instead of {+,-,×,÷,√□, and Sum()}. or Occasionally types numerical results (other than *n* or *n-1)* instead of cell addresses in formulas.	Other than checking results, uses both of the built in functions (Average, StDev) instead of {+,-,×,÷,√□, and Sum()}. or Often types in numerical results instead of cell addresses in formulas.

Criterion: 80% of students will score at or above 2.5.

CSC 254 Signature Assignment Rubric

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Compilation	• Compiles with errors	• Compiles with no errors, but has linking errors	• Compiles with no syntax errors or linking errors, but has warnings.	• Compiles and links with no errors
Runtime correctness	• No correct response to any test case from the sample data provided.	• Executes correctly on at least one test case from the sample data provided.	• Executes correctly on the given sample data, but not accepted by the online judge (no need to look at source code in this case)	• Accepted by the online judge, indicating that it has passed numerous independent test cases unknown to the student.
Problem solving	• Analysis of program source code indicates that program is NOT close to working, and could NOT easily be modified to work given additional time.	• Analysis of program source code indicates that the student partially understands the problem solution.	• Analysis of program source code indicates that program is close to working, and could be modified to work given additional time.	• Accepted by judge

Criterion: 80% of students will average 2 in Runtime correctness and Problem solving.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to speak about their work with precision, clarity and organization (Oral Communication).

Outcome Measure: Annual: Each student will be required to give an oral presentation on a topic in their field as a part of their participation in the Senior Seminar. The audience for this talk will include department faculty, fellow students and possibly some alumni. The students will be given the evaluation criteria in advance of their presentation and will be rated by the faculty using a rubric with a scale of 4 (outstanding) to 1 (unsatisfactory) in the following areas:

- Command of background material
- Organization
- Oral presentation skills (added as part of the new rubric in the spring of 2010)
- Use of presentation tools
- Ability to field questions from the audience

Note that the department has a mapping between its rubric and the AAC&U Oral Communication Value Rubric.

Criteria for Success: 80% of the students should have an average score of at least 2.5 in each of the major areas in the department rubric. This translates to 80% of the students being above a 3.5 in the AAC&U rubric.

Our translation from our data to the AAC&U is included. Our department continues to provide the students with our departmental rubric because it has been developed over many years and works effectively with our majors.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

Oral Presentation	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Background	94%	88%	100%	95%	100%	100%	92%	100%	95%	100%
Organization	94%	94%	100%	85%	100%	100%	100%	100%	100%	92%
Oral presetnation skills (2010)			100%	90%	100%	100%	92%	100%	95%	100%
Presentation Tools	88%	94%	100%	100%	100%	100%	100%	100%	100%	100%
Ability to field questions	81%	100%	100%	100%	83%	100%	100%	89%	100%	100%

AAC&U "translation" (we have only done this for the years that PLNU has been making use of the DQP)

Oral AAC&U	2012-13	2013-14	2014-15	2015-16	2016-17
Organization	100%	100%	100%	100%	92%
Language	100%	92%	100%	100%	100%
Delivery	100%	92%	100%	95%	100%
Supporting Material	100%	100%	100%	100%	100%
Central Message	100%	100%	89%	100%	100%

Conclusions Drawn from Data:
In general, the students have been performing reasonably well in the area of giving oral presentations. We attribute this to the fact that we intentionally have students presenting technical material in front of others starting in their freshman year.

Changes to be Made Based on Data:
Over time we have increased our standards and expanded the rubric to increase clarity for students and to push them to speak at a professional level. Looking at the scores, it is possible to see the times when alterations have been made:
- 2008-09 Standards tightened
- 2009-10 Rubric expanded to include more detailed instructions

Oral Presentation Rubric Update (4/12/17)

Criteria	Outstanding	High Satisfactory	Low Satisfactory	Unsatisfactory
Command of background material	☐ Clearly knows material and key facts by memory ☐ Expands on PPT slides ☐ Content appropriate for audience	☐ Clearly knows key facts with a few memory slips ☐ Some expansion on PPT slides ☐ Partial audience adaptation of content	☐ Reads some information; knows some facts from memory ☐ No expansion of PPT slide content ☐ Little audience adaptation of content	☐ Reads sentences from slides ☐ Dependent on notes ☐ Lacks audience adaptation of content
Organization	☐ Clear and concise outline ☐ Relevant graphics and key text items on slides ☐ Presentation is between 10-15 minutes	☐ Clear outline ☐ Too much information on slides (not concise) ☐ Presentation 1 minute outside of the range (10-15 minutes)	☐ Some sense of outline ☐ Too much detailed information on slides ☐ Presentation 2 minutes outside of the range (10-15 minutes)	☐ No clear outline ☐ Slides are in paragraphed; too much detailed information on one slide ☐ Presentation 3 minutes outside of the range (10-15 minutes)
Oral Presentation skills	☐ Clearly has practiced several times; smooth transitions ☐ Engages audience in content multiple time and engagement is well connected to talk (questions, examples, etc) ☐ Free of disfluencies (ah, uhm) ☐ Is clearly heard in the room and makes an uses inflection for emphasis ☐ Engaged audience through eye contact ☐ Engaged audience through gestures	☐ Has practiced but transitions are not smooth ☐ Engages audience at least twice in content (questions, examples, etc.) ☐ A few disfluencies (ah, umh, er) ☐ Can be understood most of the time and uses some inflection ☐ Some engagement of audience through eye contact ☐ Some engagement of audience through gestures	☐ Has practiced presentation but cannot verbally make transitions between slides ☐ Audience engagement at least once with content (questions, examples, etc.) ☐ Many disfluencies (ah, umh, er) ☐ Can sometimes be understood and uses little inflection ☐ Infrequent eye contact ☐ Distracting gestures or mannerisms	☐ Clearly did not practice presentation; Does not anticipate content of next slide ☐ No audience involvement ☐ Disfluencies (ah, umh, er) detract from presentation ☐ Can not be heard and/or speaks in a monotone ☐ Little audience awareness or eye contact ☐ Frequent distracting gestures or mannerisms
Use of Presentation Tools	☐ PPT background is matched to content, legible font, seamless transitions ☐ Graphics imbedded and matched to topic, necessary hyperlinks work	☐ Appropriate PPT slide backgrounds, transitions & font ☐ Most graphics imbedded and matched to topic, most necessary hyperlinks work	☐ Distracting PPT slide backgrounds and transitions, font hard to read ☐ Some inappropriate graphics or use of PPT embellishments, necessary hyperlinks don't work	☐ No attention given to PPT slide backgrounds and transitions, font illegible ☐ Distracting use of embellishments, graphics not connected to topic
Ability to field questions	☐ Able to answer questions clearly and without hesitation and prepared material to answer anticipated questions	☐ Can answer all questions with some hesitation	☐ Able to answer half of the questions with hesitation	☐ Unable to answer any questions

Translation between MICS and AAC&U Rubric

MICS Category	MICS Item Position in Rubric	AAC&U Category
Clear and concise outline	4	Organization
Relevant graphics and key text items on slides	5	Organization
Presentation length is +/- 30 seconds of time limit	6	Organization
Expands on PPT slides	2	Language
Content appropriate for audience	3	Language
Engages audience	8	Language
Transitions	7	Delivery
Free of disfluencies (ah, uhm)	9	Delivery
Is clearly heard in the room and uses inflection for emphasis	10	Delivery
Engaged audience through eye contact	11	Delivery
Engaged audience through gestures	12	Delivery
PPT background is matched to content, legible font, seamless transitions	13	Delivery
Relevant graphics and key text items on slides	5	Supporting
Graphics imbedded and matched to topic, necessary hyperlinks work	14	Supporting
Clearly knows material and key facts by memory	1	Central Message
Able to answer questions clearly and without hesitation	15	Central Message

AAC&U Value Rubric

	Capstone 4	Milestones 3	Milestones 2	Benchmark 1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced, but is not explicitly stated in the presentation.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to write about their work with precision, clarity and organization (Written Communication).

Outcome Measure:
Annual: Each student will be required to write a paper on a topic in their field as a part of their participation in the Senior Seminar. The audience for this talk will include department faculty, fellow students and possibly some alumni. The students will be given the evaluation criteria in advance of their presentation and will be rated by the faculty using a rubric with a scale of 4 (outstanding) to 1 (unsatisfactory) in the following areas:

- Bibliography and other supporting documentation
- Organization
- Grammar and spelling
- Depth of information
- Clarity of writing

Note that the department has a mapping between its rubric and the AAC&U Written Communication Value Rubric.

Annual: ETS Proficiency Profile.

Criteria for Success: 80% of the students should have an average score of at least 2.5 in each of the major areas in the department rubric. This translates to 80% of the students being above a 3.5 in the AAC&U rubric.

ETS: 85% of our students will be marginal or proficient on the Level 2 Writing test.

Our translation from our data to the AAC&U is included. Our department continues to provide the students with our departmental rubric because it has been developed over many years and works effectively with our majors

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

Written Report	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Bibliography and support	69%	75%	88%	55%	93%	100%	100%	100%	89%	100%
Organization	100%	88%	63%	65%	93%	100%	100%	100%	100%	92%
Grammar and Spelling	94%	75%	81%	60%	79%	100%	92%	89%	84%	100%
Depth of Information	81%	88%	88%	50%	93%	91%	77%	78%	89%	85%
Clarity of Writing	94%	69%	81%	70%	79%	91%	77%	78%	89%	85%

AAC&U "translation" (we have only done this for the years that PLNU has been making use of the DQP)

Written AAC&U	2012-13	2013-14	2014-15	2015-16	2016-17
Organization	100%	100%	100%	89%	92%
Language	100%	92%	100%	89%	85%
Delivery	100%	92%	100%	100%	85%
Supporting Material	100%	100%	100%	89%	100%
Central Message	100%	100%	89%	84%	85%

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
ETS Proficiency Profile Level 2 Writing	60.0%	84.6%	100.0%	89.5%	83.3%

Conclusions Drawn from Data:
In general, the students have been performing reasonably well in writing technical reports. We still some weaknesses in the quality of their writing and the use of their source material. The sample size for ETS in the first year was extremely small so we are not particularly concerned about the fact that the score was below the benchmark. The balance of the ETS scores are at or near benchmark (due to small sample sizes, the difference can often be a single person).

Changes to be Made Based on Data:
Over time we have increased our standards and expanded the rubric to increase clarity for students and to push them to speak at a professional level. Looking at the scores, it is possible to see the times when alterations have been made:
- 2008-09 Standards tightened
- 2009-10 Rubric expanded to include more detailed instructions
- In 2014-15 we instituted a literature review assignment to strengthen the students' capacity for using resources and identifying why the resources are relevant. This assignment needs to be adjusted, but seems to have helped students to understand their work.

In addition, the university has just changed general education requirements so that students will take an upper division literature class. We hope that this further exposure to formal writing later in their academic career will help to strengthen our students' writing.

MICS Written Presentation Rubric

Criteria	Outstanding	High Satisfactory	Low Satisfactory	Unsatisfactory
Bibliography and supporting documents	☐ Multiple references from distinct reputable sources	☐ Most references from distinct reputable sources	☐ Some references from reputable sources	☐ No bibliography or all references from untrusted sites on the internet
	☐ References cited in the body of the document	☐ Some citation of references in the body of the document	☐ Limited citation of references in the body of the document	☐ No citation of references in the body of the document
Organization	☐ Conveys a central theme with all ideas connected, arrangement of ideas clearly related to topic	☐ Conveys a central idea or topic with some ideas connected to the topic	☐ Attempts to focus on an idea or topic with many ideas not connected to the topic	☐ Has little or no focus on central idea or topic
	☐ Clear introduction, body (with sections), and conclusion includes summary and closure	☐ Includes introduction, body and conclusion	☐ Introduction, body, conclusion detectable but not clear	☐ Introduction, body or conclusion absent
	☐ Includes both an abstract and table of contents	☐ Includes abstract and table of contents (one partial and one complete)	☐ Includes partial abstract and partial table of contents	☐ No abstract or table of contents
Grammar and spelling	☐ No use of first- person tense	☐ Few uses of the first-person tense	☐ Several uses of the first- person tense	☐ Written in first-person tense
	☐ No grammatical or spelling errors	☐ Few grammatical and spelling errors	☐ Some grammatical and spelling errors	☐ Many grammatical and spelling errors
Depth of information	☐ Appropriately synthesizes information from multiple distinct sources	☐ Synthesis of information from at least three distinct sources	☐ Synthesis of information from at least two distinct sources	☐ Summary reporting of information without synthesis
	☐ Draws conclusions and personal insights from synthesis	☐ At least two personal insights or conclusions stated	☐ At least one personal insight or conclusion stated	☐ No personal insights
	☐ Has the minimum number of pages including penalty pages; subject coverage is excellent	☐ Has the minimum number of pages including penalty pages; subject coverage is good	☐ Has the minimum number of pages including penalty pages; subject coverage is adequate	☐ Does not have the minimum number of pages including penalty pages
Clarity of writing	☐ Sentences flow	☐ Good sentence structure	☐ Occasional poor sentence structure	☐ Frequent poor sentence structure
	☐ Smooth transitions between paragraphs	☐ Adequate transitions between paragraphs	☐ Transitions between paragraphs unclear	☐ Lacked transitions between paragraphs
	☐ Any and all terms and acronyms are defined	☐ Most terms and acronyms are defined	☐ Some terms and acronyms are defined	☐ Many terms and acronyms are undefined
	☐ Provides evidence to support points	☐ Lacks support for some points	☐ Provides minimal support for points	☐ Ideas not supported

Translation between MICS and AAC&U Rubric

MICS Category	MICS Item Position in Rubric	AAC&U Category
Conveys a central theme with all ideas connected, arrangement of ideas clearly related to topic	3	Purpose
Appropriately synthesizes information from multiple distinct sources	8	Development
Draws conclusions and personal insights from synthesis	9	Development
Has the minimum number of pages including penalty pages; subject coverage is excellent	10	Development
Provides evidence to support points	14	Development
Clear introduction, body (with sections), and conclusion includes summary and closure	4	Genre
Includes both an abstract and table of contents	5	Genre
Multiple references from distinct reputable sources	1	Source
References cited in the body of the document	2	Source
No use of first- person tense	6	Syntax
No grammatical or spelling errors	7	Syntax
Sentences flow	11	Syntax
Smooth transitions between paragraphs	12	Syntax
Any and all terms and acronyms are defined	13	Syntax

AAC&U Written Communication Value Rubric

	Capstone 4	Milestones 3	Milestones 2	Benchmark 1
Context of and Purpose for Writing *Includes considerations of audience, purpose, and the circumstances surrounding the writing task(s).*	Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).	Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).	Demonstrates minimal attention to context, audience, purpose, and to the assigned tasks(s) (e.g., expectation of instructor or self as audience).
Content Development	Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.	Uses appropriate, relevant, and compelling content to explore ideas within the context of the discipline and shape the whole work.	Uses appropriate and relevant content to develop and explore ideas through most of the work.	Uses appropriate and relevant content to develop simple ideas in some parts of the work.
Genre and Disciplinary Conventions *Formal and informal rules inherent in the expectations for writing in particular forms and/or academic fields (please see glossary).*	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices	Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices	Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation	Attempts to use a consistent system for basic organization and presentation.
Sources and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing	Demonstrates consistent use of credible, relevant sources to support ideas that are situated within the discipline and genre of the writing.	Demonstrates an attempt to use credible and/or relevant sources to support ideas that are appropriate for the discipline and genre of the writing.	Demonstrates an attempt to use sources to support ideas in the writing.
Control of Syntax and Mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.	Uses straightforward language that generally conveys meaning to readers. The language in the portfolio has few errors.	Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.	Uses language that sometimes impedes meaning because of errors in usage.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand (Information Literacy).

Outcome Measure: Annual: Each student will be required to write a paper on a topic in their field as a part of their participation in the Senior Seminar. The audience for this talk will include department faculty, fellow students and possibly some alumni. The students will be given the evaluation criteria in advance and their paper will be rated by the faculty using a rubric with a scale of 4 (capstone) to 1 (benchmark) in the following areas:

- References: Multiple references from distinct reputable sources
- Citation: References cited in the body of the document
- Synthesis: Appropriately synthesizes information from multiple distinct sources.

Criteria for Success: 80% of the students should have an average score of at least 3 in each of the major areas.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

	Percentage of Students at 2.5 or Higher				
Information Literacy	2012-13	2013-14	2014-15	2015-16	2016-17
References				95%	100%
Citation				84%	92%
Synthesis				84%	85%
Determine the Extent of Information Needed	100%	62%	78%		
Access the Needed Information	91%	69%	100%		
Evaluate Information and its Sources Critically (carefully explains the reasons for the choice of source) (added 2014-15)			33%		
Use Information Effectively to Accomplish a Specific Purpose	91%	85%	89%		
Access and Use Information Ethically and Legally	91%	77%	100%		

Note that in 2015-16 we returned to gathering information literacy data from our writing rubric. The AAC&U rubric was not working well for our purposes.

Conclusions Drawn from Data:
The students are meeting our expectations. For the first two years we applied the AAC&U rubric to the student's final senior paper to measure their use of information. The quality of the use of information was uneven and we had not made our expectations clear. The students much more clearly understand the expectations regarding information literacy that are embedded in our writing rubric.

Changes to be Made Based on Data:
We have tried a variety of approaches, using the AAC&U IL rubric and expanding on that rubric. After looking at the AAC&U results in parallel with the departmental writing rubric, it was clear that the difference in results were insignificant. It is a great deal less work for the department and clearer for the students to simply use the departmental writing rubrics IL components to assess students' IL.

Rubric
Next Page

Bibliography and supporting documents	☐ Multiple references from distinct reputable sources	☐ Most references from distinct reputable sources	☐ Some references from reputable sources	☐ No bibliography or all references from untrusted sites on the internet
	☐ References cited in the body of the document	☐ Some citation of references in the body of the document	☐ Limited citation of references in the body of the document	☐ No citation of references in the body of the document
Organization	☐ Conveys a central theme with all ideas connected, arrangement of ideas clearly related to topic	☐ Conveys a central idea or topic with some ideas connected to the topic	☐ Attempts to focus on an idea or topic with many ideas not connected to the topic	☐ Has little or no focus on central idea or topic
	☐ Clear introduction, body (with sections), and conclusion includes summary and closure	☐ Includes introduction, body and conclusion	☐ Introduction, body, conclusion detectable but not clear	☐ Introduction, body or conclusion absent
	☐ Includes both an abstract and table of contents	☐ Includes abstract and table of contents (one partial and one complete)	☐ Includes partial abstract and partial table of contents	☐ No abstract or table of contents
Grammar and spelling	☐ No use of first- person tense	☐ Few uses of the first-person tense	☐ Several uses of the first- person tense	☐ Written in first-person tense
	☐ No grammatical or spelling errors	☐ Few grammatical and spelling errors	☐ Some grammatical and spelling errors	☐ Many grammatical and spelling errors
Depth of information	☐ Appropriately synthesizes information from multiple distinct sources	☐ Synthesis of information from at least three distinct sources	☐ Synthesis of information from at least two distinct sources	☐ Summary reporting of information without synthesis
	☐ Draws conclusions and personal insights from synthesis	☐ At least two personal insights or conclusions stated	☐ At least one personal insight or conclusion stated	☐ No personal insights
	☐ Has the minimum number of pages including penalty pages; subject coverage is excellent	☐ Has the minimum number of pages including penalty pages; subject coverage is good	☐ Has the minimum number of pages including penalty pages; subject coverage is adequate	☐ Does not have the minimum number of pages including penalty pages
Clarity of writing	☐ Sentences flow	☐ Good sentence structure	☐ Occasional poor sentence structure	☐ Frequent poor sentence structure
	☐ Smooth transitions between paragraphs	☐ Adequate transitions between paragraphs	☐ Transitions between paragraphs unclear	☐ Lacked transitions between paragraphs
	☐ Any and all terms and acronyms are defined	☐ Most terms and acronyms are defined	☐ Some terms and acronyms are defined	☐ Many terms and acronyms are undefined
	☐ Provides evidence to support points	☐ Lacks support for some points	☐ Provides minimal support for points	☐ Ideas not supported

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will collaborate effectively in teams.

Outcome Measure:
Annual: CSC324 Signature Assignment – evaluation of group while working on a project (before 2015-16) and ISS342 Project Management – evaluation of group while working on a project (2016-17 and beyond)
Annual: MTH352 Signature Assignment – evaluation of group while working on a project

Criteria for Success: 80% of the students should have an average score of at least 2.5 in each of the major areas.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

	Percent of students with average at least 3.0		
	Fall 2012 CSC324	**Fall 2014 CSC324**	**Fall 2016 ISS342***
Contributes to team meetings	86%	80%	90%
Encourages team members	93%	84%	N/A
Contributes individually outside of team meetings	93%	88%	86%
Attitude	100%	96%	N/A
Fosters constructive team climate	100%	92%	N/A
Responds to conflict	100%	100%	90%

*Note that the full group work rubric will be used in future years.

	MTH352 Percent of students with average at least 3.0		
	Spring 2013	**Spring 2015**	**Spring 2017**
Contributes to team meetings	91%	86%	100%
Encourages team members	91%	93%	100%
Contributes individually outside of team meetings	82%	93%	100%
Attitude	100%	100%	100%
Fosters constructive team climate	91%	100%	100%
Responds to conflict	91%	100%	100%

Conclusions Drawn from Data:
The students are performing well as member of teams.

Changes to be Made Based on Data:
Continue to make use of group activities throughout the curriculum.

MICS Teamwork Rubric

Definition
Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet unsatisfactory (cell one) level performance.

The purpose of this is to evaluate individual team members.   Although no team member will ever see your evaluation of them, please take it seriously.

Directions:
- **Do not put your own name anywhere on this form, the evaluations are to be anonymous.**
- **Please write the name of the person you are evaluating here ……………………………._____**
- **Please fill out one copy of this form for every person who was on your team, including one for yourself.**
- **For each row, place a checkmark in the box that best describes your teammate's performance.**

	Outstanding	High Satisfactory	Low Satisfactory	Unsatisfactory
Contributes to team meetings	☐ Helps the team move forward by articulating the merits of alternative ideas or proposals.	☐ Offers new suggestions to advance the work of the group.	☐ Shares ideas but does not advance the work of the group.	☐ Sits quietly in team meetings and does not contribute
Encourages members of the team	☐ Actively seeks to find opportunities to encourage all members of the team.	☐ Offers encouragement to all members of the team	☐ Offers words of encouragement to friends	☐ Does not offer word of encouragement to anyone
Individual contributions outside of team meetings	☐ Completes all assigned tasks by deadline; work accomplished is thorough. Proactively helps other team members complete their assigned tasks.	☐ Completes all assigned tasks by deadline; work accomplished is thorough.	☐ Completes all assigned tasks by deadline.	☐ Does not complete all assigned tasks by deadline.
Attitude	☐ Demonstrates (comments, facial expressions, etc.) a negative attitude **rarely** and helps others to become more positive.	☐ Demonstrates (comments, facial expressions, etc.) a negative attitude **rarely**.	☐ Demonstrates (comments, facial expressions, etc.) a negative attitude **less** often than a positive attitude.	☐ Demonstrates (comments, facial expressions, etc.) a negative attitude **more** often than a positive attitude.

Fosters constructive team climate	☐ Supports a constructive team climate by doing **all** of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it.	☐ Supports a constructive team climate by doing <u>any two</u> of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it.	☐ Supports a constructive team climate by doing <u>any one</u> of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it.	☐ Supports a constructive team climate by doing **none** of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it.
Responds to conflict	☐ Identifies and acknowledges conflict and acknowledges that relationships can be damaged. Seeks to restore relationships.	☐ Identifies and acknowledges conflict and acknowledges that relationships can be damaged.	☐ Identifies and acknowledges conflict but will not acknowledge that relationships can be damaged.	☐ Will not acknowledge that conflict has occurred or that relationships can be damaged.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats (Quantitative Reasoning).

Outcome Measure: Annual: Each student will participate in the ETS Proficiency Profile exam.

Criteria for Success: 90% of the students will be Marginal or Proficient at Level 2. Note that we dropped the criteria of success so that it is possible for the department to pass even if a single student misses the criteria.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
ETS Proficiency Profile Level 2 Math	100.0%	100.0%	100.0%	100.0%	91.7%

Conclusions Drawn from Data:
Students are in general meeting our criteria.

Changes to be Made Based on Data:
None at this time. We will continue to monitor the results.

Rubrics
ETS Proficiency Profile (no rubric involved)

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Mathematics graduates will be adequately prepared for graduate study, teaching and careers using Mathematics.

Outcome Measure:

Annual: Require students to take the ETS Major Field Test in Mathematics as the mid-term exam for the capstone course, Mathematics 481, Senior Seminar in Mathematics.

Annual: Fieldwork evaluations of prospective teachers in EDU302 (EDU304 before 2014-15). The students are rated in several areas of competence using a three point rubric (weak =1, acceptable =2 and strong =3).   From these scores an overall rating is computed by taking the mean.

Every 5 Years: Alumni will be surveyed every five years. They will be asked at least the following questions:
1. If you have a job in industry: On a scale of 1 to 5, 1 being outstanding and 5 being poor, how well do you think that the undergraduate Mathematics curriculum at PLNU prepared you for your work in the field?
2. If you are going to graduate school or went to graduate school: On a scale of 1 to 5, 1 being outstanding and 5 being poor, how well do you think that the undergraduate Mathematics curriculum at PLNU prepared you for graduate school?
3. If you are in a teaching credential program or working as a teacher: On a scale of 1 to 5, 1 being outstanding and 5 being poor, how well do you think that the undergraduate Mathematics curriculum at PLNU prepared you for teaching?

Criteria for Success:

MFT: 50% of our students achieve above the 50th percentile on the exam.

Classroom: 80% of the students will have an average score of 2.5 or higher.

Alumni Survey: An average response of 2 for each question.

Aligned with DQP Learning Areas (circle one or more):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Longitudinal Data:

ETS Major Field Test:
Most recent 10 years of data.

Year	Overall Benchmark Met	Calculus Percentile	Algebra Percentile	Routine Percentile	Non-Routine Percentile	Applied Percentile
2007-08	Y	80	80	70	75	60
2008-09	Y	90	80	75	25	95
2009-10	Y	90	65	75	20	85
2010-11	Y	70	90	85	35	70
2011-12	Y	99	85	98	99	96
2012-13	Y	38	72	69	72	60
2013-14	Y	72	49	57	51	39
2014-15	Y	*	*	*	*	*
2015-16	N	16	42	32	36	55
2016-17	N	13	8	15	18	55

* Insufficient students for score to be calculated
Note the ETS changed the Mathematics test in 2004-05
Note the ETS changed the Mathematics test in 2012-13

School of Education Fieldwork:
This data is based on assessment conducted by the supervising teachers for students engaging in classroom fieldwork.

	Percentage of Students Scoring 2.5 or Higher									
	2007-08	2008-19	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Overall Score	100%	71%	N/A	N/A	N/A	100%	N/A	N/A	100%	100%

Alumni Data:
In the spring of 2010, the department surveyed alumni who had graduated in the last 15 years. The response rate on the survey was 31.7% with the majority (80.9%) of the respondents having graduated in the last decade. A detailed summary analysis of the data can be found in Appendix: 2010 Alumni Survey Results Summary of our department's Program Review. Below are the components of the survey relevant to our assessment plan.

How well did the undergraduate curriculum prepare you for:

	Well or higher	OK	Poorly
Work in the field (if went into the field)	85.2%	14.8%	0.0%
Graduate school	76.5%	5.9%	17.6%
Teaching	80.0%	20.0%	0.0%

Conclusions Drawn from Data:

ETS Results:

Our scores show that our benchmark is being met for overall performance on the test. We are continuing to evaluate the changes made by ETS in 2012-13 to determine if we are concerned about any the changes in student results. It may be that they are now including questions on some material that we do not teach. We have noticed a cyclical patter in some subscore results and are investigating to if this correlates with our two year rotation of upper division courses. Reviewing the exam and the data is part of the work that we will undertake as part of our next program review and we are questioning if this is the best tool to measure these outcomes.

Alumni Survey:

Overall, our alumni believe that they were well prepared. Further investigation indicates that the students (3) who said that they were "poorly" prepared for graduate school are all mathematics majors who are employed as teachers and appear to be getting education-related masters degrees while working full-time. The hypothesis is that the "lack of preparation" may be in education coursework and not mathematics. We will be conducting another survey in 2017-18 as part of program review preparation.

Changes to be Made Based on Data:

ETS Results:

We have used ETS data to small modifications (changes in pedagogy or assignments) as well as larger curricular modifications (addition or alteration of classes). In our recent Program Review we investigated the variability of the scores on the "non-routine" problems and learned that this category is a rotating collection of problems, some of them from topics not taught in our curriculum. We did however determine that we needed to do some work to strengthen our curriculum in the area of applied mathematics. This has resulted in increasing the number of required units of linear algebra and reconfiguring our applied mathematics class to become a class in differential equations and a class in modeling both of them using a modeling paradigm. It is too early to tell if these changes have achieved our intended outcomes, but the students have been positive about the curricular rearrangement. See our APC proposals for the specific descriptions of curricular changes made.

School of Education Fieldwork:

None in MICS, but the School of Education uses this as a tool to adjust their education classes that our students take while doing fieldwork. The teachers have been satisfied with the performance in of our students.

Alumni Survey:

Work to better prepare students who plan on being teachers for graduate school in education. In particular encourage them to take more education classes while an undergraduate.

In 2005 our department instituted three changes that seem to have had an impact on developing critical skills in our graduates:
- Increasing the expectations for written and oral presentations in senior seminar (this is in addition to the writing and oral presentations that are threaded throughout our curriculum)
- Requiring all seniors in our department to take the senior seminar class
- Requiring an "integrative experience" (internship, year-long service learning project or year-long honor research project) of all of our majors.

This has a direct impact on five skills listed in the table below. The question on the survey is listed above the table.

Please tell us if your departmental course work enhanced your abilities in the listed areas:

		Very much enhanced	Much enhanced	Enhanced	Not enhanced and N/A
Think analytically and logically	2000-2004	53.8%	26.9%	15.4%	3.8%
	2005-2009	64.0%	36.0%	0.0%	0.0%
Write effectively in the discipline	2000-2004	11.5%	23.1%	42.3%	23.1%
	2005-2009	16.0%	36.0%	36.0%	12.0%
Effective oral communication	2000-2004	3.8%	23.1%	46.2%	26.9%
	2005-2009	12.0%	12.0%	60.0%	16.0%
Solve problems using technology	2000-2004	19.2%	46.2%	26.9%	7.7%
	2005-2009	32.0%	56.0%	8.0%	4.0%
Integrate knowledge from different sources	2000-2004	15.4%	34.6%	38.5%	11.5%
	2005-2009	8.0%	52.0%	32.0%	8.0%

Data from the Alumni Survey says that our graduates believe that their coursework in our department has also enhanced:
- Their ability to write effectively (88% for those who graduated in 2005-09, 77% for those who graduated in 2000-04)
- Their ability to communicate orally in the discipline (84% for those who graduated in 2005-09, 73% for those who graduated in 2000-04)
- Their ability to solve problems using technology (96% for those who graduated in 2005-09, 92% for those who graduated in 2000-04)

Rubric:

ETS:
The ETS provides the data.

Field Work:
School of Education uses the rubric shown below.

Alumni Survey:
This is not rubric scored, but the data is tabulated.

School of Education Fieldwork Rubric

	Weak Candidate	Acceptable Candidate	Strong Candidate
Cultural Sensitivity: Demonstrates respect and cultural sensitivity toward ethnically and culturally diverse students.			
Basic Skills: Models appropriate literacies.			
Attendance: Punctuality and dependability.			
Cooperation: Fulfills assignments/follows instructions.			
Initiative: Anticipates needs/assumes responsibilities.			
Attitude: Maintains poise and positive interaction with students.			
Interest: Shows enthusiasm/communicates with supervisors.			
Appearance: Dresses appropriately.			