

**Assessment Data Mathematical, Information and Computer Sciences
Computer Information Technology (ADC)**

Learning Outcome: Students will be able to apply their technical knowledge and critical thinking to solve problems (Critical Thinking).

GELO 1d: Critical Thinking: Students will be able to examine, critique and synthesize information in order to arrive at reasoned conclusions.

Outcome Measure: Pass rates on certification exams.

Criteria for Success:

By the end of their 4th term:

- 80% of the students will be at or above 90% of the score needed to pass the CompTIA A+ exam.
- 80% of the students will be at or above 90% of the score needed to pass one additional CompTIA certification exam.

70% 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:

	2018-19	2019-20	2020-21	2021-22	2022-23
Percentage at or Above 90% of CompTIA A+ Exam Passing Score	87%	68%	73%	71%	88%
Percentage at or Above 90% for at Least One of CompTIA Network+, Security+ or Project+ Exam Passing Score	94%	86%	85%	87%	93%

Conclusions Drawn from Data: The students have been consistently meeting our criteria on their second certification exam. The students have been inconsistent in meeting the criteria on the A+ exam, but are generally close to our target.

Changes to be Made Based on Data: The A+ certification has two component exams. After some analysis, we have changed the class that supports preparation for these two exams from one to two units to help the students prepare more effectively. This change will be begin in the fall of 2023.

Rubric: Since these are online exams provided by CompTIA, there is no rubric.

Assessment Data Mathematical, Information and Computer Sciences Computer Information Technology (ADC)

Learning Outcome:

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

GELO 1b: Oral: Students will be able to effectively express ideas and information to others through 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 Information Technology Project (CIT4081). 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
- Use of presentation tools
- Ability to field questions from the audience

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.

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 at or Above 2.5					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Background	100%	100%	97%	100%	97%	100%
Organization	100%	100%	100%	100%	100%	96%
Oral Presentation Skills	100%	100%	100%	100%	97%	100%
Presentation Tools	100%	100%	100%	97%	100%	100%
Ability to Field Questions	100%	100%	100%	97%	100%	100%

Conclusions Drawn from Data: Our cohorts are consistently meeting the benchmark. This is not surprising since we have students give oral presentations in most classes.

Changes to be Made Based on Data: None at this time, we continue to monitor student achievement.

Rubric: See the following page.

Oral Presentation Rubric Update (4/12/17)

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

**Assessment Data Mathematical, Information and Computer Sciences
Computer Information Technology (ADC)**

Learning Outcome:

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

GELO 1a: Written: Students will be able to effectively express ideas and information to others through 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 Information Technology Project (CIT4081). 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:

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

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.

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 At or Above 2.5					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Bibliography and Support	100%	100%	100%	100%	100%	100%
Organization	83%	100%	100%	100%	100%	96%
Grammar and Spelling	100%	100%	100%	100%	97%	100%
Depth of Information	100%	100%	100%	100%	100%	100%
Clarity of Writing	100%	100%	100%	100%	100%	100%

Conclusions Drawn from Data: Our students are meeting our standards.

Changes to be Made Based on Data: Continue to monitor student results.

Rubrics: MICS Writing Rubric: Next page.

MICS Written Presentation Rubric (12/31/22)

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

**Assessment Data Mathematical, Information and Computer Sciences
Computer Information Technology (ADC)**

Learning Outcome:

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

GELO 1c: Information Literacy: Students will be able to access and cite information as well as evaluate the logic, validity, and relevance of information from a variety of sources.

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 Information Technology Project Seminar (CIT4081). 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 (outstanding) to 1 (unsatisfactory) 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 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 at or Above 2.5					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
References	100%	100%	100%	100%	100%	100%
Citation	100%	100%	100%	100%	100%	100%
Synthesis	100%	100%	100%	100%	100%	100%

Conclusions Drawn from Data: Our graduates are meeting our expectations.

Changes to be Made Based on Data: Continue to monitor the progress.

Rubric: We used the applicable parts of the writing rubric.

MICS Written Presentation Rubric (12/31/22)

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

**Assessment Data Mathematical, Information and Computer Sciences
Computer Information Technology (ADC)**

Learning Outcome:

PLO: 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).

GELO 1e: Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

Outcome Measure:

2022-23 and beyond: Annual: Signature assignment on a database in CIT3054 (Database Design)

Before Fall 2022: Annual: Each student will participate in the ETS Proficiency Profile exam.

Criteria for Success:

2022-23 and beyond: 80% of the students should have an average score of at least 2.5 in each of the major areas.

Before Fall 2022: 70% of the students will be Marginal or Proficient at Level 2.

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 at or Above 2.5
	2022-23
Recognition of Relevant Information	64%
Correctness of Query	21%

	Percentage of Students Marginal or Proficient				
	2017-18	2018-19	2019-20	2020-21	2021-22
ETS Proficiency Profile Level 2 Quantitative Reasoning	60%	39%	50%	55%	39%

Conclusions Drawn from Data: The students are not meeting our benchmark. The high degree of variability has led us to look at the skills which are being measured by the ETS

assessment tool. The skills being measured are similar to those that are developed in College Algebra. Because most of our students obtain their mathematics education before coming to PLNU, this does not seem like an accurate assessment of skills that the students are acquiring while at PLNU. This led us to identify a different way to assess student skills.

Changes to be Made Based on Data: The department concluded that the ETS exam is not a good measure of quantitative literacy for students in the field of information technology. We have designed a signature assignment and pilot tested it in the 2022-23 academic year. The questions were placed at the end of the final exam and some of the students didn't attempt them (3 of 23 didn't do either problem, 5 of the 23 students only did one problem), so we were left with incomplete data. We will adjust the placement of the questions in the final exam for the next academic year and see if that improves the results both in terms of the number of people who complete the problems and the time that students spend on the problems.

Rubrics

ETS Proficiency Profile (no rubric involved).

Rubric for the signature assignment is on the following page.