Information Systems Assessment Report

2022-23

Information Systems Program Learning Outcomes

1. Students will be able to write correct and robust software.

2. Students will analyze the interaction between hardware and software.

3. Students will demonstrate general knowledge of theories and practices in the core areas of business.

4. Students will critically analyze and apply business knowledge to solve complex business situations.

5. Students will be able to apply their technical knowledge and critical thinking to solve problems.

6. Students will demonstrate effective business communication through both written and verbal means.
    - *Students will be able to speak about their work with precision, clarity and organization.*
    - *Students will be able to write about their work with precision, clarity and organization.*
    - *Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.*

7. Students will collaborate effectively in teams.

8. Students will be able to understand and create arguments supported by quantitative evidence.

9. Students will formulate business decisions informed by ethical attitudes and values.

10. Students will understand the professional, ethical and social issues and responsibilities with the implementation and use of technology.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will be able to write correct and robust software.

Outcome Measure: Annual: CSC2054 Signature Assignment. This assessment has switched to being in CSC2052 which is the first half of CSC2054. This will enable us to capture this outcome for mathematics and data science majors.

Criteria for Success: 80% of the students should have an average score of at least 2 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 Class at 2 or Higher									
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*	2020-21**	2021-22	2022-23
Runtime Correctness	85%	100%	62%	72%	95%	60%	45%	42%	19%	61%
Problem Solving	100%	75%	92%	83%	80%	85%	70%	78%	69%	96%

*Note that the instrument was changed in 2019.
**Note that 2020 was a fully remote semester due to COVID.

Conclusions Drawn from Data: The students find the run-time correctness the most challenging. This is because this is the area of programming that is the most detail oriented. The instrument was changed in 2019. In 2021 we began assessing in CSC2052 rather than CSC2054 which is the midpoint in the class for computer science students (CSC2052 is cross listed with CSC2054 and is the first quad of CSC2054) but the end of the class for information systems, mathematics and data science students. We are seeing improvement in the runtime correctness scores but need to watch them.

Changes to be Made Based on Data: Continue to emphasize the need to carefully de-bug computer code during development. The rubric was modified to clarify the definition of run-time correctness which has made scoring simpler (Fall 2017). To capture the data for students in mathematics, data science, and information systems, we have moved the assessment to the mid-term point in the semester (see explanation above). The scores are improving as we are moving past the impact of the pandemic, but we need to continue to monitor these scores.

CSC 2054 Signature Assignment

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Runtime Correctness	• Less than 60% correct	• Between 60% – 79% correctness	• 80% - 89% correct	• 90% – 100% correct
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 or understands the solution but could not efficiently translate the solution to C++ code.	• Analysis of program source code indicates that program is close to working, and could be modified to work given additional time.	• All tasks execute correctly indicating that the code is both correct and robust (can catch user input errors).

Criterion: 80% of students will average 2 in Runtime Correctness and Problem Solving.

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will analyze the interaction between hardware and software.

Outcome Measure: Annual (CS and IS): CSC3014 Signature Assignment.

Criteria for Success: CSC3014 Assignment: 80% of the students should have an average score of at least 7.

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 Class at 7 or Higher									
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Hardware/software interaction understanding	82%	92%	88%	75%	69%	100%	92%	44%	62%	59%

Conclusions Drawn from Data: There is some variation in the data and some of it appears to be related to sample size. However, in 2020-21 the score dropped significantly. This could be due to this assessment being part of a final exam given in the Spring of 2021 during the COVID pandemic. Students were very tired and this score may be an indication of that fact as much as an indication of their knowledge. The scores improved in 2021-22 and 2022-23 but are still lagging behind historical values.

Changes to be Made Based on Data: Continue to require operating systems (CSC3014) of all CS and IS students. The 2022-23 assessment was changed and we have an analysis by question. This will help us to better understand patterns of what is being missed. There are two questions that were missed by at least 75% of the students and we need to drill into the questions and the associated topics.

Rubric Used (CSC3014): The scoring for this assignment is purely points based.

Learning Outcome:
MICS PLO #3/FSB PLO #1: Exhibit general knowledge of theories and practices in the core areas of business.

Outcome Measure:
Peregrine Comprehensive Exit Exam Results

Criteria for Success:
Score at or above the following:

Peregrine Undergraduate Comprehensive Exit Exam Criteria for Success	
Disciplinary Area	**Score**
Accounting	50
Business Ethics	50
Business Finance	50
Strategic Management	55
Business Leadership	55
Economics (Macro/Micro)	52.5
Global Dimensions of Business	50
Information Mgt Systems	50
Legal Environment of Business	55
Management (OPS, HR, OB)	55
Marketing	57.5
Quantitative Techniques/Stats	45

Aligned with DQP Learning Areas (circle one or more but not all five):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Approved by Assessment Committee 02.13.24
Approved by FSB Full Faculty

Longitudinal Data:

	Undergraduate Total	Accounting	Business Ethics	Business Finance	Strategic Management	Business Leadership	Economics (Macro/Micro)	Global Dimensions of Business	Information Mgt Systems	Legal Environment of Business	Management (OPS, HR, OB)	Marketing	Quantitative Techniques/Stats
Criteria for Success		50	50	45	55	50	50	45	50	50	55	50	45
Criteria for Success as of 21-22		50	50	50	55	55	52.5	50	50	55	55	57.5	45
2016-2017	50.2	54.6	48.3	48.5	54.9	47.9	52.2	44.8	53.6	49.1	51.0	49.6	47.1
2017-2018	49.8	53.9	47.1	49.8	51.5	48.9	50.1	45.6	51.9	51.5	50.9	53.3	43.5
2018-2019	51.1	50.9	48.6	46.4	54.9	54.0	52.3	48.0	50.1	55.2	50.3	55.2	47.4
2019-2020	51.2	50.7	52.1	47.6	54.3	52.3	53.3	48.0	51.3	53.1	49.1	55.6	46.8
2020-2021	52.8	48.7	51.4	51.3	56.9	55.0	53.7	49.7	51.9	56.1	51.6	60.2	46.7
2021-2022	50.1	46.4	51.2	47.9	53.9	50.6	50.0	47.9	49.2	51.2	50.6	56.5	45.7
2022-2023	50.3	47.4	51.6	46.8	56.7	51.2	49.9	47.5	49.9	50.7	50.4	56.8	45.3

Conclusions Drawn from Data:

It is important to note that PLNU's methodology of administering the Peregrine Comprehensive Exam is proctored, and students are given a two-hour time limit to complete the test. According to Peregrine, a majority of the schools that administer the Peregrine Comprehensive Exam do so in an un-proctored format with time limits of up to 48 hours. Therefore, criteria for success were determined considering (a) the average total score and average disciplinary area scores of National and Region 7 ACBSP schools, (b) the FSB's undergraduate curriculum, and (c) the FSB's historical disciplinary area scores. Beginning AY 21-22, the criteria for success were increased in seven of the twelve areas: Finance, Strategic Management, Business Leadership, Economics, Global, Legal Environment, and Marketing, as detailed in the above schedule.

During AY 16-17, the criteria for success were exceeded for five of the twelve disciplinary areas. Scores in the areas of Strategic Management and Global Dimensions of Business were slightly below (within 0.2 points) the criteria for success. Scores in the remaining five areas were below the criteria for success, including Business Ethics, Business Leadership, Legal Environment of Business, Management, and Marketing, as indicated in the table above.

During AY 17-18, the criteria for success were exceeded for seven of the twelve disciplinary areas. Scores in the areas of Business Leadership and Quantitative Techniques and Statistics were slightly below (within 1.5 points) the criteria for success. Scores in the remaining three areas, including business ethics, strategic management, and management, were below the criteria for success.

During AY 18-19, the criteria for success were exceeded for nine of the twelve disciplinary areas. The average score in the area of Strategic Management was 0.1 points below the criteria for success. The average score in the area of Business Ethics was slightly below (within 1.4 points) the criteria for success. The average score in the area of Management was 4.7 points below the criteria for success.

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During AY 19-20, the criteria for success were exceeded for ten of the twelve disciplinary areas. The average score in the area of Strategic Management was 0.7 points below the criteria for success. The average score in the area of Management was 5.9 points below the criteria for success.

During AY 20-21, the criteria for success were exceeded for ten of the twelve disciplinary areas. The average score in the area of Accounting was 1.3 points below the criteria for success. The average score in the area of Management was 3.4 points below the criteria for success.

During AY 21-22, the criteria for success (revised as of AY 21-22) were exceeded for two of the twelve disciplinary areas. For seven of the ten areas that did not meet the new criteria for success in AY 21-22 (Finance, Strategic Management, Leadership, Economics, Information Systems, Legal Environment, and Marketing), the new criteria for success were met in AY 20-21. The three areas that did not meet the revised criteria for success in AY 21-22 and AY 20-21 were Accounting, Management, and Global. The average score in the area of Accounting was 3.6 and 1.3 points below the revised criteria for success in AY 21-22 and AY 20-21, respectively. The average score in the area of Management was 4.6 and 3.4 points below the revised criteria for success in AY 21-22 and AY 20-21, respectively. The average score in the area of Global was 2.1 and 0.3 points below the revised criteria for success in AY 21-22 and AY 20-21, respectively.

During AY 22-23, the criteria for success were exceeded for three of the twelve disciplinary areas - Business Ethics, Strategic Management, and Quantitative Techniques/Statistics. In the areas of Accounting, Business Leadership, Information Management Systems, and Marketing, despite the criteria for success not being met, increases in scores from AY 21-22 were seen. Information Management Systems is very close to meeting the criteria for success, being off only 0.1. Additionally, Economics (Macro/Micro), Global Dimensions of Business, Legal Environment of Business, and Management have almost the same scores as in AY 21-22. Business Finance has decreased consistently since AY 2020-2021, by 3.4 points from AY 2020-2021 to AY 2021-2022 and another 1.10 points from AY 2021-2022 to AY 2022-2023. Overall, Accounting, Business Finance, and Global Dimensions of Business are well below the criteria for success.

Changes to be Made Based on Data:

Management has been recognized as an area needing improvement for several years. Scores in this area have been consistently below the criteria for success. Prior analysis regarding course content and related changes have been made in prior years. Additional analysis regarding MGT 2012 Principles of Management content will be done in Spring 2023 by management faculty, including the areas of human resources, operations management, and organizational behavior. Changes based on this analysis are planned for Fall 2023. This area will continue to be closely analyzed in AY 23-24.

Accounting has been trending downward over the last six years and is below the criteria for success in AY 21-22 and AY 20-21. Beginning Fall 2023, the course curriculum for the accounting program will be changed to conform with new AICPA Standards. The related PLOs will also be revised to reflect the new curriculum. As such, no additional changes are recommended at this time.

While the area of Global Dimensions of Business does not meet the revised criteria for success in AY 21-22, it was only 0.3 points below in AY 20-21. As such, no changes are recommended at this time; however, this area will continue to be monitored.

As discussed above, for seven of the ten areas that did not meet the new criteria for success in AY 21-22 (Finance, Strategic Management, Leadership, Economics, Information Systems, Legal Environment, and Marketing), the new criteria for success were met in AY 20-21. No changes are recommended at this time for these seven areas; however, these will continue to be monitored.

For the AY23-24 year, the Accounting, Finance, and Global knowledge areas will be reviewed by professors in those areas. The subsections of accounting that are below the criteria for success are Accounting Data Analysis, Compliance in Accounting, Financial Statement Analysis, Interest Income and Debt, and Management of Accounting. The subsections of Finance that are below the criteria for success are Asset Valuation and Inventory, Interest and Dividends, Profit, Loss, Cash Flow, and Margins, and Tax Rates, Taxes, and Tax Codes. The subsections of Global Dimensions of Business that are below the criteria for success are International Corporate Strategies and International Governance and Regulation. All other areas are above or very close to meeting the criteria for success.

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Approved by FSB Full Faculty

Fermanian School of Business (TUG)
PLO #2 Assessment
2022-2023

Learning Outcome:
MICS PLO #4/ FSB PLO #2: Critically analyze and apply business knowledge to solve complex business situations.

Outcome Measure:
The CAPSIM Inbox GM Simulation provides comparative data on how each student performs against all other students taking the simulation at the same time nationally. The following result is used:
1. CAPSIM Inbox GM Simulation Results – Overall Score

Criteria for Success:
1. Average score of all students will be above 45th percentile on the national CAPSIM Inbox GM Simulation Results

Aligned with DQP Learning Areas (circle one or more but not all five):
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:

Semester	N[1]	Inbox GM Simulation Results (%)
Fall 2021	27	45
Spring 2022	79	50
Fall 2022	56	48
Spring 2023	77	37

[1] Number of Students Completing Module

Conclusions Drawn from Data:

The measure described above were implemented in the MGT 4088 course beginning Fall 2021. Criteria for success was set at 45 in AY 22-23. Criteria for success was met in 3 of the 4 semesters evaluated, but fell short in Spring 2023.

Analysis identified that students are not spending ample time on the assignment.

Changes to be Made Based on Data:

Professor will emphasize the importance of the assignment. Data will continue to be collected and monitored.

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Approved by FSB Full Faculty

Assessment Data Mathematical, Information and Computer Sciences

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

Outcome Measure: Alternating Year**:** ISS4014 Signature Assignment using data bases.

Previous: ETS Proficiency Profile: Critical Thinking/Reading Portion.

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

Previous: ETS PP: 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:

	Percentage of Class at 2.5 or Higher					
	2011-12	2013-14	2015-16	2017-18	2019-20	2021-22
Relevant Information Chosen	100%	100%	88%	89%	88%	76%
Query Correctness	25%	100%	48%	41%	83%	82%

Previous:

	Percentage of Students Marginal or Proficient								
ETS Proficiency Profile	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
ETS Proficiency Profile Level 2 Critical Thinking	92%	100%	84%	92%	76%	79%	80%	88%	79%

Conclusions Drawn from Data: ISS4014 Assignment: The 2012 class was relatively small and that led to a fairly large standard deviation. Seventy-five percent of the class would have passed query correctness if the benchmark had been 2.3. We once again saw some problems with query correctness in 2015-16 and in 2017-18. In both cases, had the threshold for success been lowered slightly (2 vs 2.5), many more students would have succeeded. In 2019-20 the assignment was modified a bit to be clearer for students and we saw a marked improvement in scores both in 2019-20 and 2021-22. The assessment will not be administered again until the 2023-24 academic year.

Changes to be Made Based on Data: Spend more time in class emphasizing queries. This class is being revised in light of some curricular changes. The signature was updated in 2019-20 based on the review of content. Because the ETS exam is measuring critical reading skills, the department believes that we would be better served by using our home-grown assessment to measure students critical thinking ability in information systems.

Rubric Used

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Recognition of relevant information	3 errors (an error is defined as missing a relevant database field or listing an irrelevant field)	2 errors (an error is defined as missing a relevant database field or listing an irrelevant field)	1 error (an error is defined as missing a relevant database field or listing an irrelevant field)	All relevant database fields are listed and no irrelevant fields are listed for both queries
Query correctness	3 mistakes in the 2 queries	2 mistakes in the 2 queries	1 mistake in the 2 queries	No mistakes in the two queries

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

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:

Oral Presentation	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Background	92%	100%	95%	100%	100%	95%	100%	100%	95%	100%
Organization	100%	100%	100%	92%	94%	100%	100%	94%	100%	94%
Oral Presentation Skills	92%	100%	95%	100%	100%	95%	100%	100%	100%	100%
Presentation Tools	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Ability to Field Questions	100%	89%	100%	100%	100%	94%	94%	100%	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.

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 on 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 paragraphs; 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 times and engagement is well connected to talk (questions, examples, etc.) ☐ Free of disfluencies (ah, uhm) ☐ Is clearly heard in the room and uses inflection for emphasis ☐ Engages audience through eye contact ☐ Engages 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

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.

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.

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	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Bibliography and Support	100%	100%	89%	100%	76%	89%	81%	88%	58%	81%
Organization	100%	100%	100%	92%	94%	100%	100%	100%	100%	88%
Grammar and Spelling	92%	89%	84%	100%	88%	94%	94%	94%	89%	88%
Depth of Information	77%	78%	89%	85%	76%	83%	94%	94%	95%	94%
Clarity of Writing	77%	78%	89%	85%	88%	94%	88%	100%	89%	94%

Conclusions Drawn from Data: In general, the students have been performing reasonably well in writing technical reports.

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 write at a professional level. The current rubric has been in use for the last 11 years. We have instituted more formal faculty reviews of their draft papers and are trying to give more specific feedback, particularly about the use of references and that seems to be helping with the quality of the papers.

MICS Written Presentation Rubric (12/31/22)

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	☐ Highly accurate and substantive content	☐ Content is accurate, though key concepts are missing	☐ Content is flawed, and/or a significant number of key concepts are missing	☐ Content is significantly flawed and/or content is trivial
	☐ 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 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 (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:

Information Literacy	Percentage of Students at 2.5 or Higher							
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
References	95%	100%	71%	89%	81%	94%	74%	81%
Citation	84%	92%	76%	89%	81%	88%	74%	75%
Synthesis	84%	85%	82%	78%	81%	94%	95%	81%

Conclusions Drawn from Data: The students are generally meeting our expectations. This is still one of the areas with which the students have some challenges particularly with citation.

Changes to be Made Based on Data: We found that we needed to be very specific about our expectations for the use and citation of information in papers. We continue to work with students in giving them clear feedback about the need to do a better job with references in technical papers.

Rubric: Next Page.

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	☐ Highly accurate and substantive content	☐ Content is accurate, though key concepts are missing	☐ Content is flawed, and/or a significant number of key concepts are missing	☐ Content is significantly flawed and/or content is trivial
	☐ 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: Alternating year: CSC324 Signature Assignment – evaluation of group while working on a project (before 2015-16) and ISS3042 Project Management – evaluation of group while working on a project (2016-17 and beyond).

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 2.5					
	Fall 2012 CSC324	Fall 2014 CSC324	Fall 2016 ISS3042	Fall 2018 ISS3042	Fall 2020 ISS3042	Fall 2022 ISS3042
Contributes to team meetings	86%	80%	90%	100%	100%	100%
Encourages team members	93%	84%	N/A	100%	100%	100%
Contributes individually outside of team meetings	93%	88%	86%	100%	100%	100%
Attitude	100%	96%	N/A	100%	100%	100%
Fosters constructive team climate	100%	92%	N/A	100%	100%	100%
Responds to conflict	100%	100%	90%	100%	100%	100%

Conclusions Drawn from Data: The students are performing well as members 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</u> **two** 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</u> **one** 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: MTH3083 Mathematical Probability and Statistics Signature Assignment (Math and Data Science Majors). Alternating Year: ISS4014 Database and Web Signature Assignment (CS and IS Majors).

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

Criteria for Success: 80% of the students will score a 2.5 or higher on the rubric for MTH3083 and ISS4014

Previous: 90% 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:

ISS4014: First administration in spring 2024

MTH3083:

	MTH3083 Percentage of students at 2.5 or higher
	2022-23
Students will be able to formulate a mathematical model from a verbal description of a problem.	100%
Students will be able to construct solutions to problems using computational techniques.	100%
Students will be able to interpret visual data.	20%

Previous:

	Percentage of Students Marginal or Proficient									
ETS Proficiency Profile	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
ETS Proficiency Profile Level 2 Mathematics	100%	100%	100%	100%	92%	82%	95%	93%	81%	90%

Conclusions Drawn from Data: Students are in general meeting our criteria. The variation often comes down to a single student because of small sample sizes. The Spring of 2021 was during COVID and students were exhausted by the time that they took the ETS exam, so this may explain the lower score for that year. In spring of 2023 we pilot tested the new assessment in MTH3083 and the results were mixed. We need to examine how the visual interpretation question was asked.

Changes to be Made Based on Data: We do not believe that the ETS exam is accurately measuring student quantitative ability in the department disciplines. Starting the 2022-23 academic year we will be measuring quantitative reasoning in the following classes: Computer Science and Information Systems: ISS4014 Data Base Systems and Web Integration (first administration will be in the spring of 2024) and for Mathematics and Data Science: MTH3083 Mathematical Probability and Statistics (first administration Spring 2023).

Rubrics:

ETS Proficiency Profile (no rubric involved)
ISS4014: Rubric under development
MTH3083: Rubric below

	Unsatisfactory (0)	Low Satisfactory (1)	Satisfactory (2)	High Satisfactory (3)	Outstanding (4)
Students will be able to formulate a mathematical model from a verbal description of a problem.	Completely incorrect	Missed more than one key step or concept	Missed one key step or concept	Made a minor error	Completely correct
Students will be able to construct solutions to problems using computational techniques.	Completely incorrect	Missed more than one key step or concept	Missed one key step or concept	Made a minor error	Completely correct
Students will be able to interpret visual data.	Completely incorrect	Missed more than one key step or concept	Missed one key step or concept	Made a minor error	Completely correct

Fermanian School of Business
PLO #4 Assessment
2022-2023

Learning Outcome:

MICS PLO #9/ FSB PLO #4: Formulate decisions informed by ethical values.

Outcome Measure:

BUS4089 – Ethics Assignment - implemented Summer 2022

Criteria for Success:

The average score for each criteria of the PLO #4 Rubric will be a 3.0 or higher out of 4.0.

Aligned with DQP Learning Areas (circle one or more but not all five):
1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

Initial Data:

PLO #4 Rubric – Average Student Score:

Semester	# of Assessments	Economic Analysis	Legal Analysis	Ethical Duty Analysis	Final Recommendation	Total
Summer 2022	40	3.03	3.10	3.00	3.20	3.08
Fall 2022	26	3.31	3.27	2.96	3.42	3.24
Spring 2023	20	3.18	3.30	2.90	2.94	3.08
Summer 2023	40	3.23	3.20	3.98	3.13	3.13

Conclusions Drawn from Data:

The assessment of this PLO was moved to BUS 4089 beginning AY 21-22. The change resulted in a superior instrument being used to assess PLO #4. The criteria for success (average of 3.0 or higher out of 4.0) was met in all areas in the last semester - Summer 2023.

Changes to be Made Based on Data:

Data will continue to be collected and monitored in future semesters.

[1] Number of Students Completing Module

Approved by Assessment Committee 02.13.24
Approved by FSB Full Faculty

PLO #4 RUBRIC

Point Loma Nazarene University Program Learning Outcome #4: Formulate decisions informed by ethical values.

Criteria	Excellent 4	Meets Expectations 3	Needs Improvement 2	Does Not Meet Expectations 1
Economic Analysis	Clearly identifies how a decision or action positively or negatively impacts all members of society, including stakeholders.	Identifies how a decision or action positively or negatively impacts all members of society, including stakeholders.	Briefly identifies on how a decision or action positively or negatively impacts all members of society, including stakeholders.	Does not identify how a decision or action positively or negatively impacts all members of society, including stakeholders.
Legal Analysis	Clearly addresses what the law says is right and wrong. Cleary supports claims by referencing constitutional laws, statutory laws, regulatory laws, contractual laws, organizational policy, organizational or professional code of conduct.	Addresses what the law says is right and wrong. Supports claims by referencing constitutional laws, statutory laws, regulatory laws, contractual laws, organizational policy, organizational or professional code of conduct.	Briefly addresses what the law says is right and wrong. Briefly supports claims by referencing constitutional laws, statutory laws, regulatory laws, contractual laws, organizational policy, organizational or professional code of conduct.	Does not address what the law says is right and wrong. Does not support claims by referencing constitutional laws, statutory laws, regulatory laws, contractual laws, organizational policy, organizational or professional code of conduct.
Ethical Duty Analysis	Clearly identifies objective and universal standards (based on reason rather than emotion) regarding what is right, just, and fair. Clearly references at least two ethical tools to support view. *Ethical Tools Include: Personal Virtue, Utilitarianism, Universalism, Distributive Justice, Contributive Liberty, and Eternal Law.	Identifies objective and universal standards (based on reason rather than emotion) regarding what is right, just, and fair. References at least two ethical tools to support view. *Ethical Tools Include: Personal Virtue, Utilitarianism, Universalism, Distributive Justice, Contributive Liberty, and Eternal Law.	Somewhat identifies objective and universal standards (based on reason rather than emotion) regarding what is right, just, and fair. Briefly references one to two ethical tools to support view. *Ethical Tools Include: Personal Virtue, Utilitarianism, Universalism, Distributive Justice, and Eternal Law.	Does not identify objective and universal standards (based on reason rather than emotion) regarding what is right, just, and fair. Does not reference at least one ethical tool to support view. Ethical Tools Include: Personal Virtue, Utilitarianism, Universalism, Distributive Justice, Contributive Liberty, and Eternal Law.
Final Recommendation	Does an excellent job weaving together the economic, legal, and ethical duty analysis to derive at a compelling moral argument that is very difficult to refute.	Does a good job weaving together the economic, legal, and ethical duty analysis to derive at a compelling moral argument that is difficult for someone to refute.	Does a fair job weaving together the economic, legal, and ethical duty analysis to derive at a moral argument that is somewhat difficult to refute.	Does a poor job weaving together the economic, legal, and ethical duty analysis to derive at a moral argument that is difficult to refute.

Average Score: _____ (Total/# of criteria)

Assessment Data Mathematical, Information and Computer Sciences

Learning Outcome: Students will understand the professional, ethical and social issues and responsibilities with the implementation and use of technology.

Outcome Measure:
Alternating year: ISS3042 Signature Assignment
Alternating year: CSC3023 Signature Assignment
Alternating year: ISS4012 Signature Assignment
Annual: CSC4133 Signature Assignment
Annual: ISS4072 Signature Assignment

Note that this list is long because there is no single class that captures all CS and IS majors.

Criteria for Success: 80% of the students should have an average score of at least 2.5 in each of the major areas on the relevant 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 with average at least 2.5	
	2020-21 for ISS3042	2022-23 for ISS3042
Average from both scenarios (ISS3042)	62%	74%

	Percent of Students at or Above 2.5
	2022-23 for CSC3023
Can identify an ethical issue in a problem or scenario.	27%
Can make and support plausible ethical decision(s).	80%

	Percent of Students at or Above 2.5
	2022-23 for ISS4072
Can identify an ethical issue in a problem or scenario.	100%
Can apply an ethical framework to ethical issue (virtue, utilitarianism, deontology, analogies) to scenario.	67%
Can make and support plausible ethical decision(s).	100%

Conclusions Drawn from Data: The students did not meet our standards in the early assessments. The three students in ISS4072 in 2022-23 were assessed in the spring of 2023 and these three students had also been part of the assessment in ISS3042 in the fall of 2022. So hopefully we are seeing improvement.

Changes to be Made Based on Data: We are in the process of constructing a set of modules that will be embedded in several MICS classes with the intent that students will have multiple exposures to ethics-related issues and case studies. Our hope is that this scaffolding will ultimately support well-developed ethical responses in the classes where we gather data. As can be seen by the data, we are using a few different rubrics and it will simplify our analysis by getting all assessments on the same rubric.

Ethics Rubric (ISS3042 and CSC3023)

	1	2	3	4	5
Question 1	Activity is found to be ethical and no other supporting information is provided.	Activity is found to be unethical, but the support for this behavior is limited and lacks an implied defined framework. Response is a simple, "we shouldn't do this" with a harsh feeling.	Activity is found to be unethical and is supported by an ethical framework (explicit or clearly implied with a deontology framework). Response is a reasoned "we should do this" but is still a somewhat harsh response.	Activity is found to be unethical and is support by an ethical framework (explicitly stating a deontology framework). Response is a reasoned "we should do this" but is tempered with keeping the issue private between the two people.	Activity is found to be unethical and is supported by an ethical framework (explicitly stating a deontology framework). Response is a reasoned "we should do this" but express a clear justification, is not overly reactive and is kept private.
Question 2	The response does not identify an ethical issue with system reliability and does not clearly apply an ethical framework. The reliability issue is more of an inconvenience to users and does not create actual harm or violate a rule or law.	The response identifies an ethical issue or at least implies (clearly implied or explicitly) an ethical framework. But not both.	The response identifies an ethical issue and at least implies an appropriate ethical framework that correctly relates to the issues and contains a good explanation of why the framework applies to the issue.	The response identifies a clearly ethical issue and explicitly and correctly relates the issue to ethical framework along with explaining why the two are related.	The response identifies a clearly ethical issue and explicitly and correctly relates the issue to ethical framework along with explaining why the two are related. The response goes on to give examples of why the issue is an ethical problem.

CSC3023

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Can identify an ethical issue in a problem or scenario. (Ethical Issue Recognition)	Student is unable to identify the core ethical issue of the scenario.	Student identifies a concern of the scenario, but not a core ethical issue.	Student identifies a core ethical issue, but not a secondary concern.	Student identifies a core ethical issue along with secondary concerns.
Can make and support plausible ethical decision(s). (Informed Judgement)	Student is unable to form and support a plausible ethical decision.	Student forms a plausible ethical decision, however no support is given.	Student forms a plausible ethical decision and provides minimum support.	Student forms a plausible ethical decision and provides strong support.

For MICS: Student will understand the professional, ethical and social issues and responsibilities with implementation and use of technology.

MTH4062, MTH4072, CSC/ISS/ MTH4133, ISS4012

	Unsatisfactory (1)	Satisfactory (2)	Good (3)	Excellent (4)
Can identify an ethical issue in a problem or scenario. (Ethical Issue Recognition)	Student is unable to identify the core ethical issue of the scenario.	Student identifies a concern of the scenario, but not a core ethical issue.	Student identifies a core ethical issue, but not a secondary concern.	Student identifies a core ethical issue along with secondary concerns.
Can apply an ethical framework to an ethical issue (virtue, utilitarianism, deontology, analogies) to scenario. (Application of Ethical Perspectives/Concepts)	Student is unable to state an ethical framework.	Student states an ethical framework and makes an attempt to apply it to the scenario.	Student states an ethical framework and is mostly correct in applying it to the scenario.	Student states an ethical framework and can correctly apply it to the scenario.
Can make and support plausible ethical decision(s). (Informed Judgement)	Student is unable to form and support a plausible ethical decision.	Student forms a plausible ethical decision, however no support is given.	Student forms a plausible ethical decision and provides minimum support.	Student forms a plausible ethical decision and provides strong support.