Assessment Plan: GELOs in Biology Courses

A. PLNU General Education lab courses (BIO 101, 103, 105, 130, 210 & 211)

Learning Outcomes:
GELO 1a. Written: Students will be able to effectively express ideas and information to others through written communication.
GELO 1d. Critical Thinking: Students will be able to examine, critique and synthesize information in order to arrive at reasoned conclusions. (This GELO is the "assigned" GELO to be assessed by these courses.)
GELO 1e. Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

These outcomes will be measured yearly via direct, summative assessment.

Outcome Measure:
BIO 101, 103, 105, 210, 211 Signature Assignment: Individual Lab report
BIO 130 Signature Assignment: Motor unit activity

Criteria for Success: 70% of students will score at "developed" or higher on rubric.

Rubric:
Appendix A for BIO 101, 103, 105, 210, and 211
Appendix B for BIO 130

B. PLNU General Education <u>non-lab courses</u> (BIO 102 and 104)

Learning Outcomes:
GELO 1a. Written: Students will be able to effectively express ideas and information to others through written communication.
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.

These outcomes will be measured yearly via direct, summative assessment.

Outcome Measure: BIO 102 and 104 Signature Assignment: Research paper.

Criteria for Success: 70% of students will score at "developed" or higher on rubric.

Rubric: Appendix C

APPENDIX A

Rubric for lab reports completed in PLNU General Education lab courses (BIO 101, 103, 105, 210, and 211) for assessment of GELO's 1a, 1d, and 1e:

GELO 1a. Written: Students will be able to effectively express ideas and information to others through written communication.

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

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

Component	Initial	Emerging	Developed	Highly Developed
Introduction and hypothesis (Written)	• No indication of purpose of the research • Provides no background information • Hypothesis is missing	• Some indication of purpose of the research • Provides some background information, but some is inaccurate or irrelevant • Provides the hypothesis, but the hypothesis is unclear /confusing	• Clearly articulates the purpose of the research • Provides some accurate and relevant background information • Clearly identifies the hypothesis	• Clearly articulates the purpose of the research, beyond the narrow topic • Provides excellent background information • Clearly identifies the hypothesis and makes a prediction
Methods and Materials	• Methods are unclear and incomplete and materials are not sufficiently identified • No variables correctly identified	• Methods are basically explained, but incomplete with some materials not included • Some variables correctly identified	• Explains methods and materials, but missing some details • Most variables correctly identified	• Clearly and completely explains methods and materials • All variables correctly identified
Results (Quantitative reasoning)	• Graphs and tables are poorly/inaccurately done • No mention of tables/graphs in text • Many opinion statements	• Graphs and tables are inaccurate/missing labels with some errors • Summarizes tables and graphs in text • No clear reference to specific tables/graphs in text • Obvious opinion statements	• Graphs and tables are adequate but some labels/titles missing • Generally accurately summarizes the tables and graphs in text • Clear reference to some tables/graphs in the text • Some opinion statements	• Graphs and tables are well done and accurately labeled and titled • Accurately summarizes the tables and graphs in text • Clear reference to all tables/graphs in the text • No opinion statements
Conclusion(s) (Critical thinking)	• Fails to identify conclusions, or conclusion is a simplistic summary with no connection to original hypothesis • No mention of problems with the study • No consideration of future research	• Identifies conclusions and refers to some specific pieces of evidence, but no connection to original hypothesis • Minimal consideration of problems with the study • Minimal mention of future research	• Clearly links evidence with the conclusion • Some consideration of problems with the study • Some mention of possible future research	• Clearly links evidence with the conclusion and the original hypothesis • Thorough consideration of problems with the study • Several ideas for possible future research
Writing quality (Written)	• No sections labeled • Simplistic and/or unclear writing • Consistent use of present or future tense • Many errors	• Some sections clearly labeled • Unclear writing • Mostly uses present or future tense • Some errors	• Most sections clearly labeled • Clear writing • Sometimes uses past tense • Few errors	• All sections clearly labeled • Clear and sophisticated writing using advanced vocabulary; enjoyable to read • Consistently uses past tense • No errors

APPENDIX B

Rubric for short answer question completed in PLNU General Education lab course (BIO 130) for assessment of GELO 1d:

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

GELO	Initial	Emerging	Developed	Highly Developed
Critical thinking	Answer to one of the questions is partially factually accurate	Answer to both questions is factually accurate, but student doesn't demonstrate the ability to apply knowledge to a new situation	Answer to both questions is factually accurate and student demonstrates some ability to apply knowledge to a new situation	Answer to both questions is factually accurate and student demonstrates full ability to apply knowledge to a new situation.

APPENDIX C

Rubric for lab reports completed in PLNU General Education non-lab biology courses (BIO 102, 104) for assessment of GELO's 1a and 1c:

GELO 1a. Written: Students will be able to effectively express ideas and information to others through written communication.

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.

Component	Initial	Emerging	Developed	Highly Developed
Effective and responsible use of information from a variety of sources (INFO LITERACY)	• Inadequate number of sources • No variety of sources • No sources appropriately paraphrased	• Low number of sources • Minimal variety of sources • Some sources appropriately paraphrased, but many verbatim quotes	• Sufficient number of sources • Adequate variety of sources • Most sources appropriately paraphrased, not quoted verbatim	• High number of sources • Excellent variety of sources • All sources appropriately paraphrased, not quoted verbatim
Citation of sources (INFO LITERACY)	• No statements in paper supported by in-text statements. • No references cited in consistent citation style • Many errors	• Some statements in paper supported by in-text statements • Some references cited in consistent citation style • Some errors	• Many statement sin paper well supported by in-text citations • Most references cited in consistent citation style with no errors • Few errors	• All statements in paper well supported by in-text citations • All references cited in consistent citation style • No errors
Organization of paper (WRITTEN)	• No indication of purpose/thesis of the paper • Most of paper appears to be based on opinion	• Some indication of purpose/thesis of the paper • Purpose/thesis of paper is far too broad or narrow • Much of paper appears to be based on opinion	• Purpose/thesis of the paper stated but not clear • Purpose/thesis of paper is slightly too broad or narrow • Some opinion stated without clear identification as opinion	• Clearly articulates the purpose/thesis of the paper • Purpose/thesis of paper is concise and focused • No opinion stated, or clearly identified as opinion
Writing quality (WRITTEN)	• Simplistic and/or unclear writing • Many grammatical or spelling errors	• Unclear writing • Some grammatical or spelling errors	• Clear writing • Few grammatical or spelling errors	• Clear and sophisticated writing using advanced vocabulary; enjoyable to read • No grammatical or spelling errors
Use of course content	• No use of course content in paper	• Inadequate use of course content in paper • Inaccurate use of course content in paper	• Adequate use of course content in paper • Mostly accurate use of course content in paper with few errors	• Extensive use of course content in paper • Accurate use of course content in paper with no errors