Rubric for PLNU MS in General Biology Non-thesis option comprehensive exam for assessment of PLO #1, 2, and 3 (rev. 06/15)

1. Discuss major concepts and theories in biology.
2. Carry out and <u>communicate</u> various experimental methods and types of data analysis.
3. Demonstrate knowledge and skills in critical thinking, such as analysis and synthesis, as applied to primary literature in the field of biology, as well as in science education.

Part I: Research article analysis

Paper	Aspect of answer	Initial (fail)	Emerging (fail)	Developed (pass)	Highly Developed (pass)
#1	Problem/ question	Missing	Unclear	Clear, but not accurate	Clear and accurate
#1	2 major claims	Identified claims that are inaccurate or not important	At least one identified claim is inaccurate	Accurately identified claims, but missed at least one main claim	Accurately identified the most important claims
#1	Evidence	Specific data is not identified or does not match the claim	Relevant tables, figures, etc. are mentioned but no specific areas are identified	Specific areas of relevant figures, tables, etc. are correctly identified for some claims	Specific areas of relevant figures, tables, etc. are correctly identified for each claim
#1	Justification	Justification missing for at least one claim	Attempt made to justify claims, but inaccurate	Justification given for why data supports the claim, but not clear	Clear justification as to why the data supports each claim
#1	Methods	Methods missing	Missing some major methods	Major methods identified, but unclear	Major methods clearly identified
#1	Topic to teach at CC level	Topic not identified, and no relationship between topic and teaching	Topic is too high or low level for CC course and unclear relationship between topic and teaching	Topic is somewhat appropriate for CC course and some relationship between topic and teaching	Topic is appropriate for CC course and clear relationship between topic and teaching
#2	Problem/ question	Missing	Unclear	Clear, but not accurate	Clear and accurate
#2	2 major claims	Identified claims that are inaccurate or not important	At least one identified claim is inaccurate	Accurately identified claims, but missed at least one main claim	Accurately identified the most important claims
#2	Evidence	Specific data is not identified or does not match the claim	Relevant tables, figures, etc. are mentioned but no specific areas are identified	Specific areas of relevant figures, tables, etc. are correctly identified for some claims	Specific areas of relevant figures, tables, etc. are correctly identified for each claim
#2	Justification	Justification missing for at least one claim	Attempt made to justify claims, but inaccurate	Justification given for why data supports the claim, but not clear	Clear justification as to why the data supports each claim
#2	Methods	Methods missing	Missing some major methods	Major methods identified, but unclear	Major methods clearly identified
#2	Topic to teach at CC level	Topic not identified, and no relationship between topic and teaching	Topic is too high or low level for CC course and unclear relationship between topic and teaching	Topic is somewhat appropriate for CC course and some relationship between topic and teaching	Topic is appropriate for CC course and clear relationship between topic and teaching

#3	Problem/ question	Missing	Unclear	Clear, but not accurate	Clear and accurate
#3	2 major claims	Identified claims that are inaccurate or not important	At least one identified claim is inaccurate	Accurately identified claims, but missed at least one main claim	Accurately identified the most important claims
#3	Evidence	Specific data is not identified or does not match the claim	Relevant tables, figures, etc. are mentioned but no specific areas are identified	Specific areas of relevant figures, tables, etc. are correctly identified for some claims	Specific areas of relevant figures, tables, etc. are correctly identified for each claim
#3	Justification	Justification missing for at least one claim	Attempt made to justify claims, but inaccurate	Justification given for why data supports the claim, but not clear	Clear justification as to why the data supports each claim
#3	Methods	Methods missing	Missing some major methods	Major methods identified, but unclear	Major methods clearly identified
#3	Topic to teach at CC level	Topic not identified, and no relationship between topic and teaching	Topic is too high or low level for CC course and unclear relationship between topic and teaching	Topic is somewhat appropriate for CC course and some relationship between topic and teaching	Topic is appropriate for CC course and clear relationship between topic and teaching

Part II: Description of summer course major concepts

Course	Aspect of answer	Initial (fail)	Emerging (fail)	Developed (pass)	Highly Developed (pass)
#1	Choice of topic	Topic not addressed in course	Topic of minor importance in course	One of several main topics from course	Clearly a central topic from course
#1	Topic description	Inaccurately described	Accurately described, with minimal/no use of vocabulary from the course	Accurately described, with some use of vocabulary from the course	Accurately described using appropriate vocabulary from the course
#2	Choice of topic	Topic not addressed in course	Topic of minor importance in course	One of several main topics from course	Clearly a central topic from course
#2	Topic description	Inaccurately described	Accurately described, with minimal/no use of vocabulary from the course	Accurately described, with some use of vocabulary from the course	Accurately described using appropriate vocabulary from the course
#3	Choice of topic	Topic not addressed in course	Topic of minor importance in course	One of several main topics from course	Clearly a central topic from course
#3	Topic description	Inaccurately described	Accurately described, with minimal/no use of vocabulary from the course	Accurately described, with some use of vocabulary from the course	Accurately described using appropriate vocabulary from the course
#4	Choice of topic	Topic not addressed in course	Topic of minor importance in course	One of several main topics from course	Clearly a central topic from course
#4	Topic description	Inaccurately described	Accurately described, with minimal/no use of vocabulary from the course	Accurately described, with some use of vocabulary from the course	Accurately described using appropriate vocabulary from the course