

Keck Science Assessment Rubric for Senior Thesis in Biology

Student Name: _____
 Evaluator Name: _____
 College: _____
 Term: _____

| Learning Outcomes | Superior 4 | Good 3 | Fair 2 | Poor 1 | Score |
|--|---|--|---|--|-------|
| Understands foundational scientific principles and findings in biology | Student has fully and clearly articulated the foundational biological principles pertinent to the project and has grounded the project in these principles. | Student has discussed foundational principles in biology but has not fully grounded the project in these principles. | Student alludes to foundational principles in biology but connects them to the project in an indirect way. | Student has not connected the project to foundational principles in biology. | |
| Develops hypotheses and tests them using quantitative techniques | Student has clearly developed hypotheses and has used quantitative techniques to test them. | Student has developed hypotheses but has not systematically used quantitative techniques to test them. | Student has not clearly developed hypotheses and/or has used quantitative techniques only to a limited extent. | Student has not developed hypotheses and has not used quantitative techniques. | |
| Effectively communicates scientific concepts in writing (Articulation) | Each main idea is supported by detailed data or reasoning. All details are related to topic. Complete, correct documentation of a wide variety of sources. | Clear overall though details and/or data in some paragraphs may be vague. Data cited may at times be insufficient to support conclusions. Documentation of a variety of sources. | Arguments presented are not integrated into a coherent flow; some details are irrelevant. Marginal documentation of sources; some key sources may be missing. | Many conclusions/main ideas are not supported by details. Unclear presentation and many details cited are irrelevant. Inadequate documentation of sources. | |
| Effectively communicates scientific concepts in writing (Style) | Ideas/paragraphs/sections are connected by effective transition words and phrases. Precise, interesting, and accurate word choice. Writing style enhances readability of writing. | Transitions used. Word choice is adequate to convey meaning. | Few or no transitions. Overall style choppy. | No transitions. Sentence style choppy. Vocabulary limited. | |

| Learning Outcomes | Superior 4 | Good 3 | Fair 2 | Poor 1 | Score |
|---|---|---|---|--|--------------|
| Effectively communicates scientific concepts in writing (Grammar/Usage/ Mechanics) | Free of spelling, capitalization, and usage errors. Few, if any, errors in punctuation. Sophisticated and consistent command of standard English. | Number and type of errors does not interfere with meaning. Few, if any, spelling, capitalization, or usage errors. | Number and type of errors may interfere with meaning at some points. Some spelling, capitalization, or usage errors. Some fragments and/or run-ons. Some errors in punctuation. | Number and type of errors obscure meaning. Frequent errors in spelling, capitalization, and usage. Many fragments and/or run-ons. Serious and frequent punctuation errors. | |
| Articulates applications of science in the modern world (Student discusses “real-world” applications of science in his/her thesis.) | YES | NO | | | |
| Reads and understands original research publications | Student makes extensive reference to the primary literature and cogently analyzes the conclusions presented in the literature cited. | Student makes reference to the primary literature but does not fully analyze the conclusions presented in the literature cited. | Student makes reference to the primary literature but does not demonstrate understanding of the conclusions presented in the literature cited. | Student has made only limited reference to the primary literature. | |