

Keck Science Assessment Rubric for Senior Thesis in Biophysics

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

Learning Outcomes	Superior 4	Good 3	Fair 2	Poor 1	Score
Uses foundational physical principles to analyze problems in nature	Student has fully and clearly articulated the foundational scientific physical principles pertinent to the thesis project and has grounded the project in these principles.	Student has discussed foundational physical principles but has not fully grounded the project in these principles.	Student alludes to foundational physical principles but connects them to the project in an indirect way.	Student has not connected the project to foundational physical principles.	
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			
Demonstrates a working familiarity with standard laboratory equipment (e.g., oscilloscopes, DMMs, signal generators, etc.)	YES	NO	Not enough information to judge		