

# Keck Science Assessment Rubric for Senior Thesis in Environmental Analysis - Science

Student Name: \_\_\_\_\_  
 Evaluator Name: \_\_\_\_\_  
 College: \_\_\_\_\_  
 Term: \_\_\_\_\_

Learning Outcomes	Superior 4	Good 3	Fair 2	Poor 1	Score
<b>Understands and describes the complex social, scientific, and humanistic aspects of environmental issues</b>	Student has fully and clearly articulated the complex social, scientific, and humanistic aspects of environmental issues relevant to the thesis project.	Student has discussed but not fully understood the complex social, scientific, and humanistic aspects of environmental issues relevant to the thesis project.	Student alludes to the complex social, scientific, and humanistic aspects of environmental issues but connects them to the project in an indirect way.	Student has not discussed the complex social, scientific, and humanistic aspects of environmental issues.	
<b>Understands and applies both disciplinary and interdisciplinary analysis to environmental issues</b>	Student has fully understood and applied both disciplinary and interdisciplinary analysis to environmental issues.	Student has adequately understood and applied both disciplinary and interdisciplinary analysis to environmental issues.	Student alludes to complex social, scientific and humanistic aspects of environmental issues but does not analyze them in a direct way.	Student has not understood and applied both disciplinary and interdisciplinary analysis to environmental issues.	
<b>Uses foundational principles to analyze problems in nature</b>	Student has fully and clearly articulated the foundational scientific principles pertinent to the thesis project and has grounded the project in these principles.	Student has discussed foundational principles but has not fully grounded the project in these principles.	Student alludes to both disciplinary and interdisciplinary analysis to environmental issues to the foundational principles but connects them to the project in an indirect way.	Student has not connected the project to foundational principles.	
<b>Develops hypotheses and tests them using quantitative techniques</b>	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.	

Learning Outcomes	Superior 4	Good 3	Fair 2	Poor 1	Score
<b>Effectively communicates scientific concepts in writing</b> (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.	
<b>Effectively communicates scientific concepts in writing</b> (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.	
<b>Effectively communicates scientific concepts in writing</b> (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.	
<b>Articulates applications of science in the modern world</b> (Student discusses “real-world” applications of science in his/her thesis.)	YES	NO			