Rubric for Assessing Quantitative/Scientific Analysis

Component	Proficient	Basic	Unsatisfactory	Not Applicable
Inquiry and Analysis				
Scope	Can identify a topic of research that is appropriate in scope	Can identify a topic of research that is appropriate in scope after some minor revision	Topic identified is too general to be researched	NA
Application of Knowledge to Hypothesis	Can apply knowledge from course to formulate acceptable hypothesis	Can apply knowledge from course to formulate a mostly acceptable hypothesis	Shows limited application of knowledge from course to formulate hypothesis	NA
Planning	Can identify reasonable plan for research	Can identify parts of a plan for research	Cannot identify reasonable plan for research	NA
Expected Results	Able to describe acceptable expected results given topic and knowledge from course	Able to describe mostly acceptable expected results given topic and knowledge from course	Unable to give acceptable expected results given topic and knowledge from course	NA
Quantitative Literacy				
Data Interpretation	Able to interpret data for meaningful insights	Able to interpret data for some insights	Unable to interpret data for any insights	NA
Presenting Data	Can create polished and appropriate graphical representation of data	Can create appropriate graphical representation of data, though some work is needed to make work more clear to viewers	Unable to create appropriate graphical representation of data	NA
Application of Calculations	Can apply calculations learned in course to solve problem (if applicable)	Can apply some calculations learned in course to solve problem or needs help identifying exact calculations	Unable to apply calculations learned in course to solve problem (if applicable)	NA

		needed (if applicable)		
Assumptions	Able to list assumptions made in data acquisition and analysis	Able to list some but not all assumptions made in data acquisition and analysis	Unable to identify assumptions made in data acquisition and analysis	NA
Argument	Able to make strong and convincing argument supported by data	Able to make argument at least partially supported by data	Unable to formulate argument based on data or makes argument without support from data	NA
Critical Thinking				
Problem Identification	Able to identify problem or issue and propose steps to resolve the issue or problem	Able to identify problem or issue and propose some of the steps to resolve the issue or problem	Unable to identify problem, or able to identify problem or issue but unable to propose appropriate steps to resolve the issue or problem,	NA
Source Identification	Can identify sources of information useful to solving problem and understands that data needs to be examined for thoroughness and appropriateness	Can identify sources of information useful to solving problem with some less reputable sources and understands that data needs to be examined for thoroughness and appropriateness	Unable to identify any sources of information useful to solving problem and has no problem taking data at face value	NA
Bias Identification	Can identify and describe potential biases based on source of data or information	Can identify some potential biases based on source of data or information	Can not identify or describe potential biases based on source of data or information	NA
Complexities	Can identify all stakeholders and their positions in a complex issue	Can identify some stakeholders and their positions in a complex issue	Can not identify stakeholders in a complex issue or believes it is much simpler than it is	NA

Nature of Science

Shortcomings of Research	Can accurately describe potential shortcomings with every research project	Can describe some shortcomings for research projects but believes they are few	Cannot describe any shortcomings for research projects; believes scientific research is always thorough with no shortcomings	NA
Uncertainty in Science	Can accurately describe the level of uncertainty in reporting results or interpreting data	Can describe some uncertainty in research but believes most research is confident in their assertions	Unable to describe uncertainty of results or incorrectly reports that results are always certain	NA
Problem solution	Understands that not all problems will be solved to full extent	Believes most problems can be solved extent	Believes every problem has a solution	NA

Course Takeaways

Course Content	Able to identify and describe context of technical content in course and current issues related to that content	Able to identify and describe some but not full context of technical content in course and current issues related to that content	Unable to identify and describe context of technical content in course and current issues related to that content	NA
Role of Humans	Can demonstrate how humans impact environment and can give multiple, complex examples	Can demonstrate how humans impact environment and can give one complex example or multiple simple examples	Does not demonstrate how humans impact environment and cannot produce any examples	NA
Skills	Demonstrates proficiency in skills gained in class	Demonstrates acceptable level of skills gained in class	Cannot successfully demonstrate any skills gained in class	NA
Writing	Demonstrates good writing skills, particularly	Demonstrates good writing skills, but is	Demonstrates poor writing skills	NA

	in scientific style	lacking in more refined scientific writing skills		