

Scientific Reasoning Rubric adapted from Florida State University Rubric following AAC&U VALUE format

With inclusions adapted from Tidewater Community College

Definition: Scientific Reasoning is an adherence to a self-correcting system of inquiry and a reliance on empirical evidence to describe, understand, predict, and engage natural phenomena (often experimentally).

SLO	4 – capstone	3 – milestone 2	2 – milestone 1	1 – benchmark
Evidence	Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus.	Organizes evidence to reveal important patterns, differences, or similarities related to focus.	Organizes evidence, but the organization is not effective in revealing important patterns, differences, or similarities.	Lists evidence, but it is not organized and/or is unrelated to focus.
Model and/or Hypothesis Fundamental concepts	Demonstrates a critical examination of scientific context and fundamental concepts as well as a comprehensive understanding of scientific hypothesis and model construction.	Demonstrates a critical examination of scientific context and fundamental concepts as well as a basic understanding of scientific hypothesis and model construction.	Demonstrates some examination of scientific context and fundamental concepts but with incomplete scientific context.	Presents information from non-credible or irrelevant sources representing insufficient scientific context.
Science & Society	Uses a scientific perspective to evaluate contemporary problems resulting from the interactions among science, technology, and society, identifying and assessing the problems and their underlying causes, considering the feasibility of potential solutions, and weighing their impacts.	Uses a scientific perspective to evaluate contemporary problems resulting from the interactions among science, technology, and society, identifying and assessing the problems, considering potential solutions, and weighing their impacts.	Uses a scientific perspective to evaluate a contemporary problem resulting from the interactions among science, technology, and society, as well as potential solutions.	Demonstrates an awareness of the relevance of scientific perspective to contemporary problems resulting from the interactions between science and society but fails to grasp how this perspective can address them.
Analysis/Interpretation	Makes logical inferences citing the data, analysis is soundly based and properly executed using the data.	Properly and logically judges strength of hypothesis generally referencing the findings for support.	Attempts scientific inferences but with poor reference to findings.	Misjudges or neglects to judge outcome of experiment with little reference to data.