

UCA CORE – Critical Inquiry Rubric B (Scientific)

This rubric is used to assess students' progress towards *Goal B* of the *Critical Inquiry* area of the UCA Core.

Critical Inquiry: the ability to analyze new problems and situations to formulate informed opinions and conclusions.

Goal B: Apply scientific processes to solve problems/answer questions

This rubric assesses the following four specific skill or knowledge areas related to Goal B:

- **Define Problem/Question:** A statement or summary that identifies a problem or raises a question that is relevant to the topic or assignment, appropriate to the discipline, and open to empirical inquiry (i.e., objective observation).
- **Propose Hypotheses:** Formulating testable propositions that follow from one particular solution/answer to the problem/question.
- **Identify Methodology:** Selecting the appropriate set of procedures to test the hypotheses.
- **Evaluate Results:** An objective assessment of the hypotheses based on the empirical evidence gathered from the methodology.

How to use this rubric:

- Apply the rubric to at least one assignment. If different skill or knowledge areas are assessed by different assignments, then apply the respective rows of the rubric to those assignments that assess each specific skill or knowledge area. All skill or knowledge areas listed in this rubric must be assessed by the end of the course.
- For each specific skill or knowledge area, assign a score from 0 to 4 based on the student learning outcome that best matches the performance of the student on the assignment.
- Although the rubric may inform the grading scheme used for the assignment, it should not replace it. Scores of 4, 3, 2, and 1 do not necessarily correspond to A, B, C, and D. The rubric is used to track students' progress throughout the UCA Core, not just their performance in a single course. Thus, a score of 4 represents the expected mastery of that skill or knowledge area by the time a student graduates. That mastery may come earlier or later in a student's progression through the UCA Core, but generally speaking, scores of 1 and 2 are expected in lower-division courses, whereas scores of 3 and 4 are expected in upper-division and capstone courses.

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Specific Skill or Knowledge Area Related to the Goal	Student Learning Outcomes				0
	4	3	2	1	
Define Problem/Question	Communicates comprehensive, contextual understanding of the problem/question.	Compares problem/question statements to determine which best summarizes the problem.	Composes a basic, accurate problem/question statement.	Recognizes an applicable problem/question statement.	Assign a zero for performance that does not meet a score of one (1).
Propose Hypotheses	Communicates a hypothesis reflecting a comprehensive understanding of the problem/question.	Develops a hypothesis that links variables.	Composes a testable hypothesis from a scenario.	Recognizes a testable hypothesis.	
Identify Methodology	Proposes complex, multi-level strategic approaches for solving the problem or addressing the question.	Devises a complete appropriate strategic plan including controls to address the problem/question.	Distinguishes between valid options to select the best strategic plan to address the problem/question.	Recognizes appropriate strategic steps that address the problem/question.	
Evaluate Results	Articulates a comprehensive evaluation of results including next steps.	Produces an accurate interpretation of data including a consideration of sources of error.	Selects the best interpretation of results.	Recognizes an accurate interpretation of results.	

Overall, has this student demonstrated appropriate knowledge and skills for this level in this discipline? Yes No

This student did not turn in an acceptable response to the assignment (e.g., failed to turn in a paper, plagiarized, etc.)