

UCA CORE – Critical Inquiry Rubric C (Quantitative)

This rubric is used to assess students' progress towards *Goal C* 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 C: Apply quantitative and computational processes to solve problems.

This rubric assesses the following three specific skill or knowledge areas related to Goal C:

- **Information:** Identifying and extracting relevant information needed to solve the problem.
- **Methods:** Selecting the appropriate methods to solve the problem.
- **Communication:** Effectively communicating quantitative concepts or evidence consistent with the purpose of the assignment.

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.
- Unlike other UCA Core rubrics that track students' progress through the UCA Core, the use of this rubric is complicated by the difficulty of the quantitative problems that students may encounter early compared to later in the UCA Core. For example, a student majoring in Mathematics may show mastery of the material (a score of 4) in Calculus I as a freshman but may struggle in Advanced Calculus as a senior. Thus, it is *not* expected that scores of 1 and 2 are more likely in lower-division courses and scores of 3 and 4 are more likely 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	
Information	Justifies solution in terms of relevant information needed to solve a problem.	Extracts all relevant information needed to solve a problem, but cannot justify the solution.	Extracts some, but not all, relevant information needed to solve a problem.	Recognizes relevant information needed to solve the problem, but cannot extract the information.	Assign a zero for performance that does not meet a score of one (1).
Methods	Solves a variety of problems using appropriate methods with consistent accuracy without verbal or supporting cues.	Uses appropriate methods to calculate problems accurately with occasional verbal or supportive cues. Independent calculations. Includes minor errors.	Solves calculations correctly but requires frequent verbal or supportive cues. Independent calculation. Accuracy is erratic.	Performs calculations with minimal accuracy independently. Can perform calculation accurately but only with continuous verbal and supportive cues.	
Communication	Articulates a variety of complex concepts in a logical and comprehensible manner.	Generates explanations of concepts that are detailed and clear.	Defines all major steps with some details missed or some language not completely precise.	Lists basic concepts.	

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.)