**Cal State LA Quantitative Reasoning Rubric**

*Fall 2018, Based on the AAC&U Quantitative Literacy VALUE Rubric*

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|  | **Capstone Proficiency (4)** | **Proficient (3)** | **Approaching Proficiency (2)** | **Not Proficient (1)** |
| **Interpretation**  *Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).* | Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. *For example, accurately explain the trend data shown in a graph and make reasonable predictions regarding what the data suggest about future events.* | Provides accurate explanations of information presented in mathematical forms. *For instance, accurately explains the trend data shown in a graph.* | Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. *For instance, accurately explain trend data shown in a graph, but may miscalculate the slope of the trend line.* | Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. *For example, attempt to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.* |
| **Representation**  *Ability to convert relevant information into various*  *mathematical forms (e.g., equations, graphs, diagrams,*  *tables, words).* | Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding. | Competently converts relevant information into an appropriate and desired mathematical portrayal. | Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate. | Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate. |
| **Calculation** | Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.) | Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. | Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem. | Calculations are attempted but are both unsuccessful and are not comprehensive. |

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| **Application / Analysis**  *Ability to make judgments and draw appropriate*  *conclusions based on the quantitative analysis of data,*  *while recognizing the limits of this analysis.* | Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work. | Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work. | Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work. | Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work. |
| **Assumptions**  *Ability to make and evaluate important assumptions in*  *estimation, modeling, and data analysis.* | Explicitly describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions. | Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate. | Explicitly describes assumptions. | Attempts to describe assumptions. |
| **Communication**  *Expressing quantitative evidence in support of the*  *argument or purpose of the work (in terms of what*  *evidence is used and how it is formatted, presented, and*  *contextualized).* | Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality. | Uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven. | Uses quantitative information, but does not effectively connect it to the argument or purpose of the work. | Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities. |

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