**Quantitative Reasoning: Mathematical or Logical Analysis**

**Goals:**

Students develop skills in quantitative literary and logical reasoning, including the ability to identify valid arguments, and use mathematical models.

**Expected Learning Outcomes:**

1. Students comprehend mathematical concepts and methods adequate to construct valid arguments.
2. Students comprehend mathematical concepts and methods adequate to understand inductive and deductive reasoning.
3. Students comprehend mathematical concepts and methods adequate to increase their general problem solving skills.

***Scoring Rubric:***

Assessment of GE Quantitative Reasoning: Mathematical or Logical Analysis Courses

This scoring rubric is designed to help instructors and members of relevant committees assess how well students are meeting the ELOs as reflected in direct assessment methods. Students are not expected to have acquired all the knowledge, skills, and attitudes/perspectives listed under the various ELOs in order to complete the assignment satisfactorily. At a minimum, students are expected to meet Milestone 2.

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| --- | --- | --- | --- | --- |
|  | Capstone(4) | Milestone (3) | Milestone(2) | Benchmark (1) |
| **(ELO 1)** **Students comprehend mathematical concepts and methods adequate to construct valid arguments.**  | Student shows superior comprehension of mathematical concepts and methods and is able to construct valid arguments.  | Student demonstrates ability to use mathematical concepts and methods to construct a valid argument.  | Student comprehends mathematical concepts and is able to construct valid argument.  | Student comprehends mathematical concepts and methods at a basic level but is unable to construct valid arguments.  |
| **(ELO 2)****Students comprehend mathematical concepts and methods adequate to understand inductive and deductive reasoning.** | Student demonstrates superior understanding of inductive and deductive reasoning.  | Student understands inductive and deductive reasoning.  | Student’s understanding of inductive and deductive reasoning in limited.  | Student is unable to demonstrate ability to use mathematical concepts to understand inductive and deductive reasoning.  |
| **(ELO 3)****Students comprehend mathematical concepts and methods adequate to increase their general problem solving skills.**  | Student demonstrates sophistication in their use of mathematical methods in their problem solving skills.  | Student demonstrates an increase in their ability to integrate mathematical concepts in their problem solving skills.  | Some evidence of student’s increased problem solving skills is demonstrated. | Student is unable to apply basic mathematical concepts and methods to solve problems.  |