

GE Programmatic Assessment, Mathematical Reasoning, 2005-2006

Student Learning Outcomes [†] versus GE Goals [‡]	GE Program Goals			GE Core Skills		GE Math Goals	
<i>Baccalaureate graduates of CSU, Chico will be able to:</i>	1	3	5	2	3	1	2
<i>Outcomes 1 - 3 will be measured through indirect means, e.g., a student response survey.</i>							
1) view mathematics with heightened interest, increased confidence, and less anxiety as a result of their educational experiences.							
2) regard mathematics as a way to think, reason and conceptualize, not simply as a set of techniques.							
3) understand and appreciate the connections between mathematics and a variety of quantitative and non-quantitative disciplines.							
<i>Outcomes 4 - 6 will be measured through embedded direct means, e.g., student performance on an existing class assignment associated with one or more learning outcomes and evaluated using a common rubric.</i>							
4) develop and apply measurement techniques to data collection, and evaluate potential sources of error, including variability and bias.							
5) interpret, make appropriate judgments, and draw reasonable conclusions based on numerical, graphical and symbolic information.							
6) critically evaluate quantitative information, and identify deceptive or erroneous reasoning.							

[†] Selected from *Learning Outcomes for Mathematical Reasoning for the Baccalaureate Degree*, Learning Outcomes Project Final Report, January 15, 1999.

[‡] As defined in EM 99-05 *The General Education Program*:

GE Program Goals are:

- 1) to improve ... mathematical reasoning, analysis and problem solving, and the ability to access, evaluate, and apply information
- 3) to enhance general knowledge and attitudes ...
- 5) to provide ... coherence, connectedness, and commonality within broad areas of undergraduate education

GE Core (Area A) Skills

The principal charge to this area is to provide students opportunities to learn and demonstrate:

- 2) effective mathematical reasoning
- 3) fundamental links between thinking ... and mathematical reasoning

GE Mathematics (Sub-Area A4) Goals

Students must demonstrate:

- 1) understanding of one or more mathematical fields ...
- 2) understanding of more than computational skills; they must also demonstrate understanding of basic mathematical concepts and apply these concepts to complex real world activities