# Mathematics Core Component Sample Rubric (3 core objectives)

	Capstone Mi		stones	Benchmark	Lack of Proficiency
	4	3	2	1	0
CRITICAL THINKING					
Explanation of issues	The problem and solution are stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	The problem and solution are stated, described, and clarified so that understanding is not seriously impeded by omissions.	The problem and solution are stated and described but not clarified; understanding is impeded by some omissions.	The problem and solution are stated without clarification or description in a way that may be confusing.	The problem and solution are not stated accurately. Student does not understand the issue.
Problem-Solving	Adapts and applies, independently, skills, abilities, theories, or methodologies gained in one situation to new situations to solve difficult problems or explore complex issues in original ways.	Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations to solve problems or explore issues.	Uses skills, abilities, theories, or methodologies gained in one situation in a new situation to contribute to understanding of problems or issues.	Uses, in a basic way, skills, abilities, theories, or methodologies gained in one situation <b>in a new situation.</b>	Cannot use skills, abilities, theories, or methodologies gained in one situation in a new situation.
<b>QUANTITATIVE LITERACY</b>	4	3	2	1	0
Interpretation	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. For example, accurately explains the trend data shown in a graph and makes 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 explains 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, attempts 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.	Little attempt to explain information presented in mathematical forms. Multiple incorrect conclusions about what the information means.
Representation	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.	Incomplete conversion of information and resulting mathematical portrayal is highly inappropriate or inaccurate.
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations	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	Calculations are attempted but are both unsuccessful and are not comprehensive.	Calculations are not attempted in any meaningful way.

	are also presented elegantly (clearly, concisely, etc.)		comprehensively solve the problem.		
Application / Analysis	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work. <i>Ex.</i> <i>student explains thoughtful ways</i> <i>to use the quantitative</i> <i>information and offers</i> <i>correctives</i>	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.	Fails to use the quantitative analysis of data as the basis for any judgments. Draws little or no conclusions from this work.
COMMUNICATION (Oral or Written)	4	3	2	1	0
Organization	Specific introduction and conclusion, sequenced body material, and transitions are clear and consistent. Skillful and cohesive organization.	Specific introduction and conclusion, sequenced body material, and transitions are clear and consistent. Some minor lapses in cohesive organization.	Specific introduction and conclusion, sequenced body material, and transitions are mostly clear but occasionally inconsistent or formulaic. Some lack of cohesion in organization.	Specific introduction and conclusion, sequenced body material, and transitions have been attempted but may be confusing and/or inconsistent. Weak cohesion in organization.	Lack of specific introduction and conclusion, sequenced body material, and transitions. Highly confusing and inconsistent. No real cohesion.
Control of Language	Uses graceful language that skillfully communicates meaning to the audience with clarity and fluency, and is virtually error- free.	Uses straightforward language that generally conveys meaning to the audience. The language has few errors.	Uses language that generally conveys meaning to the audience with clarity, although it may include some errors (slang, incorrect verb forms)	Uses language that sometimes impedes meaning because of errors in usage.	Uses language that consistently impedes meaning because of errors in syntax, grammar, and mechanics, including punctuation, capitalization, and/or spelling for written assignments.

# Possible assignment for assessment

- 1) present students with an erroneous data set, accompanied by "expert" analysis that uses percentages and estimations
- 2) ask students to put the data into visual format (chart, table, graph)
- 3) ask students to review the findings, with an emphasis on the calculations needed to arrive at the percentages and estimations
  - are the author's conclusions valid?
  - what corrections, if any, would the student suggest for the analysis?

## Possible assignment for students in non-quantitative majors

- 1) ask students to take their unofficial transcript and fill in a current degree plan for their major
- 2) have students calculate their core curriculum GPA, their major GPA, and their minor GPA, if relevant
- 3) ask students to compare / contrast their performance from their first semester to the most recent one, using percentages
- 4) ask students to present these findings in some visual, such as a bar graph, pie chart, line graph, etc. using Excel or another program

# The following resources might assist you in filling out the Core Curriculum Request form.

#### Texas Common Course Numbering System (TCCNS) Matrix

This searchable online database lists classes that Prairie View A&M already accepts for specific transfer credit. The university also is updating its TCCNS articulation.

http://www.tccns.org/matrix.aspx

#### Lower-Division Academic Course Guide Manual

This PDF gives the course descriptions for core classes as they must be offered at Texas community colleges. It may help you determine the proper TCCNS equivalent for the PVAMU core class you are requesting.

http://www.thecb.state.tx.us/AAR/UndergraduateEd/WorkforceEd/acgm.htm

#### **Texas General Education Core Web Center**

This resource allows you to search the official PVAMU core as of 2003 and also to research courses allowed at other Texas colleges and universities.

http://statecore.its.txstate.edu/

### **Overview of Planning General Education Assessment**

https://www.aalhe.org/sites/default/files/aalhe2011\_gened.pdf

### Ideas for Assessing Critical Thinking

http://www.aacu.org/resources/assessment/critical\_thinking.cfm

http://academic.pgcc.edu/~wpeirce/MCCCTR/Designingrubricsassessingthinking.html