Coursework in this area is intended to develop an understanding of mathematical reasoning processes and the ability to utilize these processes to solve college-level mathematical problems.

**Competency and Knowledge Objectives**

To meet the mathematics requirement of the general education core, courses must cover the competency/knowledge objectives below.

1. Interpret mathematical concepts.
2. Represent information/data.
3. Use appropriate strategies/procedures when solving mathematical problems.
4. Draw reasonable conclusions based on quantitative information.

**Value Rubric: Mathematical Ways of Knowing**

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| --- | --- | --- | --- |
|  | **Meets End-of-Course Expectations** | **Partially Meets****End-of-Course Expectations** |      **Does Not Meet End-of-Course Expectations** |
| **COMPETENCY 1:****Interpret mathematical concepts.**     *Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, notation/mathematical symbols, words)*      | Provides accurate explanations of information presented in mathematical forms.For example, * uses appropriate mathematical language to explain course concepts consistently
* or completely explains mathematical notation or abstractions related to course material
 | Provides foundational but incomplete explanations of information presented in mathematical forms.For example,* uses appropriate mathematical language to explain course concepts inconsistently
* or partially explains mathematical notation or abstractions related to course material
 | Provides inaccurate explanations of information presented in mathematical forms or provides no explanation.For example, * uses inappropriate mathematical language to explain course concepts
* or inaccurately explains mathematical notation or abstractions related to course material
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| **COMPETENCY 2:****Represent information/data.***Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)*      | Competently converts relevant information into an appropriate and desired mathematical portrayal.For example,* Appropriately represents data with a table or graph, such as a line graph, bar graph, circle graph, boxplot, scatterplot, or frequency distribution, etc.
* Or appropriately represents information with a function, equation, inequality, graph, table, drawing, diagram, words, etc.
 | Partially converts relevant information into an appropriate and desired mathematical portrayal.For example,* Partially represents data with a table or graph, such as a line graph, bar graph, circle graph, boxplot, scatterplot, or frequency distribution, etc.
* Or partially represents information with a function, equation, inequality, graph, table, drawing, diagram, words, etc.
 | Inappropriately converts relevant information into an appropriate and desired mathematical portrayal.For example,* Inappropriately represents data graphically with a table or graph, such as a line graph, bar graph, circle graph, boxplot, scatterplot, or frequency distribution, etc.
* Or inappropriately represents information with a function, equation, inequality, graph, table, drawing, diagram, words, etc.
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| **COMPETENCY 3:****Use appropriate strategies/procedures when solving mathematical problems.***Ability to approach a problem in an appropriate and comprehensive way*           | Calculations attempted are appropriate and sufficiently comprehensive to solve the problem.For example,* Applies an appropriate strategy or technique that is sufficient to solve the problem.
* Performs a process that is adequate to solve the problem.

      | Calculations attempted are appropriate but are insufficient to solve the problem. For example,* Partially applies an appropriate strategy or technique that is sufficient to solve the problem.
* Partially performs a process that is adequate to solve the problem.

      | Calculations attempted are inappropriate and insufficient to solve the problem. For example,* Applies an inappropriate strategy or technique to solve the problem.
* Performs a process that is inadequate to solve the problem.

      |
| **COMPETENCY 4:****Draw reasonable conclusions based on quantitative information.***Ability to evaluate the reasonableness of the conclusion or result for a real-world mathematical problem*           | Successfully evaluates the reasonableness of the result for a real-world mathematical problem.For example,* Demonstrates that the conclusion correctly addresses the problem.
* Draws valid conclusions from analysis.
* Or adequately checks the solution to confirm that it is reasonable.
 | Partially evaluates the reasonableness of the result for a real-world mathematical problem.For example,* Partially demonstrates that the conclusion correctly addresses the problem.
* Draws partially valid conclusions from analysis.
* Or inadequately checks the solution to confirm that it is reasonable.
 | Does not evaluate the reasonableness of the result for a real-world mathematical problem.For example,* Does not demonstrate that the conclusion correctly addresses the problem.
* Does not draw valid conclusions from analysis.
* Or does not check the solution to confirm that it is reasonable.
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