***Quantitative Reasoning***

**Definition**

Quantitative reasoning is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong quantitative reasoning skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. Such individuals can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate – adapted from AAC&U Quantitative Literacy rubric).

**Rationale and Intent**

Quantitative reasoning is a way of thinking about the world that relies on data and on the mathematical analysis of data to make connections and draw conclusions (adapted from the AAC&U Quantitative Literacy VALUE rubric). Fitchburg State University recognizes that the ability to make sense of data by identifying important patterns and drawing logical conclusions is essential to making informed choices in a society that increasingly makes such information readily available and actionable in both professional settings and through the media. The quantitative reasoning learning outcome and course requirement reflects Fitchburg State University’s commitment to preparing students who are able to make sense of quantitative data to address real world problems. To ensure that students have the opportunity to further develop foundational learning goals throughout their general education curriculum, courses designated as a Critical and Creative Thinking across the Disciplines (CCTAD) course must include at least one of these skills as a secondary course objective. Quantitative reasoning may therefore be selected as one of the secondary skills in the CCTAD.

**Goal**

Fitchburg State University students will analyze and interpret mathematical information as a means to evaluate arguments and make informed choices.

**Potential Course Objectives**

The objectives below are recommended as models for general education course syllabi. The list is not meant to be complete. Faculty should feel free to adopt these as course objectives, or they may develop their own.

* write mathematically and read quantitative news articles for understanding.
* see mathematics in various social situations and how mathematics is used to solve problems.
* synthesize the above skills in order to use statistical data sets to describe a situation, and support or refute a claim about the situation.
* communicate, through listening, reading, speaking, and writing, using precise mathematical language and symbols.