

GENERAL EDUCATION NEW COURSE CERTIFICATION REQUEST
• AREA B4: Mathematics and Quantitative Reasoning

*Complete your responses in the corresponding fields in the **GE B4 Curriculog form***

(GE forms are listed under the “**Courses**” tab in Curriculog)

Part A: B4 Quantitative Reasoning General Education Learning Outcomes (GELOs) related to course content.

Math/Quant Reasoning GELOs this course will address:

B4.1: Explain and apply a variety of fundamental mathematical concepts, symbols, computations and principles.

B4.2: Determine which quantitative or symbolic reasoning methods are appropriate for solving a given problem and correctly implement those methods.

**Part B: General Education Learning Outcomes required of all GE courses related to course content:
GE Outcomes required of all Courses**

Students will communicate effectively in writing to various audiences. (writing)

Students will think critically and analytically about an issue, idea or problem. (critical thinking)

Part C: GE Programmatic Goals: The GE program aligns with CSUSM specific and LEAP Goals. All B4 courses must meet at least one of the LEAP Goals.

GE Programmatic Goals

LEAP 1: Knowledge of Human Cultures and the Physical and Natural World.

LEAP 2: Intellectual and Practical Skills

LEAP 3: Personal and Social Responsibility

LEAP 4: Integrative Learning

CSUSM Specific Programmatic Goals

CSUSM 1: Exposure to and critical thinking about issues of diversity.

CSUSM 2: Exposure to and critical thinking about the interrelatedness of peoples in local, national, and global contexts.

Part D: Course requirements to be met by the instructor.

Course Requirements:

Course meets the All-University Writing requirement: A minimum of 2500 words of writing shall be required for 3+ unit courses.

All courses offered in area B4 must have a prerequisite of at least intermediate algebra and must use a level of mathematics beyond that of intermediate algebra. No remedial algebra courses (e.g., Math 10, 20, and 30) can be used to satisfy this requirement. Even if a course has intermediate algebra as a prerequisite, it will not satisfy the Quantitative Reasoning Requirement unless it also meets each of the following three conditions:

- It must focus on the use of mathematical language and formal reasoning in a variety of diverse disciplines, using a broad range of examples.
- It must provide some historical perspective on the role which this approach has played in the development of human knowledge and of our understanding of the world.
- It must demonstrate a variety of methods, such as the use of abstract symbols, of numeric techniques, of logical reasoning, of geometry, etc.

A **statistics component** may be included which must:

- Develop the students' ability to comprehend the power and broad utility of the fundamental mathematical models presented, rather than merely teaching rote statistical skills; and
- Must indicate applications to several areas.

A **computer science component** may be included which must:

- Teach a computer language that is suitable for use in diverse areas;
- Teach this language in such a way that the student is led to a fundamental understanding of the nature of problem solving by combining data structures with algorithms; and
- Provide fundamental skills in the use of computers for the application of university level quantitative methods to the solution of problems in many diverse areas.