January 30, 2015

To: General Education Implementation Committee
Curriculum Committee
General Education Sub-Committee (Curriculum Committee)
President Jack Miller
Provost Carl Lovitt
Dean Faris Malhas
Faculty Senate

From: The Department of Mathematical Sciences

Dear Colleagues:

We, in the Department of Mathematical Sciences, write to express our concern over the proposed changes to the General Education curriculum at Central Connecticut State University (CCSU), specifically addressing the pre-requisite and content for Quantitative Reasoning courses.

If we look at the current general education requirement, for Skill Area II: Mathematics, there are 6 required credits depending on the major. The prerequisite course for all Mathematics and Statistics courses in Skill Area II is MATH 101, Intermediate Algebra.

Many of our incoming students graduate from high school with the minimum mathematics requirements or have been away from mathematics for a number of years. Intermediate Algebra is required in order for our students to have the skills necessary to be successful in subsequent mathematics courses.

Removing the MATH 101 pre-requisite will make it impossible for us to address the learning outcomes as stated by our own mission statement in the area of Quantitative Reasoning. Having MATH 101 as a pre-requisite for all Mathematics and Quantitative Reasoning courses will also ensure that the material in the course is at the college level.

The **Standards for Accreditation** 4.19 (effective July 1, 2011) clearly state that graduates successfully completing an undergraduate program demonstrate competence in written and oral communication in English; the ability for scientific and quantitative reasoning, for critical analysis and logical thinking; and the capability for continuing learning, including the skills of information literacy.

NEASC states in 4.17 The general education requirement in each undergraduate program ensures adequate breadth for all degree-seeking students by showing a balanced regard for what are traditionally referred to as the arts and humanities, the sciences including mathematics, and the social sciences. General education requirements include offerings that focus on the subject matter and methodologies

of these three primary domains of knowledge as well as on their relationships to one another.

In the GEIC Mission Statement, it states “In conjunction with the depth of knowledge students receive from their chosen major, a university education offers breadth of knowledge and skills to be "broadly educated, culturally and globally aware students who will contribute meaningfully to their communities as engaged professionals and citizens."

Clearly, these standards as well as the GEIC Mission Statement imply that any and all courses in the general education curriculum are college-level courses. Not having MATH 101 as the pre-requisite for any Mathematical or Quantitative Reasoning course could be an issue for the various accrediting bodies, since a minimal level of competency could not be assured, as MATH 101 is the first step towards a depth of knowledge. All Connecticut State Universities have Intermediate Algebra, equivalent to MATH 101 at CCSU, as a prerequisite for all college level mathematics and statistics courses.

Also, the Department of Mathematical Sciences was not directly involved in determining the best approach for including courses in Mathematical and Quantitative Reasoning in general education. Given that there are many standards and professional societies linked with the content of Mathematical and Quantitative Reasoning courses, and that many faculty members in the Department of Mathematical Sciences are familiar with such standards (for example, the Guidelines for Assessment and Instruction in Statistics Education, the Common Core Standards, and the National Council of Teachers of Mathematics Standards), not including representation from the Department of Mathematical Sciences as a whole may compromise CCSU’s standing with other universities and professional organizations such as the Mathematical Association of America, the American Mathematical Society, the American Statistical Association, and the National Council of Teachers of Mathematics. These professional societies have the expectation that Mathematical and Quantitative Reasoning courses are above the level of MATH 101, Intermediate Algebra, thus at the college level.

The Department of Mathematical Sciences welcomes a further discussion on this important issue.