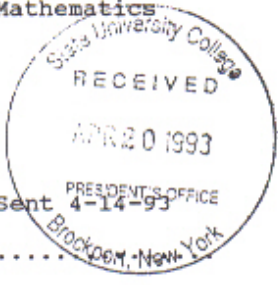


Routing #14 92-93 95 Resolution #12  
1992-1993

TO: President John E. Van de Wetering  
FROM: The Faculty Senate Meeting on 4-5-93  
(Date)  
RE: X I. Formal Resolution (Act of Determination)  
II. Recommendation (Urging the fitness of)  
III. Other (Notice, Request, Report, etc.)  
For your information

SUBJECT: Proposed Change in Requirements for Mathematics



Signed *William J. Blizyk*  
(For the Senate) Date Sent 4-14-93

TO: The Faculty Senate  
FROM: President John E. Van de Wetering  
RE: I. Decision and Action Taken on Formal Resolution  
a. Accepted. Effective Date 7/10/93  
b. Deferred for discussion with the Faculty Senate  
on \_\_\_\_\_  
c. Unacceptable for the reasons contained in the  
attached explanation  
II, III.  
a. Received and acknowledged  
b. Comment:

DISTRIBUTION: See attached list  
(Call Faculty Senate for full copy)

Distribution Date 4/28/93 Signed *[Signature]*  
(President of the College)

February 28, 1993

TO: Georges Dicker  
Chair, Faculty Senate Undergraduate Curriculum Committee

FROM: Norman Bloch  
Chair, Department of Mathematics

RE: PROPOSED CHANGE IN THE REQUIREMENTS FOR THE MAJOR IN MATHEMATICS

At its meeting of December 3, 1992, the Department of Mathematics voted unanimously to increase the number of elective hours required for the Mathematics Major from 6 to 9, thereby increasing the total number of credit hours required from 37 to 40.

CURRENT REQUIREMENTS FOR THE MATHEMATICS MAJOR

27 credit hours of required MTH courses: MTH 201, 202, 203, 281, 346, 424, 425, 446, 457

6 credit hours of MTH electives numbered MTH 399 or higher

4 credit hours of CSC: CSC 203

Total: 37 credit hours.

PROPOSED NEW REQUIREMENTS FOR THE MATHEMATICS MAJOR

27 credit hours of required MTH courses:

MTH 201, 202, 203	Calculus I, II, III
MTH 281	Discrete Mathematics I
MTH 346, 446	Probability and Statistics I, II
MTH 424	Linear Algebra
MTH 425	Modern Algebra
MTH 457	Real Analysis

9 credit hours of MTH electives numbered MTH 399 or higher

COREQUISITE COURSE:

4 credit hours of Computer Science: CSC 203, Fundamentals of Computer Science I

Total: 40 credit hours.

The change, if approved, is to be effective September, 1993.

## RATIONALE FOR THE CHANGE IN THE MATHEMATICS MAJOR

1. STRENGTHENING THE MAJOR TO MEET THE NEEDS OF STUDENTS IN AN AGE OF INCREASED APPLICABILITY OF MATHEMATICS

Most Mathematics Majors at SUNY Brockport choose emphases in:

Certification -- Elementary and Secondary  
Applied Mathematics  
Statistics

In all of these areas students need AT LEAST 36 MTH hours, exclusive of CSC 203. That number is a minimum requirement in view of the need for a thorough grounding in mathematics necessary for competing in the job market and for satisfactory performance in the workplace.

Although we advise students to take more than the minimum number of courses, the reality is that -- human nature being what it is -- most students take only the minimum.

For example, trends in Secondary Education -- emphasis on problem solving, a move to incorporate more applications in the curriculum, the large variety of topics in the Course I-II-III curriculum, as well as the ongoing need for training in Geometry -- call for broader preparation in mathematics for Certification students than can be accomplished under the current requirement of two upper division elective courses.

Similar remarks hold for students who emphasize Applied Mathematics or Statistics. Although classical applications of mathematics to Physics and Chemistry are covered in analysis courses, there has been a recent broadening of applications of mathematics to such areas as scheduling problems, telephone networks, computer science, optimization problems in business and economics, and the vast array of applications of statistics. A Mathematics Major cannot meet all of these needs within the current major. At the very least, a student should take further courses in areas such as Discrete Mathematics, Statistical Methods, and Mathematical Models for Decision Making.

The required number of hours for a Mathematics Major has not been changed since 1980. The proposed increase is an overdue step that will help students meet the new realities of the role of Mathematics in society.

## 2. MEETING THE COMPETITION

Most schools in the region require at least 36 hours in mathematics to complete a Mathematics Major, and some require over 40 hours. In particular:

Geneseo:	36 hours
Fredonia:	42
New Paltz:	42
Buff State:	39
RIT:	64 quarter hours, equivalent to over 40 hrs.

In addition, most schools require corequisite courses. The TOTAL number of hours for a Mathematics Major at New Paltz is 52, and Plattsburgh requires a total of 57 hours, of which up to 54 may be mathematics hours.

Our students compete for jobs with graduates of these institutions. We can TELL students to take more than the minimum requirements in order to meet the competition, but it is better to have the requirements suit the reality.

## 3. BRINGING THE REQUIREMENTS FOR THE MAJOR INTO TECHNICAL COMPLIANCE WITH STATE EDUCATION REQUIREMENTS FOR SECONDARY CERTIFICATION IN MATHEMATICS

New York State requires a 36 hour program in MATHEMATICS for the alternate route to certification, not counting any corequisite courses. Our current major is 37 hours; however, 4 of those credits are in computer science. The required course CSC 203 is more properly listed as a corequisite course from another department. Although existing majors requiring fewer hours in mathematics were "grandfathered," the intent at the State level is clearly to require a strong background in mathematics. See also the comments made above concerning the broadening of the uses of mathematics in realistic applications, and the corresponding need for certification students to have a broader background in the discipline.

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March 26, 1993