

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Laura Glass phone number (302) 831-1647

Department: School of Education email address lglass@udel.edu

Action: Revise concentration

(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term 07F

(use format 04F, 05W)

Current degree MEd

(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: _____
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study: _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: Major: Curriculum and Instruction
Concentration: Mathematics Education

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the

overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter “None”)

MATH 590 Patterns and Algebra for Middle School Teachers

The Middle School Mathematics Certification Option in the Mathematics Education concentration needs to require students to take an Algebra course in order to be accredited by the National Council of Teachers of Mathematics (NCTM). The proposed course MATH 590 fulfills this need.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>

Does not apply.

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter “None”)

The proposed addition of four mathematics courses to the Middle School Mathematics Certification Option affects the Department of Mathematical Sciences. Please refer to the attached permission from this department.

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

One of the degree programs in the School of Education is the M.Ed. in Curriculum and Instruction. There are four concentrations that students can pursue in the program: Science Education, Mathematics Education, Secondary Mathematics Education, and Social Studies Education. There are three proposed revisions to the Mathematics Education concentration.

1. *Revision of the admission requirements.* Currently, there are different admission standards for candidates in the elementary and middle school math specializations. The mathematics education faculty in the School of Education now recognize that admissions decisions are more difficult for elementary math candidates; these candidates can be admitted based on only 9 credits of undergraduate and/or graduate level math, which is up to 6 credits less of math than middle school math candidates. Therefore, there is less information to judge whether the elementary math candidates will be successful in the program. The proposed admission requirement is that all candidates have completed 15 credits in math; this requirement will provide more information for admission decisions. In addition, the specializations are not needed because everyone follows the same program.

Currently, candidates for the Middle School Certification Option have completed one course in Calculus. Another proposed admission requirement is that candidates in the Middle School Certification option have completed a two course sequence in Calculus. *Undergraduate* Elementary Teacher Education majors in the middle school math concentration are required to take a two course sequence in Calculus and we would like the same requirement for students at the *graduate level*. Calculus II is not offered at the graduate level, so they could not take this course as an elective during the program.

2. *Revision of the description of the Electives.* The proposed revision to the description includes deleting the sentence: “Coursework prior to entering the program or while completing the program must cover the following topics: Geometry and Measurement, Statistics and Probability, and Discrete Mathematics.” We want the students who are not pursuing the certification option to take any math or math education courses that help them achieve their personal goals. However, we need the students who are pursuing certification to take particular math courses in order to address specific National Council of Mathematics (NCTM) Program Standards for accreditation. In order to address this need, the certification option needs to require these courses *during* the program, not *prior* to the program.

3. *Revision of the coursework in the Certification Option.* The students who are pursuing the certification option need to take math courses in algebra, geometry, measurement, discrete math, data analysis and probability in order to address specific NCTM Program Standards for accreditation. The proposed revision is to require these students to take MATH 582, 583, 588, and 590 to fulfill this need. These courses can be considered elective courses in the concentration.
4. *Revision of the Praxis II requirement.* Currently, the students are required to take a Praxis II test. This requirement was initially created in order to gather data for accreditation by the NCTM. The NCATE/NCTM Program Report requires that students pursuing initial certification take a standardized test, such as Praxis II. We recently learned from the NCTM that the program report should only include data from students who pursue initial certification. Therefore, we do not need to collect data on students who do not pursue certification and the proposed revision is to remove this expensive test as a requirement for this population. Students who complete the certification option will still take this test. We will collect data for NCATE from other sources for students not pursuing certification.

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

The changes to the titles for EDUC 613, EDUC 619, and EDUC 750 were approved during the 2005-6 school year. The number for the course Implementing Middle School Mathematics Using Technology is EDUC 730, rather than EDUC 672, and was approved during the 2004-5 school year.

Current Concentration	Revised Concentration
<p><u>Admission Requirements</u></p> <p><i>Students specializing in Elementary School Mathematics:</i> Completed a minimum of 15 credit hours in undergraduate and/or graduate level mathematics approved by the math education faculty. Approved courses will be equivalent to the University of Delaware mathematics courses at the 200-level or higher. In some cases, students may be admitted to the program with 9-14 approved credit hours in mathematics. While completing the program, these students must take the number of credit hours needed to obtain 15 mathematics credit hours in addition to the 33 credit hours of coursework required for the Master's degree.</p> <p><i>Students specializing in Middle School Mathematics:</i> Completed a minimum of 15 credit hours in undergraduate and/or graduate level mathematics approved by the mathematics education faculty, including a course in Calculus. Approved courses will be equivalent to the University of Delaware mathematics courses at the 200-level or higher.</p> <p><i>Students interested in the Middle School Mathematics Certification Option:</i></p> <ol style="list-style-type: none"> 1. Completed a minimum of 15 credit hours in undergraduate and/or graduate level mathematics approved by the mathematics education faculty, including a course in Calculus. Approved courses will be equivalent to the University of Delaware mathematics courses at the 200-level or higher. 	<p><u>Admission Requirements</u></p> <p>Completed a minimum of 15 credit hours in undergraduate and/or graduate level mathematics approved by the mathematics education faculty, including a course in Calculus. Approved courses will be equivalent to the University of Delaware mathematics courses at the 200-level or higher.</p> <p><i>Students interested in the Middle School Mathematics Certification Option:</i></p> <ol style="list-style-type: none"> 1. Completed a minimum of 15 credit hours in undergraduate and/or graduate level mathematics approved by the mathematics education faculty, including a two-course sequence in Calculus. Approved courses will be equivalent to the University of Delaware mathematics courses at the 200-level or higher. 2. Passed Praxis I according to the currently required State of Delaware certification requirements.

2. Passed Praxis I according to the currently required State certification requirements.	
Course Requirements <u>I. Research (3 credits)</u> Select one course from the following. EDUC 600 Teacher as Researcher EDUC 607 Educational Research Procedures EDUC 660 Applied Educational Measurement	Same.
<u>II. Specialization (30 credits)</u> A. Required (15 credits) EDUC 640 Introduction to Curriculum EDUC 634 Topics in Mathematics Curricula: Grades K-8 EDUC 636 Teaching Mathematics in the Middle School EDUC 635 Teaching Mathematics in the Elementary School OR MATH 584 Advanced Secondary Mathematics Methods EDUC 672 Implementing Middle School Mathematics Using Technology OR MATH 585 Technology in Secondary Mathematics B. Electives (15 credits) Select courses in mathematics or mathematics education with the approval of the advisor. Coursework prior to entering the program or while completing the program must cover the following topics: Geometry and Measurement, Statistics and Probability, and Discrete Mathematics. Students may choose to complete a Masters Thesis for 6 credits to satisfy this requirement.	<u>II. Specialization (30 credits)</u> A. Required (15 credits) EDUC 640 Introduction to Curriculum EDUC 634 Topics in Mathematics Curricula: Grades K-8 EDUC 636 Teaching Mathematics in the Middle School EDUC 635 Teaching Mathematics in the Elementary School OR MATH 584 Advanced Secondary Mathematics Methods EDUC 730 Implementing Middle School Mathematics Using Technology OR MATH 585 Technology in Secondary Mathematics B. Electives (15 credits) Select courses in mathematics or mathematics education with the approval of the advisor. Students may choose to complete a Masters Thesis for 6 credits to satisfy this requirement.
<u>III. Comprehensive Exam</u> The Comprehensive Exam requirement serves two purposes: (1) it is an opportunity for students to reflect on what they have learned during their coursework and to express their breadth and depth of knowledge in mathematics education, and (2) it is an opportunity for the faculty in mathematics and/or mathematics education to assess students' understanding of issues in mathematics education. The exam is to be taken after the completion of 27 credits of Master's coursework.	Same.
<u>IV. Take the Praxis II Middle School Mathematics or Secondary Mathematics Exam</u> The exam is to be taken after the completion of 27 credits of Master's coursework.	Delete.
<u>V. Total of at least 33 credits.</u>	Same.

Current Option	Revised Option
<p>Middle School Mathematics Certification Option</p> <p>At the end of the M.Ed. program, students must have completed 30 undergraduate and/or graduate mathematics credit hours approved by the math education faculty (these mathematics courses may be taken at the University of Delaware and/or at another institution). Students who satisfy this requirement and complete the coursework below, in addition to the coursework for the M.Ed. in Curriculum and Instruction</p>	<p>Middle School Mathematics Certification Option</p> <p>At the end of the M.Ed. program, students must have completed 30 undergraduate and/or graduate mathematics credit hours before and/or during the program. These credits must be approved by the math education faculty (these mathematics courses may be taken at the University of Delaware and/or at another institution). Students who complete this requirement, the requirements for the M.Ed. in Curriculum and</p>

with a Concentration in Mathematics Education, are eligible for an Institutional Recommendation for Middle School Mathematics teacher certification.	Instruction with a Concentration in Mathematics Education, and the following additional requirements are eligible for Institutional Recommendation for Middle School Mathematics teacher certification.
	<p><u>Additional Requirements</u></p> <ol style="list-style-type: none"> 1. Take the Praxis II Middle School Mathematics Exam (20069) or Mathematics: Content Knowledge (10061) Exam 2. Complete the following four mathematics courses (which can be considered elective courses in the M.Ed. program). <ul style="list-style-type: none"> MATH 582 Discrete Studies in Mathematics MATH 583 Probability and Statistics for Educators MATH 588 Geometry and Measurement for Middle School Teachers MATH 590 Patterns and Algebra for Middle School Teachers
<p><u>Required coursework (18 credits)</u></p> <p>EDUC 613 Educational Psychology: Social Aspects</p> <p>EDUC 619 Diversity in the Classroom</p> <p>EDUC 622 The Role of Literacy in the Content Areas</p> <p>EDUC 658 Discipline and Classroom Management</p> <p>EDUC 750 Internship in Education (6 credits)</p>	<ol style="list-style-type: none"> 3. In addition to completing the 33 credits in the M.Ed. program, complete the following five education courses (18 credits). <ul style="list-style-type: none"> EDUC 613 Adolescent Development and Educational Psychology EDUC 619 Diversity in Secondary Education EDUC 622 The Role of Literacy in the Content Areas EDUC 658 Discipline and Classroom Management EDUC 750 Graduate Teaching Internship

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____ Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Programs & Planning _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____