College of Education
Signature Page

Mathematics Education B.S.

New Program: ______ Revised Program: X
Name of Faculty Sponsor: Rick Austin e-mail: austin@coedu.usf.edu

APPROVALS
List appropriate Department Chair, Committee Chair, Faculty Council Chair and Associate Dean Approving:

Stephen Thornton
Name of Department Chair
Signature 11/8/08

Patty McHatton
Name of Committee Chair
Signature

Erwin Johanningmeier
College Council Chair
Signature

Michael Stewart, Ph.D.
Name of Associate Dean
Signature

CONCURRANCE
List other units and department of the University that have been consulted, comments and supporting remarks:

<table>
<thead>
<tr>
<th>UNIT</th>
<th>CHOICE ONE: CONCURRENCE, NON-CONCURRENCE or DEFER RECOMMENDATION</th>
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COUNCIL/DEAN APPROVALS
Recommendation of Undergraduate Council: Approved: _____ Disapproved: _____

Signature of Undergraduate Council Chair: ________________________________ Date___________

Action by the Undergraduate Studies Dean of: Approved: _____ Disapproved: _____

Signature of Dean: ________________________________ Date___________

Effective Date (Term): ________________________________
Overview of Program Change Request for the Mathematics Education Program

In order to comply fully with the State of Florida mandate that undergraduate programs not be allowed to exceed 120 credit hours, the mathematics education program faculty are requesting the following change to the long established mathematics education program of study. Rather than continuing to require both MAS 3105 Linear Algebra (4) and MAS 4301 Elementary Abstract Algebra (3) from the Mathematics Department in the College of Arts and Sciences, we recommend that students have a choice to take either one or the other of these two particular courses. This choice reflects the current certification language for secondary mathematics teachers. Depending upon which course students choose, the total required hours in the new program would drop from 122 to either 119 or 118. The hours needed for an individual student to reach 120 for graduation purposes would be elective.

This change would not affect any of the accomplished practices for the mathematics education program. Forms; A, B and D are attached and have been updated to reflect the current language of the undergraduate catalog for course descriptions and accurate course numbers.
REVIEW FORM A
PROGRAM DESCRIPTION

DEPARTMENT: Secondary Education

PROGRAM TITLE: Mathematics Education     DEGREE LEVEL: B.S.

I. PURPOSE OF NEED

Why does the program exist? What need does it fulfill?

See Generic Form A for College-wide purpose and need. For this program,

There is a severe need for qualified secondary mathematics teachers in the State of Florida, and across the nation. The state of Florida has recently, again, identified mathematics as an area of critical teacher shortage. School districts in the surrounding counties are having to hire long term substitute teachers to teach their middle and high school mathematics classes because there are not enough secondary mathematics teachers available. For the last few years, Hillsborough County alone has had from 45 to 55 positions open each year for secondary mathematics teachers. The Mathematics Education program contributes to the College of Education's purposes and goals by having a program that is designed to produce highly skilled mathematics teachers for the profession. The purposes of the program are: (1) to provide opportunities for the prospective teacher to attain competencies needed to be an effective teacher, and (2) to prepare prospective teachers who exceed the existing state certification requirements.

II. PHILOSOPHY

What assumptions underlie the program? How do they relate to each other and/or the identified needs? How do they related to the value statements in the College's conceptual framework?

See Generic Form A for College-wide philosophy. For this program,

The teaching/learning process is complex and dynamic. To be an effective mathematics teacher in the secondary schools requires a liberal arts education with special emphasis in mathematics, mathematics education (teaching emphasis) and other professional studies (learning, curriculum and instruction, current issues, etc.). The Mathematics Education program is designed to provide students with opportunities to acquire this knowledge base and to synthesize and apply it within a problem solving context in secondary school mathematics classrooms. In addition, we wish our graduates to be confident in their abilities to practice critical thinking and problem solving skills, to become reflective practitioners, and to maintain a healthy interest in intellectual inquiry.
III. RATIONALE

Upon what knowledge bases (professional literature on research and best practice) does it draw?

See Generic Form A for College-wide knowledge base. For this program,

The Mathematics Education program has three components: liberal arts general education, additional extensive liberal arts course work in mathematics, and professional education studies. The mathematics teaching emphasis is operationally defined as the intersection of the three components. Programs based on this model prepare students to be problem solvers in an educational setting. The mathematics education program had been cited as an example of a sound program after its last accreditation study. This program already reflected the identified needs of students preparing to become mathematics teachers as compiled from research and published by the National Council of Teachers of Mathematics (NCTM) in guidelines for the preparation of teachers from 1994, and Professional Standards for Teaching Mathematics (1991) as well as the American Mathematics Association's A Call for Change: Recommendations for the Preparation of Teachers of Mathematics (1991). The mathematics education program was last reviewed by NCTM in 1999 and was granted continued approval.
### VIII. EXIT CRITERIA

*Specify the exit criteria for program completion, including both the category and the criterion. The matrix has been partially completed.*

<table>
<thead>
<tr>
<th>Category</th>
<th>Criterion</th>
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<tbody>
<tr>
<td>GPA</td>
<td>Minimum of 2.5</td>
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<tr>
<td>FTCE (initial preparation programs only)</td>
<td>Passing score on all three subtests (GK, Professional, and Mathematics 6 - 12)</td>
</tr>
<tr>
<td>Internship</td>
<td>Successful Completion</td>
</tr>
</tbody>
</table>
| Evidence of Attainment of Accomplished Practices (initial preparation programs only) | AP 1: ________  
AP 2: ________  
AP 3: ________  
AP 4: ________  
AP 5: ________  
AP 6: ________  
AP 7: ________  
AP 8: ________  
AP 9: ________  
AP 10: ________  
AP 11: ________  
AP 12: ________  |

### IX. PROGRAM EVALUATION

*What process is used to evaluate the program? (What? When? How often? By whom?) How do the faculty and stakeholders determine if program goals are achieved, i.e., if alumni have attained the knowledge and skills necessary to meet role/task requirements? What procedures are used to translate student assessments to data for use in program modification and improvement?*

See Generic Form A for College-wide strategies, including alumni survey, principals' survey, exit survey, cooperating teacher and university supervisor intern evaluations, and rehire study. For this program,

1. Informal feedback from current supervising teachers as well as graduate students, who are
teaching in the area and are frequently working with our intern teachers and recent graduates of the program. This information is discussed at least each semester at a mathematics education program faculty meeting.

2. At the completion of the senior seminar students complete a questionnaire or several reflective journal entries. This information is used by mathematics education faculty during program area meetings to reflect on the overall program.

3. Each course and professor is evaluated by students at the end of each semester.
### Form A Matrix

Program specific goals begin with goal #12, since goals 1-11 are common across most programs and are provided in the Generic Form A Matrix. The eleven college-wide goals may include program specific additions, which should be added to the Generic Form Amatrix.

<table>
<thead>
<tr>
<th>IV. GOALS</th>
<th>V. ACCOMPLISHED PRACTICES</th>
<th>VI. OBJECTIVES</th>
<th>VII. COURSES &amp; EXPERIENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What are the desired results</strong></td>
<td><strong>Identify the predominant</strong></td>
<td><strong>What specific knowledge and skills are to be acquired for each goal?</strong></td>
<td><strong>Which courses and experiences help to fulfill each objective?</strong></td>
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<tr>
<td><em>(general areas of knowledge and skill preparation)</em> (Note: Begin numbering goals with 12.0.)</td>
<td><strong>Accomplished Practice(s)</strong> related to this goal.</td>
<td><em>(Note: Begin numbering objectives with 12.1.)</em></td>
<td><em>(Note: For courses, list course numbers or titles. Courses may be listed more than once, and more than one course/experience may be listed for any objective. This column does not need to be numbered.)</em></td>
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</tbody>
</table>

**12.0 Acquire mathematics content knowledge as recommended by the National Council of Teachers of Mathematics (NCTM)**

<table>
<thead>
<tr>
<th>Practice #8 Knowledge of subject matter</th>
<th>Practice #12 Technology</th>
<th>12.1 to use structured mathematical symbolism and terminology;</th>
<th>21.1 – 12.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12.2 to solve problems and explain basic concepts in algebra, geometry, trigonometry, calculus, linear algebra, abstract algebra, probability, statistics, number theory, and discrete mathematics;</td>
<td>MAC 2311 CALCULUS I</td>
</tr>
<tr>
<td></td>
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<td>12.3 to recognize and construct consistent and logical arguments (proofs) for statements in the above areas of mathematics;</td>
<td>MAC 2312 CALCULUS II</td>
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<td>12.4 to demonstrate the interrelationship of the different branches of mathematics;</td>
<td>MAC 2313 CALCULUS III</td>
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<td>12.5 to make appropriate use of calculators and computers in problem solving as well as in exploring and developing mathematical concepts;</td>
<td>STA 2023 INTRO. STATISTICS</td>
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<td>MAD 3100 DISCRETE MATHEMATICS</td>
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<td>MGF 3301 BRIDGE TO ABSTRACT MATH.</td>
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<td>MAS 3105 LINEAR ALGEBRA</td>
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<td>MAS 4214 ELEM. NUMBER THEORY</td>
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<td>MAS 4301 ELEM. ABSTRACT ALGEBRA</td>
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<td>MHF 4403 EARLY HISTORY OF MATH.</td>
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<td>MTG 3212 GEOMETRY</td>
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<td>or</td>
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<td>MTG 4214 MODERN GEOMETRY</td>
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<table>
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<tr>
<th>12.5 - 12.6</th>
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<tbody>
<tr>
<td>MAE 4652 TECH TCH SEC MATH I</td>
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<tr>
<td>MAE 4653 TECH TCH SEC MATH. II</td>
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<tr>
<td>EME 2040 INTRO TO TECHNOLOGY</td>
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<tr>
<td>State mandated programming course prerequisite</td>
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<td>IV. GOALS</td>
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<tr>
<td>What are the desired results (general areas of knowledge and skill preparation)? (Note: Begin numbering goals with 12.0.)</td>
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</table>
| | | 13.5 to identify and use problem solving strategies appropriate to secondary mathematics; | 31.5 – 31.7  
MAE 4320 TEACH MATH. MIDDLE GR  
MAE 4330 TEACH SR HIGH MATH.  
MAE 4551 READ LANGUAGE OF MATH. |
<p>| | | 13.6 to identify, solve, and develop word problems involving the mathematical concepts and principles usually taught in secondary mathematics; | |
| | | 13.7 to use algebra and number theory to analyze standard and/or unusual algorithms for computation with real numbers; | |
| | | 13.8 to use appropriate models and levels of reasoning to explain the mathematical concepts and principles usually taught in secondary mathematics; | |
| | | 13.9 to develop plans for activities and/or lessons to teach appropriate secondary mathematics topics; | |
| | | 13.10 to describe and use methods for diagnosing remedying common deficiencies in the learning of mathematics; | |
| | | 13.11 to illustrate and/or explain numeration concepts (cardinal and ordinal numbers, place |
| | | | |</p>
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<td>Identify the predominant Accomplished Practice(s) related to this goal.</td>
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<tr>
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<td></td>
<td>13.12 to explain the concepts of fraction (including decimals), integers, ratio, proportion, and per cent using appropriate models;</td>
<td>13.16 MAE 4330 TEACH SR HIGH MATH.</td>
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<tr>
<td></td>
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<td>13.13 to use the usual algorithms for the four basic operations with integers and with positive and negative rational numbers (including decimal notation) and explain these algorithms using appropriate models;</td>
<td></td>
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<tr>
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<td>13.14 to use the relations of equality and inequality with whole numbers and with positive rational numbers and to illustrate these relations using appropriate examples;</td>
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<td>13.15 to use standard (including metric) and nonstandard units in measuring length, perimeter, area, capacity, volume, mass, weight, angle, time, and temperature;</td>
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<td>13.16 to develop and demonstrate (teach) sample lessons and/or activities consistent with effective teaching models;</td>
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<td>13.17 to identify strategies for incorporating reading and writing in the mathematics</td>
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<td>14.0 To function effectively in an actual secondary school setting and more specifically, within a mathematics classroom</td>
<td>Practice #1 Assessment</td>
<td>classroom.</td>
<td>13.17</td>
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<td></td>
<td>Practice #2 Communication</td>
<td></td>
<td>MAE 4551 READ LANGUAGE OF MATH.</td>
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<td>Practice #3 Continuous Improvement</td>
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<td></td>
<td>Practice #4 Critical Thinking</td>
<td>14.1 to demonstrate positive attitudes toward children, mathematics and teaching;</td>
<td>14.1 - 14.11</td>
</tr>
<tr>
<td></td>
<td>Practice #5 Diversity</td>
<td>14.2 to communicate with learners individually, in small groups and in large group settings;</td>
<td>MAE 4940 INTERNSHIP IN MATH. ED.</td>
</tr>
<tr>
<td></td>
<td>Practice #6 Ethics</td>
<td>14.3 to recognize individual differences and to adapt their teaching methods to such differences;</td>
<td>MAE 4936 SR. SEMINAR IN MATH. ED.</td>
</tr>
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<td></td>
<td>Practice #7 Human Dev. and Learning</td>
<td>14.4 to relate to learners with different interests and backgrounds;</td>
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</tr>
<tr>
<td></td>
<td>Practice #8 Knowledge of Subject Matter</td>
<td>14.5 to plan for instruction and use a variety of instructional models when teaching;</td>
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<td></td>
<td>Practice #9 Learning</td>
<td>14.6 to organize classroom records and materials;</td>
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<td>14.7 to develop examples, activities, and problems appropriate to the learners and the mathematical concepts or skills being taught;</td>
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<td>14.8 to use resource materials (manipulatives,</td>
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<tr>
<td>Environment</td>
<td>games, kits, calculators, computer software, video tapes, periodicals and books appropriate to the learners and the mathematics being taught;</td>
<td>14.9 to develop an appropriate standard of behavior for their classroom and to obtain adherence to it;</td>
<td></td>
</tr>
<tr>
<td>Practice #10 Planning</td>
<td></td>
<td>14.10 to evaluate the progress of individual pupils and prescribe appropriate remedial or enrichment work in light of this evaluation;</td>
<td></td>
</tr>
<tr>
<td>Practice #11 Role of the Teacher</td>
<td></td>
<td>14.11 to evaluate and improve their own professional competencies and to remain aware of and take advantage of opportunities for professional development.</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM TITLE: Secondary Mathematics Education

DEPARTMENT/COLLEGE: Secondary Education / Education

DEGREE LEVEL: Bachelor's

USF General Education Requirements:
36 semester hours
(must be selected from approved USF courses)

English Composition: 6 semester hours
Quantitative Methods: 6 semester hours
Natural Science: 6 semester hours one natural science with lab experience
Social Sciences: 6 semester hours
Historical Perspectives: 6 semester hours
Fine Arts: 3 semester hours
African, Latin American, Middle Eastern or Asian Perspectives: 3 semester hours

Common Statewide Prerequisites for All Education Majors:
9 semester hours

EDF 2005 INTRODUCTION TO EDUCATION AND FIELD EXPERIENCE (3) ED EDC
Introductory survey course required for admission to the College of Education. A broad overview of the history, sociology and philosophy of education in the United States focuses on education as a field of study and teaching as a profession. Includes lecture and field experience.

EDG 2701 TEACHING DIVERSE POPULATIONS AND FIELD EXPERIENCE (3) ED EDC
Introductory survey course required for admission to the College of Education. Places schools and teaching within the context of the U.S. as a pluralistic society. Topics include the demographics of diversity; prejudice; elements of culture; American heritage of diversity and its value; and barriers to cultural understanding. Includes lecture and field experiences.

EME 2040 Introduction to Computers in Education (3) ED EDK
Designed as an introduction to computer technology and its role in teaching and learning processes. Topics include educational software, ethical and social issues, hardware, interactive multimedia, models for integrating technology into instruction, productivity tools and telecommunications.
Common Statewide Prerequisites for All Mathematics Education Majors:
15 semester hours

MAC 2311  CALCULUS I 6A QM (4)  AS MTH
PR: C (2.0) or better in MAC 1114 and C (2.0) or better in MAC 1140 or 650 or better SAT Math score or 29 or better ACT Math score or 90 or better College-level Math CPT score and knowledge of trigonometry. No credit for Mathematics Majors or students with credit in MAC 2281 or MAC 2311. Differentiation, Limits, differentials, extremes, indefinite integrals. No credit for students with credit in MAC 2230 or MAC 2233 or MAC 2311.

MAC 2312  CALCULUS II 6A QM (4)  AS MTH
PR: C (2.0) or better in MAC 2311 or CC. No credit for students with credit in MAC 2234 or MAC 2282. Antiderivatives; the definite integral; applications; series; log, exponential, and trig functions.

Mathematics Elective  (4)

Computer Programming (3)  Computer Programming in a language appropriate for micro computers
(Satisfied by MAE 4652)

Other Lower Division Mathematics Requirements
8 semester hours (may count as prerequisite elective)

MAC 2313  CALCULUS III 6A (4)  AS MTH
PR: C (2.0) or better in MAC 2312  No credit for students with credit in MAC 2283. Integration, polar coordinates, conic sections, vectors, indeterminate forms, and proper integrals.

STA 2023  INTRODUCTORY STATISTICS I 6A QM (4)  AS MTH
PR: C (2.0) or better in MAT 1033 or 440 or better SAT Math score or 19 or better ACT Math score or 72 or better Elementary Algebra CPT score. No credit for Mathematics Majors. Descriptive statistics, basic probability principles, discrete and continuous probability distributions: binomial, normal, t, and chi-square; point estimation, confidence limits, and hypothesis testing. Emphasis on application to social sciences, life sciences, physical sciences, engineering, and business.

Upper Division Mathematics Courses
19 semester hours

MAD 3100  DISCRETE MATHEMATICS 6A (3)  AS MTH
PR: MAC 2281 or MAC 2311  No credit for Mathematics Majors
An introduction to some of the aspects of discrete mathematics that are fundamental to digital computing. Topics include: sets, numbers, algorithms, Boolean algebra, computer arithmetic, elementary combinatorics and an introduction to graph theory.

MGF 3301 Bridge to Abstract Mathematics 6A QM (4)  AS MTH
CP: MAC 2313 or MAC 2283. Techniques and logic of the construction of proofs. Topics will be selected from propositional logic, set theory, relations and functions, equivalence relations, Boolean algebra, cardinality, and limits.
MAS 4214   ELEMENTARY NUMBER THEORY 6A (3) AS MTH  
PR: MAC 2312  No credit for Mathematics Majors   Divisibility, prime numbers, Fundamental Theorem of Arithmetic, Diophantine equations, the algebra of congruences, number functions and other selected topics.

MHF 4403   EARLY HISTORY OF MATHEMATICS 6A MW (3) AS MTH  
PR: MAC 2312 and upper level standing  
A study of the history and development of mathematics and its cultural impact from the formation of number systems to the Renaissance.

MTG 3212   GEOMETRY 6A (3) AS MTH  
PR: MGF 2311  No credit for Mathematics Majors.  Emphasis on axiomatics, advanced Euclidean geometry, elements of projective geometry, non-Euclidean geometries.

OR

MTG 4214   MODERN GEOMETRY 6A (3) AS MTH  
CR: MAS 4301 or CI.  Topics will be selected from modern plane geometry, Mobius geometry, elliptic and hyperbolic geometry.

MAS 3105   LINEAR ALGEBRA 6A (4) AS MTH  
PR: MGF 3301.  CO: MAC 2883 or MAC 2313 Linear systems, matrix algebra, vector spaces, linear independence, inner product spaces, Gram-Schmidt algorithm, linear transformations and matrix representations, determinants, inner product spaces, eigenvalues, diagonalization, and quadratic forms.

OR

MAS 4301   ELEMENTARY ABSTRACT ALGEBRA 6A (3) AS MTH  
PR: MAS 3105  An introduction to the basic algebraic structures; groups, rings, integral domains and fields; homomorphisms and isomorphisms.

Mathematics Education Courses  
27 semester hours

MAE 4320 Teaching Mathematics in the Middle Grades (3) ED EDO  
PR: Admission to Mathematics Education program or DPR. Techniques and materials of instruction in middle grades mathematics topics. Students are expected to observe 15 hours in middle schools.

MAE 4330 Teaching Senior High School Mathematics (3) ED EDO  
PR: Admission to Mathematics Education program or DPR. Techniques and materials of instruction in mathematics. Students are expected to observe 20 hours in high schools.

MAE 4551 Reading the Language of Mathematics (3) ED EDO  
PR: Admission to Mathematics Education program or DPR. The course provides the prospective secondary math teacher the opportunity to develop concepts, skills and instructional procedures effectively integrating communication (reading, writing, listening, speaking) into the math curriculum. Required under Math Ed. program.

MAE 4652 Technology for Teaching Secondary School Mathematics I (3) ED EDO  
PR: Admission to Mathematics Education Program or DPR. This course prepares secondary mathematics education majors to write computer programs in both QBASIC and Logo 4.0 that are appropriate for secondary school mathematics classrooms. A variety of uses of computers in mathematics instruction will also be covered.
MAE 4653 Technology for Teaching Secondary School Mathematics II (3) ED EDO
PR: Admission to Mathematics Education program or DPR. This course prepares secondary mathematics education majors to be proficient with hand-held technologies such as; graphing calculators, symbolic manipulators, calculator based laboratory systems and hand held geometric drawing tools.

MAE 4909 Directed Study: Mathematics Education (1-3) ED EDO
PR: Senior Standing and CI. To extend competency in teaching field.

MAE 4936 Senior Seminar in Mathematics Education (2) ED EDO
PR: Senior Standing; CR: MAE 4940. Synthesis of teacher candidate’s courses in complete college program.

MAE 4940 Internship: Mathematics Education (1-12) ED EDO
CR: MAE 4936. S/U only. One full semester of internship in a public or private school. In special programs where the intern experience is distributed over two or more semesters, students will be registered for credit which accumulates from 9 to 12 semester hours.

Professional Studies Core Courses:
17 semester hours

EDF 3214 HUMAN DEVELOPMENT AND LEARNING (3) ED EDF
PR: General psychology and Admission to College of Education Application of respondent and operant learning principles to classroom learning, teaching models for different instructional goals, analysis of teaching behavior, micro-teaching.

EDF 3604 SOCIAL FOUNDATIONS OF EDUCATION MW (3) ED EDF
PR: Upper level standing Social, economic and political context within which schools function and the values which provide direction for our schools

EDF 4430 MEASUREMENT FOR TEACHERS (3) ED EDQ
PR: Upper level standing Concepts and skills related to designing and developing classroom tests; evaluating tests, instruction, and student progress; and communicating student achievement. Including application of performance assessment techniques and computer applications for measuring and assessing pupil progress.

EEX 4070 INTEGRATING EXCEPTIONAL STUDENTS IN THE REGULAR CLASSROOM (2) ED EDS
No credit for department majors. Designed for non-special education majors. Includes basic identification techniques and strategies to promote the academic and social integration and interaction of "mainstreamed" exceptional students. Concurrent field experience projects are included.

FLE 4365 ESOL Competencies and Strategies (1-3) ED EDX
Designed to enable participants to meet the special limitations and cultural educational needs of LEP students in content area classes. Designed to provide a theoretical and practical foundation for ESOL competencies and strategies.

ESE 4322 Classroom Management for Diverse School and Society (3) ED EDI
Focuses on classroom management in secondary schools including classroom climate, specific strategies to address management issues, school safety, violence, diversity, ethics, and educational law.
REVIEWS FORM D

POSSIBLE SEQUENCE OF COURSES  
Mathematics Education

This possible sequence of courses assumes that a student begins as a freshman at USF intending to become a mathematics teacher. The availability of courses offered by various departments may not always follow this outline. Pre-requisite courses, as identified in the undergraduate catalogue are covered by this sequence of courses. Currently, students must include nine hours of coursework taken during the summer semester(s) as a graduation requirement. This is covered between years 3 and 4. During the last two years the Professional Education Core courses may be rearranged in the schedule as fits the student’s plans.

YEAR 1

Fall
MAC 2311 Calculus I (4)  
EDF 2005 Intro to Education (3)  
Two General Education Electives (6)

Spring
MAC 2312 Calculus II (4)  
EDG 2701 Teaching Diverse Pop. (3)  
Three General Education Electives (9)

YEAR 2

Fall
MAC 2313 Calculus III (4)  
EME 2040 Intro. to Computers Ed. (3)  
Two General Education Electives (6)

Spring
STA 2023 Intro. to Statistics. (4)  
Three General Education Electives (9)

YEAR 3

Fall
MAE 4652 Tech I (3)  
MAE 4320 Middle. Sch. Methods (3)  
MGF 3301 Bridge to Abstract Math (4)  
MTG 3212 Geometry (3)  
EDF 3604 Social Foundations (3)  
(or other Education Core Course)

Spring
MAE 4653 Tech II (3)  
MAE 4330 High Sch. Methods (3)  
MAD 3100 Discrete Math (3)  
MAS 3105 Linear Alg. (4) / MAS 4301 Abs. Alg. (3)  
EEX 4070 Except. Students (2)  
(or other Education Core Course)

Summer
EDF 3214 Human Dev/Lrn (3)  
FLE 4365 ESOL Comp. Course (3)  
EDF 4430 Measurement for Teachers (3)  
(or other Education Core Course)
## Year 4

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>MAE 4551 Reading the Language of Math. (3)</td>
<td>MAE 4940 Internship (10)</td>
</tr>
<tr>
<td>MHF 4403 Early History of Math (3)</td>
<td>MAE 4936 Sr. Sem. Math Ed. (2)</td>
</tr>
<tr>
<td>MAS 4214 Ele. Number Theory (3)</td>
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</tr>
<tr>
<td>ESE 4344 Classroom Management (3)</td>
<td></td>
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<tr>
<td>(or other Education Core Course)</td>
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</tbody>
</table>

11/13/08
F. Student Population

i. The mathematics education program was developed for those students who wanted to become teachers of mathematics at the secondary (middle grades or high school) level. Students take the mathematics classes in the Mathematics Department in the College of Arts and Sciences, and the pedagogy and foundations classes in the College of Education.

ii. The entry requirements are those established by the state for admission to the mathematics education program as majors. This includes the three state mandated courses, the further prerequisite for math ed majors is to complete Calculus I and Calculus II and a 4 hour elective in mathematics. Hopefully students will take either Calculus III or the Intro to Statistics course, because those are required in the program later anyway. The state also mandates that they have a course in computer programming in a language applicable to microcomputers. That is accomplished by taking MAE 4652 Teaching Secondary School Mathematics with Technology I. Pre-Education advisors are aware of this arrangement and it has been working smoothly for as many years as the state pre-requisites have existed. Students also have their GPA checked prior to admission.

iii. Retention policies are those common to the College.

iv. All of the student advising is through the Pre-Education Advising office until they are admitted to the program. After admission, the Student Academic Services undergraduate advisor takes over all of the advising duties.

G. Program Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Austin</td>
<td>Associate</td>
</tr>
<tr>
<td>H. Gerretson</td>
<td>Assistant</td>
</tr>
<tr>
<td>G. Kersaint</td>
<td>Associate</td>
</tr>
<tr>
<td>D. Thompson</td>
<td>Full</td>
</tr>
</tbody>
</table>

H. Program History

The mathematics education program dates back to the establishment of the College of Education. It has been continuously in operation for all of those years. There are currently about 80 mathematics education majors who have been admitted to the program and are at various stages of completion.
covered, by this sequence of courses. Currently, students must include nine hours of coursework taken during the summer semester(s) as a graduation requirement. This is covered between years 3 and 4. During the last two years the Professional Education Core courses may be rearranged in the schedule as fits the student’s plans.

**YEAR 1**

**Fall**

MAC 2311 Calculus I (4)  
EDF 2005 Intro to Education (3)  
Two General Education Electives (6)

**Spring**

MAC 2312 Calculus II (4)  
EDG 2701 Teaching Diverse Pop. (3)  
Three General Education Electives (9)

**YEAR 2**

**Fall**

MAC 2313 Calculus III (4)  
EME 2040 Intro. to Computers Ed. (3)  
Two General Education Electives (6)

**Spring**

STA 2023 Intro. to Statistics. (4)  
Three General Education Electives (9)

**YEAR 3**

**Fall**

MAE 4652 Tech I (3)  
MAE 4320 Middle. Sch. Methods (3)  
MGF 3301 Bridge to Abstract Math (4)  
MTG 3212 Geometry (3)  
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(OR other Education Core Course)

**Summer**

EDF 3214 Human Dev/Lrn (3)  
FLE 4365 ESOL Comp. Course (3)  
EDF 4430 Measurement for Teachers (3)  
(OR other Education Core Course)