MASTER'S PROGRAM IN MATHEMATICS EDUCATION

STUDENT HANDBOOK

AN OVERVIEW OF THE PROGRAM AND THE CAPSTONE REQUIREMENTS

SOUTHERN CONNECTICUT STATE UNIVERSITY

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PREFACE

This handbook has been created for *you*, the graduate candidate pursuing a Master's degree in mathematics education. It contains information you will need to read before coming to your interview as well as information that you will need to successfully complete your program. Please keep this handbook in a convenient place. It should be used as a reference to guide you through your program at SCSU. Do not hesitate to consult with the Mathematics Department Graduate Coordinator if you have questions. The purpose of this document is to provide quick and easily accessible information. Though we strive to keep it as up-to-date and accurate as possible, please remember that the Graduate Catalog remains the final authority regarding all matters that pertain to deadlines, graduation requirements and successful degree completion.

We wish you the best of success in your studies!

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I. ADMISSION INTO THE PROGRAM

The Master of Science degree in mathematics education is designed primarily for certified mathematics teachers, allowing for the scholarly study of mathematics as well as the development of skills that aid in teaching.

Application Deadline

Students are encouraged to apply by May 1 for the fall semester and November 1 for the spring semester.

Course Requirements

Candidates must hold a Bachelor's degree from an accredited college or university and have had a minimum of 18 semester hours of undergraduate mathematics including calculus, geometry, linear and abstract algebra, probability and statistics. Deficiencies may be overcome by taking appropriate courses under advisement.

GPA Requirements

Each candidate must have a minimum of 3.0 GPA (grade point average) at the time of application to the School of Graduate Studies. This GPA includes all undergraduate course work as well as all graduate course work that did not already count toward a completed graduate degree.

Non-Matriculated Students

Non-matriculated students should have verification of having been awarded a bachelor's degree on file and must meet any program and course requirements to register for mathematics classes. A non-matriculated student may earn no more than 9 credits toward their degree before enrolling in the Master's program.

Application to the Program

- Each candidate must apply by filling out the on-line application at the School of Graduate Studies website: http://www.southernct.edu/grad/admissions/.

- Official copies of all transcripts (both undergraduate and graduate) must be sent directly to the School of Graduate Studies.

- Two letters of recommendation and a personal essay should be sent directly to the School of Graduate Studies.

Letters of Recommendation

Each candidate must submit two letters of recommendation indicating the candidate's potential for doing graduate mathematics course work. Preferably, at least one of these letters will come from a former mathematics professor. For applicants that are currently full-time teachers, a letter from a department head or supervisor is preferred. Letters from friends and/or family members are not acceptable. Once completed, these letters must be submitted directly to the Mathematics Department Graduate Coordinator.

The Admission Essay

Each candidate must submit an essay on why he/she would like to obtain a Master's degree in mathematics education. The essay must be between 250 and 500 words, typed, using a font no larger than 12-point, double-spaced, and signed. You must use correct grammar and spelling. This essay must be submitted directly to the Mathematics Department Graduate Coordinator.

Your essay must address the following points, in no particular order:

- What people or events influenced your decision to teach mathematics? (You do not need to use anyone's name in your essay if you do not wish to.)
- When, or under what circumstances, did you first develop an interest in mathematics?
- What qualities do you possess that would make you a good mathematics teacher?
- In what ways can you contribute to our program?
- What do you hope to gain from the program?
- Include any other items in your essay that you feel we should know, such as hobbies/interests, awards received, etc.

Save a copy of your essay in preparation for your department interview.

The Department Interview

Once the application is complete, each candidate must schedule an interview with the Mathematics Department Graduate Coordinator and one member of the Mathematics Department's Graduate Student Affairs Committee. The interview will only be scheduled once we have your letters of recommendation and the essay. The interview will usually not last more than 30 minutes. This is our first chance to get to know you better. **Before the interview, we suggest that you read the rest of this handbook since you will be asked to choose electives and a capstone experience. You should also review your essay and be prepared to talk about it. Finally, please arrive on time, and if you need to cancel the interview for any reason, let us know as soon as possible. Feel free to ask questions and stay relaxed; we are here to help!**

Upon completion of the interview, each candidate will be recommended for entry into the program, advised to defer their application until some conditions are met, or advised that they are not recommended for the program at this time.

II. THE PLANNED PROGRAM

Candidates that are recommended for entry into the Master's Program will complete a planned program of study during the departmental interview. It will become official once it is signed by the student, Graduate Coordinator and Dean of Graduate Studies. To graduate, a student must fulfill the requirements specified on the planned program. A planned program may be revised, in which case a copy of the revision bearing the student's and Graduate Coordinator's signatures must be submitted to the School of Graduate Studies. **In order to receive a degree from SCSU, all requirements from the planned program must be completed within a period of 6 years, which begins with the semester when the first course applied to the degree was taken (so this includes transfer courses), not with the date of acceptance to the program. Thus, graduate courses and planned programs have, at best, a six-year validity.**

Required Courses

Each candidate must complete core requirements of 21 credit hours. The required courses are:

MAT 508	Technology Enriched Mathematics Instruction I	3.0
MAT 514	Teaching Math. to Accel. Students and Low Achievers	3.0
MAT 526	Probability and Statistics II	3.0
MAT 530	Foundations of Geometry	3.0
MAT 541	Topics in Real Analysis	4.0
MAT 574	Algebraic Structures II	3.0
MAT 595	Seminar in Mathematics Education	2.0

Upon completing these 21 credits, candidates choose one of the following plans:

Master's Thesis—Total of 30 credits
Thesis Seminar (MAT 590) and Thesis—6 credits
Electives—3 credits

Comprehensive Exam—Total of 30 credits
Electives—9 credits

Special Project—Total of 36 credits
Electives—15 credits

Graduation Requirements

GPA Requirement. At the time of graduation, a candidate must have a minimum of 3.0 GPA at SCSU. In order to "pass" a class, a graduate student must earn a grade of C or better.

Graduation Deadline. Students must apply for graduation early. The dates can be found on the Registrar's web page. In order to apply for graduation, a student must fill out the proper form issued by the School of Graduate Studies (this form is different from the Commencement Participation Form). The date by which the Registrar's Office needs to be notified that the

capstone experience was completed is generally about one month after the end of the semester. Please contact the Registrar's Office for specifics.

Commencement. Even if the capstone experience for the program is not quite completed, a student may still walk at commencement. In order to attend commencement, a student must fill out the proper form issued by the School of Graduate Studies. A student who has no more than 6 credits of coursework yet to be completed is allowed to participate in commencement exercises.

Thesis Seminar MAT 590

Once a student has a faculty Thesis Advisor and the Thesis proposal has been formally accepted, the Advisor or student will notify the Chairperson who will then ask the Office of the Dean of Arts and Sciences to create a section of MAT 590 for the student to register for. A student can register for MAT 590 over the summer only if the Thesis Advisor is available. Please be aware that the deadline for a thesis to be submitted to the Graduate School is generally 6-8 weeks before the end of the semester. Please check with the Graduate School for specifics.

Some Rules Regarding Elective Courses

MAT 525/573. These may count as elective courses in the M.S. program if the student has a Bachelor's degree in mathematics and needs to take either of these courses as prerequisites to the program. However, they may NOT count as elective courses toward the M.S. degree if the student took the equivalent courses as an undergraduate or if the student needs to take the courses for certification.

Undergraduate Mathematics Courses. A student may apply up to 6 credits of undergraduate mathematics courses numbered 3xx or 4xx (completed at SCSU) toward their Master's degree. These courses must be taken after the student has been accepted into the M.S. program and they must not serve as prerequisites for graduate-level courses.

Independent Study Courses

A graduate student may not apply more than one directed independent study course to a planned program, and that one course may not carry more than 3 credit hours. Only matriculated students who have completed a minimum of 9 credits of graduate work and have attained at least a B (3.0) average are eligible for an independent study. A graduate independent study course requires a graduate level scholarship that is at least equivalent to the work required in regular graduate courses. It requires approval from the Graduate Coordinator, the Course Instructor, the Chairperson and the Dean of Graduate Studies. Faculty are free to accept or reject student independent study proposals. Note also that the graduate thesis may not be written in connection with an independent study course. The student should first consult with the Graduate Coordinator, find a suitable instructor, fill out the Application Form (see useful links below), obtain all required signatures, then submit the paperwork to the Office of Graduate Studies.

Pass/Fail Option

Required (core) courses may not be taken under the Pass/Fail Option and no more than one elective course on any planned program may be taken under the Pass/Fail Option. An elective course may be taken as part of the planned program only if written approval is placed in the student's permanent record by the Graduate Coordinator. Undergraduate courses listed on the planned program that students are required to take to strengthen their academic backgrounds may not be taken under the Pass/Fail Option. A course completed on a Pass/Fail basis while a student is not yet in a planned program may not be applied to a planned program at a later date. When a course is taken on a pass/fail basis, a final grade of "C" or higher will be reported as "S" (a grade of "S" does not affect student's GPA) while a final grade of "C-" or below will be reported as "F" (a grade of "F" will lower the student's GPA). Note that the instructor will not know who has chosen the Pass/Fail option prior to the submission of final grades.

Transfer Credits

As for any higher education degree, graduate programs at SCSU have a residency requirement. A student can transfer in at most 25% of the total credits required for the graduate degree (not including prerequisites) and the total cannot exceed 9 credits. In the Department of Mathematics, the following can be transferred:

- Master's Thesis track: 7.5 credits
- Comprehensive Exam track: 7.5 credits
- Special Project track: 9 credits

Transfer courses may NOT have counted toward any previous degree. Please remember that the clock on a planned program starts ticking at the time the first course applied to the degree (including transfer courses) was taken.

Course Revalidation

There are two instances under which course revalidation would apply: either a student's planned program expired and they wish to apply for readmission and want to count courses that would be more than 6 years old by the expiration date on their new program, or a student transfers from another school and wants to count courses that would be more than 6 years old by the expiration date on their planned program.
The guidelines for course revalidation are as follows:

- A maximum of 3 courses can be revalidated, but not more than ½ of the number of expired courses.
- Only courses in which the student earned a grade of "B" or better can be revalidated.
- The decision about whether undergraduate courses taken at SCSU can be revalidated is made on a case-by-case basis.
- The following graduate mathematics courses can be revalidated: MAT 526, 530, 541, 560, 574. No formal examination is required.
- The following mathematics education courses can be revalidated: MAT 508, 514, 518, 595. These courses must be revalidated by a project for which the student researches the developments that have taken place in the field since the time they first took the course. This process will be overseen by the instructor that the student had

for that course. If that instructor has left the university or was an adjunct, then the full-time faculty member that most recently taught the course will advise the student.

Extension of a Planned Program

As mentioned above, a planned program must be completed within a period of 6 years that begins with the semester in which the first graduate course is completed and applied to the program (transfer courses included). Graduate courses that are more than 6 years old do not count toward meeting degree requirements. An extension of the time to complete degree requirements may be granted if there are compelling extenuating circumstances. To obtain an extension, a student must petition the Graduate Coordinator prior to the expiration of the planned program. The Coordinator then forwards the petition to the Dean of the School of Graduate Studies with a recommendation. The student and Coordinator are then notified of the decision in writing. Extensions of more than one year are rarely granted.

Useful Links

The following links may prove useful in finding out about resources at your disposal and Graduate School policies that may affect your course of study.

A. Graduate School

1. Admissions: http://www.southernct.edu/grad/admissions/
2. Forms for
   - Graduate Application
   - Independent Study Form
   - Pass/Fail Option Form
   - Graduate Student Program Withdrawal Form

   http://www.southernct.edu/grad/currentstudents/forms/
3. Graduate Catalog: http://www.southernct.edu/grad/currentstudents/graduatecatalog/
4. Undergraduate Catalog: http://www.southernct.edu/undergraduatecatalog/
5. Thesis & Special Project Information: http://www.southernct.edu/grad/research/
6. Graduate Student Affairs Committee: http://www.southernct.edu/grad/gsac/

B. Mathematics Department

1. Department Homepage: http://www.southernct.edu/mathematics/
2. Course Rotation Schedule: http://www.southernct.edu/mathematics/courses/
3. Mathematics Faculty: http://www.southernct.edu/mathematics/aboutthefaculty/

C. Others

1. Buley Library: http://www.southernct.edu/academics/library/
2. Information and Technology: http://www.southernct.edu/oit/
3. Student Handbook: http://handbook.southernct.edu/
4. Financial Aid: http://www.southernct.edu/financialaid/graduatestudents/
5. Grade Appeal Procedure: http://www.southernct.edu/employment/uploads/textWidget/wysiwyg/documents/Grade_Change_Procedures_2010-2011.pdf

Students' Rights & Responsibilities

The Student Bill of Rights and the Student Code of Conduct are printed in the Student Handbook to help students understand their rights and responsibilities as members of the university and departmental communities. The Handbook is available online (see Useful Links above) or in print in the Office of Student Affairs. A link to the Grade Appeals Procedure also appears above in the Useful Links section.

All students are expected to maintain acceptable standards of conduct while on the university campus, on property controlled by the university, and in connection with off-campus university activities (such as teaching practicum). All members of our university community are expected to govern their social and academic interactions with tolerance and mutual respect. Students are expected to demonstrate personal attitudes and attributes conducive to productive performance, professional behavior, and integrity and honesty in written and verbal communications, documentations and coursework related to their program in Mathematics Education. Students may be dismissed from the Mathematics Education program for the following:

- Persistent unprofessional behavior in the classroom,
- Academic dishonesty ,
- Deficient academic performance,
- Other due and sufficient cause.

III. OVERVIEW OF THE CAPSTONE EXPERIENCES

1) THE THESIS

The thesis track is a 30-credit program. Typically, the student takes 21 core credits and 9 credits of elective courses, 6 of which consist of the thesis seminar MAT 590. (The additional 3-credit elective course is chosen in consultation with the Graduate Coordinator.)

The thesis is a capstone experience of the Master's degree candidate and offers evidence of the student's original research and the results of that research. In most disciplines, theses fall within the following categories: (1) investigative or experimental, (2) historical or descriptive, (3) interpretive, analytical or critical, (4) creative, and (5) qualitative. In Mathematics or Mathematics Education, theses tend to fall within categories (1)-(3) and must adopt the format and style typical to each of the two areas. A thesis in Mathematics exposes background knowledge followed by results of interest with their proofs and a conclusion that points to open questions. A thesis in Mathematics Education typically proceeds from an initial hypothesis, and the resulting document generally consists of an introduction to the research question, a review of the literature, an exposé of the research, an analysis and a conclusion. In both cases, a rigorous methodology is required and the final document is expected to contribute to the theoretical knowledge base of Mathematics Education or Mathematics. SCSU Thesis Requirements and Guidelines are available online at

www.SouthernCT.edu/grad/research

The student is responsible for strictly following the procedures and formatting guidelines found there and below.

Step by Step Procedure

Step 1: Eligibility. Before starting his/her Thesis, a student must be matriculated with a GPA of 3.0 or better and 15 credits of completed coursework toward the M.S. degree.

Step 2: Initial Proposal / Advisor. When the student is ready to begin the thesis, the student should approach the Graduate Coordinator with ideas for a proposal or specific areas of interest. The Graduate Coordinator will solicit possible advisors from among the mathematics faculty. The Graduate Coordinator will let the student know which faculty members have indicated interest in the topic. The student chooses the Thesis Advisor in consultation with the Graduate Coordinator. Note that the chosen Thesis Advisor should have an interest and/or expertise in the Thesis topic. (In addition, for any Thesis involving statistical analysis, the writer will be required to consult with one of the department's statisticians.)

Step 3: Thesis Committee. The Thesis Committee is formed, consisting of the Thesis Advisor, the Chairperson of the Mathematics Department, and a third reader (selected in consultation with the Thesis Advisor and the Chairperson). Note that the third reader may come from outside the Mathematics Department, if appropriate. Should the Chairperson be the Thesis Advisor, the Graduate Coordinator will then serve as a third reader. Preferably, at least one of the readers (besides the Advisor) should have expertise in the field of research. All three readers must accept the thesis as quality work.

Step 4: Final Proposal. The student puts the proposal in its final form. The requirements and guidelines for the Thesis proposal can be found on the School of Graduate Studies website at www.SouthernCT.edu/grad/research. If IRB review is required for the project, approval must be obtained at this time before work on the Thesis begins. The Thesis Committee should be asked for feedback on the proposal before approval. Once the proposal is in its final form and IRB paperwork is in order, the **Thesis Proposal Signature Sheet** is to be turned in to the School of Graduate Studies. The form is available at www.SouthernCT.edu/grad/research .

Step 5: MAT 590. The student must register for the Thesis Seminar MAT 590 during the semester that follows the approval of the Thesis proposal. The student should speak to the Chairperson about the process of registering for a section of MAT 590.

Notes. a) Deadlines: The student must submit and have approved a Thesis proposal no later than one calendar year before the graduation date or the program's expiration date, whichever comes first.

b) Style Format: The Mathematics Department requires that students use the Chicago Manual of Style for formatting citations. This is the style that is currently required by the NCTM (National Council for Teachers of Mathematics).

c) Dean's Approval: Technically, a student should not start work on the Thesis before receiving a copy of the Signature Sheet from the School of Graduate Studies.

Step 6: The Thesis Format. The reputation and quality of the Mathematics Department's graduate program are measured in part by the quality of the work done by graduate students. All theses from the Mathematics Department must adhere to basic Graduate School *Thesis Guidelines*. The theses are kept in the Mathematics Department library and the School of Graduate Studies publishes them through ProQuest Information and Learning. They are also archived in the University Library. A Thesis must be prepared with care for appearance, for consistency of terminology, and for correctness of mathematics, citations, grammar and spelling. The student and the Thesis Committee are responsible for ensuring that the content of the Thesis is of high quality.

Though the meaning of each of the following items may depend on the focus of the work, a Thesis in Mathematics Education or Mathematics is expected to contain the following elements:

a. Abstract
b. Table of Contents
c. Introduction
d. Literature Review
e. Methodology
f. Results/Analysis
g. Conclusion
h. References
i. Appendices (when needed)

The student submits the Thesis electronically to the Committee. After feedback is taken into account, the Committee approves the Thesis and they sign off on the cover page of the Thesis.

Notes. a) Timeline for Completion of the Thesis: The Thesis must be submitted to the Advisor for review by the end of the semester prior to the projected graduation semester. The completed Thesis must be submitted to the full Committee by the end of the first week of the graduation semester (or by the last week of spring semester classes for an August graduation). The Committee should complete their review of the work no later than three weeks after submission in order to allow for possible major content or structural revisions. The student should expect to receive feedback during the Committee review process and should be prepared to do revisions of the Thesis in a timely manner. A second round of minor revisions is normal and expected. Please be aware that the deadline for a thesis to be submitted to the Graduate School is generally 6-8 weeks before the end of the semester. Please check with the Graduate School for specifics.

b) Public Presentation of the Thesis. The results will be presented at a Departmental Seminar to which alumni and current students and faculty would be invited, or at a meeting of the Math Club. The presentation can be scheduled any time after the Thesis Committee approves the work. This presentation is not a defense; students do not pass or fail the presentation. However, the committee will not formally sign off on the thesis until after the presentation is completed. (For an August graduation, special arrangements for a late spring presentation can be made.)

Though not required, the student is encouraged to (1) present his/her Thesis at an ATOMIC, MAA, or NCTM Regional conference, and (2) publish his/her findings in the Connecticut Math Journal or some other appropriate peer-reviewed journal.

Step 7: Graduate School Review. The Thesis is submitted to the School of Graduate Studies. The Graduate School will examine the format of the Thesis to see that the 'Mechanics of Presentation' specified in the *School of Graduate Studies Guide to Formatting Your Thesis, Special Project Proposal, or Dissertation* have been met.

2) THE COMPREHENSIVE EXAM

The comprehensive examination track is a 30-credit program. Typically, the student takes 21 core credits and 9 credits of elective courses. The Graduate Coordinator must approve of all elective courses. The comprehensive exam consists of oral examination in the student's choice of three of the following five areas:

- Algebra (MAT 574)
- Analysis (MAT 541)
- Geometry (MAT 560)
- Mathematics Education (MAT 508, 514, and 595)
- Probability and Statistics (MAT 526)

Note that according to the graduate catalog, once a student has taken a first component of the comprehensive examination, he/she can no longer switch to a different capstone experience.

Eligibility/Timeline

According to the graduate catalog, the comprehensive examination in the major field is set by the graduate program and may be scheduled any time after at least two-thirds of the planned program has been completed. In the Mathematics Department, this means that a matriculated student with a GPA of 3.0 or better can take the comprehensive exam after completion of 20 credits. Students are strongly encouraged to take the exams as soon as possible after finishing the corresponding courses. PLEASE NOTE THE FOLLOWING IMPORTANT GUIDELINES:

- The student cannot be examined in an area in which the corresponding course was completed more than three years prior to the exam.
- The student must take the exam within two years of completing the last of the three courses, or areas, in which he/she is to be examined.
- The student must complete the comprehensive examination within five years of admission into the program.
- All three components must be taken within a one-month period.

The student schedules the times for the examinations in consultation with the Examination Committee and the Graduate Coordinator.

Examination Committee

The lead examiner in a topic area is typically the faculty member who taught the course, although in some cases (retirement, for instance), the student may ask another faculty member who has recently taught the same course. If two areas are covered by the same faculty member, a third committee member will be selected by the Graduate Coordinator from among those full-time members of the department that have taught the appropriate course, if possible. In the Mathematics Education area, the student may ask any of the faculty members who taught one of MAT 508, 514, or 595. The Graduate Coordinator is also in attendance.

Format

Typically, each component or area of the examination will last approximately one hour. Extended time may be needed in some cases in order for the committee to evaluate the student's knowledge. There is a maximum time limit of 3 hours of examination in a single day. If this time limit is exceeded, any further examination(s) should be postponed to another date.

The lead examiner in a given area is responsible for conducting the examination session for that particular area. Occasionally, other committee members may ask questions as well.

As the name indicates, a comprehensive oral exam potentially covers the entirety of topics from the area stipulated in the departmental course outline. Several weeks prior to the exam, the student should contact the lead examiner in the area for generic guidelines regarding a productive approach to studying for that exam. Students should be able to state and discuss definitions, facts, theorems and proofs that pertain to the area being examined.

Successful Completion

According to the university graduate catalog, "a candidate who fails the comprehensive examination may petition the Graduate Coordinator for a second examination if there are extenuating circumstances. If the petition is not granted, the student will be dismissed from the program. Failure in the second examination results in dismissal from the program and exclusion from further candidacy."

In the Mathematics Department, students must pass each of the three components on the exam, i.e. all three areas in which the student is being examined. Failure in at least 2 of the 3 components results in dismissal from the program. Students who pass 2 of the 3 components can be retested on the third component within six months of the first attempt.

All three members of the committee should be present at each component of the exam. All three committee members shall vote on a pass/fail basis for each of the three components of the exam. In order for the student to receive a pass for an area, two of the three committee members, including the lead examiner for that area, must vote for a "pass".

The Graduate Coordinator will prepare a signature sheet. After the student passes all three components of the examination, the Examination Committee should sign the signature sheet and

give a copy to the student and to the Graduate Coordinator. The Graduate Coordinator is responsible for forwarding a memo to the Registrar's Office indicating that the student has successfully completed the comprehensive examination.

Written Examinations

Written examinations may NOT be substituted for any comprehensive oral examinations in any of the Mathematics topic areas. However, for the Mathematics Education area, students could be asked to give an oral presentation in response to questions formulated by the lead examiner for Mathematics Education and given to the student in advance. The lead examiner shall develop the list of topic areas and questions in consultation with the other faculty members that taught the appropriate courses (MAT 508, 514, and 595).

3) THE SPECIAL PROJECT

The special project track is a 36-credit program. Typically, the student takes 21 core credits and 15 credits of elective courses. The Graduate Coordinator must approve of all elective courses.

The Special Project is a capstone experience of the Master's degree candidate and provides an opportunity for graduate students to complete an academically rigorous, professional, and deliverable product that contributes in some meaningful way to the discipline of Mathematics or to the Mathematics Education community. The project should reflect an understanding of knowledge related to Mathematics or Mathematics Education and an ability to apply this knowledge. The special project involves the practical application of mathematical skills and the culmination and synthesis of knowledge received from a student's planned program of study. In the case of curriculum activities, the activities should be field-tested and results of the tests should be reported as part of the project. The difference between such a project and a thesis is that the rigor in the scientific method of a thesis is not required. Final submission of the special project to the department includes a written report describing the process and results, and typically is accompanied by visual, electronic, or media documentation of the project. SCSU Special Project Requirements and Guidelines are available online at

www.SouthernCT.edu/grad/research

The student is responsible for strictly following the procedures and formatting guidelines found there and below.

Step by Step Procedure

Step 1: Eligibility. Before starting his/her Special Project, a student must be matriculated with a GPA of 3.0 or better and 15 credits of completed coursework toward the M.S. degree.

Step 2: Initial Proposal / Advisor. When the student is ready to begin the Special Project, the student should approach the Graduate Coordinator with ideas for a proposal or specific areas of interest. The Graduate Coordinator will solicit possible advisors from among the mathematics faculty. The Graduate Coordinator will let the student know which faculty members have

indicated interest in the topic. The student chooses the Advisor in consultation with the Graduate Coordinator. The Advisor should have experience in the topic of the Special Project.

Step 3: Special Project Committee. The Special Project Committee is formed, consisting of the Special Project Advisor, the Chairperson of the Mathematics Department, and a third reader (selected in consultation with the Special Project Advisor and the Chairperson). Should the Chairperson be the Special Project Advisor, the Graduate Coordinator will then serve as a third reader. Note that the third reader may come from outside the Mathematics Department, if appropriate.

Step 4: Final Proposal. The student puts the proposal in its final form (including references, and relevance vis-à-vis NCTM standards if applicable). The proposal should clearly stipulate what the final product will be. If IRB review is required for the project, approval must be obtained at this time before the project begins. The Special Project Committee should be asked for feedback on the proposal before approval. Once the proposal is in its final form and IRB paperwork is in order, the **Special Project Proposal Signature Sheet** is to be turned in to the School of Graduate Studies. The form is available at www.SouthernCT.edu/grad/research .

Notes. a) Deadlines: Students who anticipate a May or August graduation should plan to submit their Special Project proposal to the Committee **no later than October 15th** of that academic year. Students who anticipate a January graduation should plan to submit their Special Project proposal to the Committee **no later than March 15th** of the preceding academic year.

b) Style Format: The Mathematics Department requires that students use the Chicago Manual of Style for formatting citations. This is the style that is currently required by the NCTM (National Council for Teachers of Mathematics).

c) Dean's Approval: Technically, a student should not start work on the project before receiving a copy of the Signature Sheet from the School of Graduate Studies.

Step 5: The Special Project Final Report and Product. The reputation and quality of the Mathematics Department's graduate program are measured in part by the quality of the work done by graduate students. The Special Projects are kept in the Mathematics Department library so that current and future graduate students can access them. For this reason, Special Projects must be prepared with care for appearance, for consistency of terminology, and for correctness of citations, grammar, spelling, and mathematics. The student and the Special Project Committee are responsible for ensuring that the content of the Special Project is of high quality.

The Special Project Final Report must contain the following items.

a. Introduction and overview
b. Significance and Relevance
   This section should minimally contain a rationale for the project.
c. Brief Review of Literature
   This section should consist of a review of the mathematics education literature that supports the choice of the project. If the product of the special project is curriculum-

related, the current state and national standards for the topic area must be reviewed in this section.

d. Research Methods or Plans for Conducting the Project
   This section should describe how the product will be field-tested and how success will be measured.
e. Project Results
   Project results could be based upon statistical results, analysis of student work, and/or feedback from other teachers that have field-tested the product.
f. Conclusions and Recommendations
   This section should minimally include a student reflection on the effectiveness of the product and recommendations for improving the product.
g. References
h. Appendices

The student submits the Special Project Final Report and Product electronically to the Committee. After feedback is taken into account, the Committee approves the project and the **Special Project Completion Signature Sheet** is turned in to the School of Graduate Studies. The form is available at www.SouthernCT.edu/grad/research . The approved Product and Final Report will be stored in the Mathematics Department Library in electronic form and archived in the University Library.

Notes. a) Timeline for Completion of the Special Project: The Product of the Special Project must be submitted to the advisor for review by the end of the semester prior to the projected graduation semester. The completed Special Project Final Report must be submitted to the Special Project Committee two months prior to the end of the graduation semester. The Committee should complete their review of the completed project and the Final Report within two weeks of submission. The student should expect to receive feedback during the Committee review process and should be prepared to do revisions of the project in a timely manner.

b) Public Presentation of the Special Project. The results should be presented at a Departmental Seminar to which alumni and current students and faculty would be invited. The presentation can be scheduled any time after the Special Project Committee approves the Special Project Final Report. This presentation is not a defense; students do not pass or fail the presentation. However, the committee should not formally sign off on the Special Project until after the presentation is completed. (For an August graduation, special arrangements for a late spring presentation can be made.)

The student is encouraged to present his/her Special Project at an ATOMIC, MAA, or NCTM Regional conference.

Note: Our thanks to Dr. Therese Bennett for her contributions to this document.