

Program Approval

Form

For approval of new programs and deletions or modifications to an existing program.

College/School: College of Science Department: Mathematical Sciences Submitted by: Walter Morris Ext: 3.1481 Email: wmoris@gmu.edu Effective Term: Fall 2013 Please note: For students to be admitted to a new degree, minor, certificate or concentration, the program must be fully approved, entered into Banner, and published in the University Catalog. Justification: (attach separate document if necessary) To clarify the requirements of the MS in Mathematics to be more clear and be a subset of the PhD program if students wish to pursue that route after the MS. Program Title: (Required) Title must identify subject matter. Do not include name of college/school/dept. MS in Mathematics Concentration(s): MATH 621 Admissions Standards / Application Requirements: MATH 621 Matter 1872 MATH 675 Six approved courses (four in MATH) Research and Creative Component Matter 451 Six approved courses (four in MATH) Research and Creative Component Part-time basis Applications Part-time basis Application Date Provesta Office Consult University Catalog in models, and Creative Component Provesta Office Matth 621	Action Requested: Type (Check Create New (SCHEV approval required except for minors) B.A. Inactivate Existing M.A. x Modify Existing (check all that apply) Ph.D. Title (SCHEV approval required except for minors) Undergration Concentration (Choose one): Add Delete Modify x Degree Requirements Other: Other:									Minor M.Ed.	
Submitted by: Walter Morris Ext: 3.1481 Email: wmorris@gmu.edu Effective Term: Fall 2013 Please note: For students to be admitted to a new degree, minor, certificate or concentration, the program must be fully approved, entered into Banner, and published in the University Catalog. Justification: (attach separate document if necessary)	College/School:		Department:		Mathematical Sciences						
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For Graduate Programs Only

Graduate Council Member

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Motion. Change the catalog copy under Degree Requirements for MS in Mathematics, to reflect addition of Math 685 (Numerical Methods) as an optional core course. MS students are now required to take Math 675 (Linear Analysis) and any three of Math 621 (Algebra I), Math 631 (Topology I), Math 677 (ODE), and Math 685 (Numerical Methods) as their core course requirement. They will still be required to take and pass preliminary exams in three of whichever four core courses they choose to take.

This will require also a change to the MS degree requirements so that the MS requirements are a subset of the PhD requirements. In particular we propose eliminating the emphasis in computational and applied mathematics.

Justification:

The changes to the MS program are done so that the MS degree requirements are a subset of the PhD requirements. This eliminates the possibility that a student could fulfill all requirements for the PhD but not have fulfilled the requirements for the MS degree. The new requirements for the MS allow a student interested in applied mathematics to take courses almost identical to those currently listed for the applied and computational track in the normal course of getting the MS degree. Therefore it seems redundant to have such a concentration explicitly offered.

Modification of catalog copy for MS degree

Old catalog copy:

Degree Requirements

Standard Program

In addition to fulfilling degree requirements for graduate study, students must complete 30 credits distributed as follows:

- MATH 675 Linear Analysis I Credits: 3
- MATH 621 Algebra I Credits: 3
- MATH 631 Topology I: Topology of Metric Spaces Credits: 3
- MATH 677 Ordinary Differential Equations Credits: 3
- MATH 685 Numerical Methods Credits: 3
- Six approved graduate courses (18 credits), at least four of which are MATH. All six courses must be approved by the student's advisor. Courses not listed as MATH courses must be approved by the Graduate Committee. Different rules apply if the student wishes to count graduate actuarial courses toward his or her degree (see below).
- Research and creative component (6 credits; see below)

Total: 30 credits

Emphasis in Computational and Applied Mathematics

The emphasis in computational and applied mathematics provides students with the analytical skills and background in computational techniques most relevant to the needs of business, industry, and government. The large number of high-technology firms, telecommunications firms, and government laboratories in the Washington, D.C., metropolitan area gives students an opportunity to gain practical experience and secure employment after graduation.

In addition to fulfilling degree requirements for graduate study, students must complete 30 credits distributed as follows:

- MATH 621 Algebra I Credits: 3
- MATH 675 Linear Analysis I Credits: 3

- MATH 677 Ordinary Differential Equations Credits: 3
- or

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- MATH 678 Partial Differential Equations Credits: 3
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- MATH 685 Numerical Analysis Credits: 3
- Four approved graduate courses (12 credits), at least two of which are MATH courses. All four courses must be approved by the student's advisor. Courses not listed as MATH courses must be approved by the Graduate Committee.
- Research/creative component (6 credits; see below)

New catalog copy: Changes in bold.

Degree Requirements

In addition to fulfilling degree requirements for graduate study, students must complete 30 credits distributed as follows:

• MATH 675 - Linear Analysis I Credits: 3

Three courses chosen from the following:

- MATH 621 Algebra I Credits: 3
- MATH 631 Topology I: Topology of Metric Spaces Credits: 3
- MATH 677 Ordinary Differential Equations Credits: 3
- MATH 685 Numerical Methods Credits: 3
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- Four approved graduate courses (12 credits), at least two of which are MATH. All four courses must be approved by the student's advisor. Courses not listed as MATH courses must be approved by the Graduate Committee. Different rules apply if the student wishes to count graduate actuarial courses toward his or her degree (see below).
- Research and creative component (6 credits; see below)

Total: 30 credits