



# Program Approval Form

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

**Action Requested:**

Create New (SCHEV approval required except for minors)  
 Inactivate Existing  
 Modify Existing (check all that apply)  
 Title (SCHEV approval required except for minors)  
 Concentration (Choose one):  Add  Delete  Modify  
 Degree Requirements  
 Admission Standards/ Application Requirements  
 Other Changes: \_\_\_\_\_

**Type (Check one):**

B.A.  B.S.  Minor  
 M.A.  M.S.  M.Ed.  
 Ph.D.  
 Undergraduate Certificate\*  
 Graduate Certificate\*  
 Other: \_\_\_\_\_

**College/School:**  **Department:**   
**Submitted by:**  **Ext:**  **Email:**

**Effective Term:**   **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.

	Existing	New/Modified
<b>Program Title:</b> (Required) <small>Title must identify subject matter. Do not include name of college/school/dept.</small>	MS in Mathematics	
<b>Concentration(s):</b>		
<b>Admissions Standards / Application Requirements:</b> <small>(Required only if different from those listed in the University Catalog)</small>		
<b>Degree Requirements:</b> <small>Consult University Catalog for models, attach separate document if necessary using track changes for modifications</small>	MATH 621 MATH 675 Six approved courses (four in MATH) Research and Creative Component	MATH 675 Three chosen from: MATH 621, 631, 677, 685 Four approved courses (two in MATH) Research and Creative Component
<b>Courses offered via distance:</b> <small>(if applicable)</small>		
<b>TOTAL CREDITS REQUIRED:</b>		

\*For Certificates Only: Indicate whether students are able to pursue on a  Full-time basis  Part-time basis

**Approval Signatures**

Department	Date	College/School	Date	Provost's Office	Date
<i>Interdisciplinary Council Use Only</i>					

If this program may impact another unit or is in collaboration with another unit at Mason, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

**For Graduate Programs Only**

Graduate Council Member	Provost Office	Graduate Council Approval Date
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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

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- MATH 677 - Ordinary Differential Equations Credits: 3
- or
- 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**