Program Change Request

Date Submitted: 01/09/24 3:18 pm

Viewing: **SC-MS-MATH : Mathematics, MS**

Last approved: 02/15/19 3:36 pm

Last edit: 01/09/24 3:18 pm

Changes proposed by: jbazaz

Catalog Pages
Using this Program
  [Mathematics, MS](#)

Are you completing this form on someone else's behalf?

Yes

Requestor:

Name	Extension	Email
Rebecca Goldin	1480	rgoldin

Effective Catalog: 2024-2025

Program Level: Graduate

Program Type: Master's

Degree Type: Master of Science

Title: Mathematics, MS

Banner Title: Mathematics, MS

In Workflow

1. **MATH Chair**
2. **SC Curriculum Committee**
3. SC Assistant Dean
4. Assoc Provost-Graduate
5. Registrar-Programs

Approval Path

1. 01/09/24 4:31 pm Maria Emelianenko (memelian): Approved for MATH Chair

History

1. Nov 10, 2017 by clmig-jwehrheim
2. Mar 8, 2018 by pchampan
3. Feb 15, 2019 by pxiong

Registrar/OAPI Use Only – SCHEV Status   Approved

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science

Department / Academic Unit: Mathematical Sciences

Jointly Owned Program?   No

Justification

What: The Math Department wants to change the requirement of MS 799 from 6 credits to 3 credits.

Why: We have had instances of students who can complete the thesis requirement in one semester (3 credits) of MATH 799, and would like this flexibility for the students. We do want to recommend to students to take a new course, MATH 798, followed by 3 credits of MATH 799 if they need 2 semesters to write a thesis. This will continue to be most students.

What: Listing example courses for students to choose from.
Why: Easing student advising.

Total Credits Required: Total credits: 30

Registrar's Office Use Only - Program Code:

SC-MS-MATH

Registrar/IRR Use Only – Program CIP Code

**Admission
Requirements:**

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies.

To apply for this program, please complete the George Mason University Admissions Application.

Applicants interested in this program must submit three letters of recommendation. GRE scores are not required.

Students must have taken an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), an abstract algebra course (equivalent to MATH 321 Abstract Algebra) and an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra). Students should have some computer knowledge.

**Program-Specific
Policies:**

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies.

MATH 500 through MATH 614 cannot be used for credit, with the exception of MATH 555 Actuarial Modeling I and MATH 556 Actuarial Modeling II.

Degree Requirements:

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Coursework

Required Courses		
MATH 675	Linear Analysis	3
Coursework Options		
Select three from the following:		9
MATH 621	Algebra I	
MATH 631	Topology I: Topology of Metric Spaces	
MATH 677	Ordinary Differential Equations	
MATH 685	Numerical Analysis	
Additional Approved Coursework		12
~~Select four approved graduate courses, at least two of which are MATH courses. 1~~		~~12~~
Select 12 credits of approved graduate courses, at least two of which are MATH courses. Suggested courses include: 1		
MATH 625	Numerical Linear Algebra	
MATH 629	Topics in Algebra	
MATH 641	Combinatorics and Graph Theory	
MATH 661	Complex Analysis I	
MATH 664	Linear Algebra with Data Applications	
MATH 674	Stochastic Differential Equations	

MATH 678	Partial Differential Equations
MATH 680	Industrial Mathematics
MATH 686	Numerical Solutions of Differential Equations
MATH 722	Algebraic Topology
MATH 723	Combinatorial Structures
MATH 724	Commutative Algebra
MATH 725	Algebraic Geometry
MATH 741	Lie Groups
MATH 740	Differential Topology
MATH 776	Measure and Integration
MATH 781	Advanced Methods in Applied Mathematics
MATH 784	Nonlinear Functional Analysis

Total Credits   24

1

- All twelve credits must be approved by the student's advisor. Courses not listed as MATH courses must be approved by the graduate committee.
- MATH 798 Directed Reading or Research may count toward fulfilling this requirement.
- Different rules apply if the student wishes to count graduate actuarial courses toward their degree (consult the graduate coordinator).

Research and Creative Component

A student may fulfill the research and creative component in one of three ways: Thesis Option, Paper Presentation Option, or Preliminary Exams for the PhD.

Thesis Option

~~Select one of the Research and Creative Component options outlined below6~~

~~Total Credits   0~~

~~Thesis Option~~

In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences, one member may be from a related field.

The student completes a thesis under the direction of the committee chair. Students must register for 3 credits of MATH 799 MS Thesis to write a thesis. Students are recommended to take 3 credits of MATH 798 Directed Reading or Research before taking MATH 799 MS Thesis. The thesis work is ~~typically~~ completed while students are registered enrolled in ~~for 6 credits of~~ MATH 799 MS Thesis. A thesis proposal and thesis are submitted in accordance with AP.6 Graduate Policies. The student must give an oral defense of the thesis to the committee and the George Mason University community at large. Students are expected to respond to questions on the thesis and related material. The committee determines whether the defense is satisfactory.

~~Thesis Option   6~~

Required

| MATH 799 | MS Thesis | 3-6 |

Optional

Select 0-3 credits of advisor-approved electives in order to meet the 6 credit requirement. 10-3

Total Credits   6

1

MATH 798 Directed Reading or Research may count toward fulfilling this requirement. Please note that no more than 9 total credits of MATH 798 Directed Reading or Research and MATH 799 MS Thesis may be applied to this program.

Paper Presentation Option

In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences, one member may be from a related field. The student gives an oral presentation of a paper (or series of papers or book chapter) chosen in consultation with the chair of the committee and approved by the full committee. The chosen material must be distinct from work completed in fulfillment of course requirements. The oral presentation is given to the committee and the Mason community at large. Students are expected to respond to questions on the paper and related material. The committee determines whether the defense is satisfactory.

~~Select 6 additional credits of electives~~   ~~6~~

Select 6 credits of electives in consultation with an advisor. 16

Total Credits   6

1

MATH 798 Directed Reading or Research may count toward fulfilling this requirement.

Preliminary Exams for the PhD

The research and creative component can also be fulfilled by passing three preliminary written examinations, as required for the Mathematics, PhD degree.

Select 6 credits of electives in consultation with an advisor. 16

Total Credits   6

1

MATH 798 Directed Reading or Research may count toward fulfilling this requirement.

**Retroactive
Requirements
Updates:**

Plan of Study:

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

**Courses offered via
distance (if
applicable):**

| **What is the primary delivery format for the program?** | Face-to-Face Only |

Does any portion of this program occur off-campus?

No

Are you working with a vendor / other collaborators to offer your program?

No

**Related
Departments**

**Could this program prepare students for any type of professional licensure, in
Virginia or elsewhere?**

No

Are you adding or removing a licensure component?

No

Additional SCHEV & SACSCOC Information

**Is this change a simple retitling of an existing program, with no other changes, to any existing program content,
curriculum requirements, etc?**

No

**Does this change represent a repackaging of content in an existing approved degree/certificate program at the
same instructional level (i.e., baccalaureate, master's, or doctoral)?**

No

**Percentage of total credits containing new course content. ("New course content" is defined by SACSCOC as
content that is not currently included in an existing approved degree/certificate program at the same instructiona
level. Do not exclude gen ed credits in calculations for undergraduate programs.)**

0%-24%

Does this change include the addition of a distance education or face-to-face method of delivery for this program?

No

Does this change include the addition of a course/credit-based competency-based education delivery option?

No

Will any additional equipment/facilities be needed?

No

Will any additional faculty be required?

No

Will any additional financial resources be needed?

No

Additional library/learning resources needed?

No

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program?   No

Does this program cover material which crosses into another department?

No

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Key: 306