Program Change Request

Date Submitted: 03/05/24 12:29 pm

Viewing: SC-PHD-MATH : Mathematics, PhD

Last approved: 03/05/24 9:48 am

Last edit: 03/05/24 12:29 pm

Changes proposed by: jbazaz

Catalog Pages Using this Program

Mathematics, PhD

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

No

Effective Catalog:	2024-2025
Program Level:	Graduate
Program Type:	Doctoral
Degree Type:	Doctor of Philosophy
Title:	Mathematics, PhD
Banner Title:	Mathematics, PhD
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):	

In Workflow

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

Approval Path

1. 03/20/24 11:48 am Maria Emelianenko (memelian): Approved for MATH Chair

History

1. Nov 10, 2017 by clmig-jwehrheim
2. Feb 7, 2018 by rzachari
3. Jul 24, 2020 by Jennifer Bazaz Gettys (jbazaz)
4. Feb 23, 2021 by jriemen
5. Mar 5, 2021 by jriemen
6. May 8, 2023 by Tory Sarro (vsarro)
7. Mar 5, 2024 by Jennifer Bazaz Gettys (jbazaz)

Registrar/IRR Use Only – Concentration CIP Code	
College/School:	College of Science
Department / Academic Unit:	Mathematical Sciences
Jointly Owned Program?	No

Justification

What: Referring applicants to central admissions language and removing extraneous wording.

Why: To make the program more adaptable to changes in university policies.

Total Credits Required:	Total credits: 72

Registrar's Office Use Only - Program Code:

SC-PHD-MATH

Registrar/IRR Use Only – Program CIP Code	
Admission Requirements:	

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies section of this catalog. International students and students having earned international degrees should also refer to Admission of International Students for additional requirements.

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

It is expected that all applicants have a recent bachelor's degree in mathematics or an equivalent amount of undergraduate mathematics preparation ~~preparation,~~ with a GPA of at least 3.00 in their last 60 credits of study from an institution of higher education accredited by a Mason-recognized U.S. ~~study.~~ institutional accrediting agency or international equivalent. Students ~~Students~~ without this background who have had an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra), ~~MATH 322 Advanced Linear Algebra),~~ an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), ~~MATH 315 Advanced Calculus I),~~ and an upper-division course in group theory (equivalent to MATH 321 Abstract Algebra) ~~MATH 321 Abstract Algebra)~~ are encouraged to apply to the Mathematics, MS. Such students may subsequently apply to the PhD when all background issues have been addressed.

It is recommended that all applicants have some familiarity with mathematical software.

Application Requirements

To apply for this program, ~~apply,~~ prospective students should submit the George ~~provide the completed George~~ Mason University Admissions Application and its required supplemental documentation, ~~, two copies of official transcripts from each college and graduate institution attended, three letters of recommendation, and~~ a goals statement, and three letters of recommendation.
~~statement.~~
The GRE is not required for admission into this program.
~~GRE scores are notrequired.TOEFL scores are required for all international applicants; find additional information in the "Admission of International Students" section of thiscatalog.~~

Program-Specific Policies:

Policies

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

Transferring Previous Graduate Credit into this Program

Previously earned and relevant graduate credits may be eligible for transfer into this program; details can be found in the Credit by Exam or Transfer section of this catalog.
~~Reduction of Credits For students entering the doctoral program with a master's degree in a related field from an institution of higher education accredited by a Mason-recognizedU.S.institutional accrediting agency or international equivalent, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean for studentaffairs.See "AP.6.5.2 Reduction of Credits" for moreinformation.Transfer of Credit Graduate mathematics courses taken elsewhere without being applied to degree conferral may be counted toward the degree as transfercredit.See "AP 6.5.3 Transfer of Credit" for additionalinformation.~~

Degree Requirements:

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

Core Courses

Students must earn a grade of 'B' or better in each core course.

MATH 675	Linear Analysis	3
Select nine credits 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	
Seminar		

Students must register for a 1 credit seminar each semester until they advance to candidacy, or have acquired at least 4 seminar credits 1

MATH 795	Graduate Seminar	4
Total Credits		16

1

Students must take at least 4 credits of seminar MATH 795 Graduate Seminar and may take an additional 2 credits as electives.

Preliminary Written Exam

Students are required to pass three preliminary written exams and complete four core courses by the end of their second year. Preliminary exams are offered twice a year and students may take each exam up to three times.

Dissertation Advisor and Examination Committee

After passing the preliminary written exams, the student chooses a dissertation advisor and a three person examination committee. In consultation with the advisor and committee, the student chooses a major and a minor area of study (the major and minor areas are presumed to be in two different branches of mathematics).

Electives

Students complete 32-44 credits of approved MATH electives	132-44
Total Credits	32-44

1

Courses not designated as MATH courses must be approved by the graduate committee.
Classes at the 500 level, MATH 600 Special Topics in Mathematics - MATH 614 Rational Numbers and Proportional Reasoning for K-8 Teachers, and actuarial classes MATH 653 Construction and Evaluation of Actuarial Models I, MATH 654 Construction and Evaluation of Actuarial Models II and MATH 655 Pension Valuation cannot be used for credit.

Qualifying Examinations

Students are required to take a qualifying exam after passing the preliminary written exams. The qualifying exam may have oral and written components. In consultation with the advisor and committee, the student chooses a major and a minor area of study (the major and minor areas are presumed to be in two different branches of mathematics). The qualifying exam typically covers the equivalent of approximately four courses of material from the major area and three courses from the minor area.

Dissertation Proposal and Advancement to Candidacy

After passing the qualifying exam, each doctoral student prepares a written dissertation proposal while taking MATH 998 Doctoral Dissertation Proposal. The proposal must be approved by the dissertation committee, which consists of the three qualifying exam committee members, plus a fourth member from outside the Department of Mathematical Sciences. After successfully completing this requirement, the student advances to doctoral candidacy.

Dissertation Research

Select 12-24 credits from the following:	12-24
MATH 998 Doctoral Dissertation Proposal	
MATH 999 Doctoral Dissertation	
Total Credits	12-24

Doctoral Dissertation

After advancing to candidacy, the student will work on a doctoral dissertation while enrolled in MATH 999 Doctoral Dissertation. The dissertation is a written piece of original mathematics that demonstrates a doctoral candidate's mastery of the subject matter. A student is expected to produce new and original research worthy of publication in a peer-reviewed journal. After the dissertation is completed, the committee will review the dissertation and examine the student in a public oral thesis defense.

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: 307