Program Change Request

Date Submitted: 02/24/20 2:18 pm

Viewing: SC-PHD-MATH : Mathematics, PhD

Last approved: 02/07/18 11:03 am

Last edit: 02/24/20 2:18 pm

Changes proposed by: jbazaz

Catalog Pages Using this Program Mathematics, PhD

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

Yes

Requestor:

In Workflow

1. **MATH Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. SC CAT Editor
5. Assoc Provost-Graduate
6. Registrar-Programs: Duration
7. Registrar-Programs

Approval Path

1. 02/25/20 11:24 am David Walnut (dwalnut): Approved for MATH Chair

History

1. Nov 10, 2017 by clmig-jwehrheim
2. Feb 7, 2018 by Rebekah Zacharias (rzachari)

Name	Extension	Email
Maria Emelianenko	9688	memelian

Effective Catalog: 2020-2021

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	
Concentration(s):	
Registrar/IRR Use Only – Concentration CIP Code	
College/School:	College of Science
Department / Academic Unit:	Mathematical Sciences
Jointly Owned Program?	No
Academic Themes:	
Justification	Clarifying requirements for the Preliminary Written Exam to mirror current practices. Other editorial changes.

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.
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, with a GPA of at least 3.00 in their last 60 credits of study. Students without this background who have had an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra), an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), and an upper-division course in group theory

(equivalent to 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, prospective students should provide the completed George Mason University Admissions Application, two copies of official transcripts from each college and graduate institution attended, three letters of recommendation, and a goals statement. GRE scores are recommended but not required.
TOEFL scores are required for all international applicants; find additional information in the Admission of International Students section of this catalog.

Program-Specific Policies:

Policies

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

Reduction of Credits

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, 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 student affairs. See AP.6.5.2 Reduction of Credits for more information.

Transfer of Credit

Graduate mathematics courses taken elsewhere without being applied to degree conferral may be counted toward the degree as transfer credit. See AP 6.5.3 Transfer of Credit for additional information.

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 that counts toward the core requirement.

Course List

Code	Title	Credits
MATH 675	Linear Analysis	3
Select any three of the following:		9
MATH 621	Algebra I	
MATH 631	Topology I: Topology of Metric Spaces	
MATH 677	Ordinary Differential Equations	
MATH 685	Numerical Analysis	
Total Credits		12

Preliminary Written Exam

Students are required to pass three preliminary written exams **and complete four** ~~after completing the~~ core **courses** ~~courses, usually~~ by the end of their second year. ~~These exams are based on material presented in three of the five core courses (the student may choose which topics toexclude).~~**Preliminary** ~~These~~ exams are offered twice a year and students may take each exam up to three **times.**
~~times.~~

~~**A grade of "pass" on three preliminary written exams is sufficient to satisfy the creative component of the master's degree inmathematics.**~~

Dissertation Advisor and Examination Committee

After passing the preliminary written **exams,** ~~exam,~~ 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).

Seminar

Course List

Code	Title	Credits
Students must register for a 1 credit seminar each semester until they advance to candidacy or have acquired at least 6 credits [1]		6
MATH 795	Graduate Seminar	
Total Credits		9

1 A student entering without a master's degree in mathematics should expect to take a total of 6 to 9 credits of MATH 795 Graduate Seminar.

Electives

Course List

Code	Title	Credits
Students complete 27-42 credits of approved MATH electives [1]		27-42
Total Credits		27-42

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.** ~~exam.~~ The qualifying exam **may** ~~will~~ 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 ~~Approximately one semester 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

Course List

Code	Title	Credits
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:

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

Are you changing the total number of credits required for this program?

Are you changing the delivery format in any way (e.g adding an online option)?

Are you adding/removing a licensure option which was approved by SCHEV?

Will any portion of this program be offered at an off-campus location?

Are you adding significant new content areas to the program?

Will this program change affect any specialized accreditation?

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