

# MASTER OF SCIENCE IN THE FIELD OF APPLIED MATHEMATICS (STEM)

The Department of Mathematics offers two master's degree programs: the master of arts in mathematics and the master of science in applied mathematics. Faculty expertise covers a wide range of research specialties. With about 25 graduate students and 20 faculty members, there is lively interaction as well as extensive individual attention. All graduate students have individual advisers throughout their enrollment, starting from the time of admission. New students also receive peer advisers. In addition, research seminars and the department colloquium series help students explore potential research areas.

This is a STEM designated program.

Visit the program website (<https://math.columbian.gwu.edu/ms-applied-mathematics/>) for additional information.

## ADMISSIONS

**Admission deadlines:** **Fall** - April 1 (February 1 for applicants who wish to be considered for fellowships)

**Standardized test scores:** GRE general test is recommended but not required; GRE subject test is recommended but not required (institutional code 5246).

The Test of English as a Foreign Language (TOEFL), the academic International English Language Testing System (IELTS), or the PTE Academic is required of all applicants except those who hold a bachelor's, master's, or doctoral degree from a college or university in the United States or from an institution located in a country in which English is *the* official language, provided English was the language of instruction.

Minimum scores for the program are:

- Academic IELTS: an overall band score of 6.0 with no individual score below 5.0; or
- TOEFL: 550 on paper-based or 80 on Internet-based; or
- PTE Academic: 53;

Applicants to the Master's program who do not meet minimum English language requirements may be eligible for our full-time Applied English Language program.

**Prerequisite requirements:** A bachelor's degree in mathematics or comparable coursework.

**Recommendations required:** Two (2) recommendations required

**Prior academic records:**

Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Unofficial transcripts from all colleges and universities attended must be uploaded to your online application. Official transcripts are required only of applicants who are offered admission.

If transcripts are in a language other than English, English language translations must be provided. The English translation alone should be uploaded into your application.

**Statement of purpose:**

In an essay of 250 – 500 words, state your purpose in undertaking graduate study in your chosen field. Include your academic objectives, research interests, and career plans. Also discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned on the application. If you are applying for an assistantship or fellowship, you should also describe any teaching experience you have had.

**International applicants only:**

Please review International Applicant Information (<https://columbian.gwu.edu/international-graduate-applicants/>) carefully for details on required documents, earlier deadlines for applicants requiring an I-20 or DS-2019 from GW, and English language requirements.

Supporting documents not submitted online should be mailed to:

Columbian College of Arts and Sciences, Office of Graduate Studies  
The George Washington University  
801 22nd Street NW, Phillips Hall 107  
Washington DC 20052

For additional information about the admissions process visit the Columbian College of Arts and Sciences Frequently Asked Questions (<https://columbian.gwu.edu/graduate-admissions-faq/>) page.

Contact:

askccas@gwu.edu  
202-994-6210 (phone)

Hours: 9:00 am to 5:00 pm, Monday through Friday

## REQUIREMENTS

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (<http://bulletin.gwu.edu/arts-sciences/#degreeregulationstext>).

30 credits in approved courses divided between mathematics and one of the following areas of application: computer science, economics, engineering (civil, electrical, mechanical, or systems), operations research, physics, or statistics. No more than 12 credits may be in non-MATH courses. Students must petition and obtain the approval of the graduate committee in order to register for courses outside the department.

Students who wish to register for MATH 6995 Reading and Research must petition and obtain the approval of the graduate committee.

Up to 6 credits in courses taken at other institutions of the [Consortium of Universities of the Washington Metropolitan Area](#) may count toward degree requirements. Students wishing to take such courses must petition and obtain the approval of the graduate committee.

Subject to the approval of the graduate committee (requested via petition) and the agreement of the instructor, mathematics graduate students may take up to 6 credits in the undergraduate courses listed below for graduate credit. Appropriate additional work must be assigned for students to receive graduate credit in an undergraduate course.

Code	Title	Credits
MATH 3613	Introduction to Combinatorics	
MATH 3632	Introduction to Graph Theory	
MATH 3710	Introduction to Mathematical Logic	
MATH 3720	Axiomatic Set Theory	
MATH 3730	Computability Theory	
MATH 3740	Computational Complexity	
MATH 4239	Real Analysis I	

MATH 4240

Real Analysis II

MATH 4981

Seminar: Topics in Mathematics