

A fractal image, likely a Mandelbrot set, with intricate, self-similar patterns in shades of blue, orange, and yellow. The fractal is centered on a black background, which is partially obscured by a purple banner.

GRADUATE PROGRAM

Department of MATHEMATICS



HOWARD
UNIVERSITY

The Department of Mathematics at Howard University offers rigorous graduate programs that lead to the Master of Science and Doctor of Philosophy degrees in mathematics.

Our programs combine study and research opportunities in pure and applied mathematics under the direction of a member of the graduate faculty. The department is the leading producer of African-American and African Ph.D. graduates in mathematics, and provides a unique learning environment for graduate study.

Our department is an institutional partner of the following research institutes. These institutes subsidize the travel and local expenses of IP member faculty, postdoctoral fellows and students, to allow their participation in mathematics research and education programs.

- ▶ Mathematical Sciences Research Institute (MSRI) at University of California, Berkeley
- ▶ Mathematical Biosciences Institute (MBI) at The Ohio State University
- ▶ Command, Control and Interoperability Center for Advanced Data Analysis (a Department of Homeland Security Center of Excellence) at Rutgers University
- ▶ National Institute for Mathematical and Biological Synthesis (NIMBioS) at The University of Tennessee

A bachelor's degree and a GPA of 3.2 in the student's required undergraduate math courses. Admitted students must take the screening (placement) examination on arrival.

More detailed information on courses, admission, teaching assistantships & fellowships and degree requirements is available in the Howard University Bulletin of General Information, and on our website at www.coas.howard.edu/mathematics.

Our Program

General Admission Requirements

Master of Science M.S. Degree

To obtain a Master of Science degree in mathematics, a student must earn a minimum of 30 credit hours or 36 credit hours depending upon whether or not the student elects to write a thesis.

Students must fulfill course requirements as well as:

- ▶ Oral Examination (thesis students)
- ▶ Qualifying Examination (no-thesis students)
- ▶ Screening Examination
- ▶ Expository Writing Examination
- ▶ Residence Requirement

Graduate students are encouraged to attend seminars, lecture series and colloquia on a regular basis.

Doctor of Philosophy Ph.D. Degree

This degree program requires a minimum of 60 graduate credits beyond the B.S. degree, or a minimum of 36 graduate credits beyond the M.S. degree in course work. In addition, 12 graduate credits are required for the Ph.D. dissertation.

Students must fulfill course requirements as well as:

- ▶ Three Qualifying Examinations
- ▶ Dissertation
- ▶ Language Requirement
- ▶ Residence Requirement

Doctoral candidates must participate actively in at least two seminars during candidacy.



CORE COURSES

Number Theory I
Applications of Analysis
Complex Analysis II
Functional Analysis I
Algebraic Topology I

Algebraic Topology II
Differential Geometry I
Differential Geometry II
Partial Differential Equations II

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Algebra I
Algebra II
Real Analysis I

Real Analysis II
Topology I
Complex Analysis I

2 GROUP

Introduction to Analysis I
Introduction to Analysis II
Introduction to Modern Algebra I
Introduction to Modern Algebra II
Introduction to Complex Analysis

Linear Algebra
Introduction to Differential Geometry
Probability and Statistics
Introduction to Number Theory
Introduction to General Topology

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CONFERENCE TRAVEL

The Department of Mathematics and the Office of the Dean of the Graduate School provide travel funds for students attending mathematics conferences, workshops and meetings.

ACTIVITIES

Financial Support

The Mathematics Department and the Graduate School offer financial support to newly admitted and continuing students who are making satisfactory progress. Please contact us for assistantships, fellowship and teaching associate application and eligibility information.

GRADUATE ASSISTANTSHIPS

TEACHING ASSOCIATE POSITIONS

GRADUATE FELLOWSHIPS



Our Faculty

Berezovskaya, F.
Bezandry, P.
Burstein, A.
Chen, S.
Davenport, D.
Drumm, T.
Einstein-Matthews, S.
Gurski, K.

James, D.
Kang, Y.
Mahmood, M.
Maleki, A.
Mawi, H.
McGowan, J.
Miller, W.
Ndiaye, C.

Peart, P.
Ramaroson, F.
Sitaraman, S.
Shapiro, L. PROF. EMERITUS
Toni, B.
Wang, X.
Williams, D.
Yakubu, A.

The faculty at Howard are all dedicated to the mission of the university and make themselves available to students who need individual help. There are many opportunities to socialize with faculty members and other mathematics students through the welcoming parties, the colloquia and the Mathematics Club.

The faculty members of the Department of Mathematics are leading researchers in the following fields of pure and applied mathematics:

Algebra
Algebraic Geometry
Applied Mathematics
Combinatorics
Ordinary Differential Equations
Partial Differential Equations
Differential Geometry
Functional Analysis

Harmonic Analysis
Mathematical Biology
Mathematical Physics
Number Theory
Operator Theory
Statistics and Probability
Topology

APPLICATION AND ADMISSION

We welcome your interest in our programs. To apply to our graduate program, please see guidelines, procedures and requirements at

www.gs.howard.edu/admissions

For More Information

Department of Mathematics
Howard University
Graduate School
204 Academic Support Building B
Washington, DC 20059
(202) 806-6830

www.coas.howard.edu/mathematics



The Department of Mathematics has a long and distinguished history, not only as an educational component of the university in the traditional sense, but as a leading force in the development of a culture of mathematics in the world community for African-Americans and for underrepresented groups in the mathematical sciences. The first three African-Americans to receive the Ph.D. degree in mathematics (Elbert Frank Cox, Dudley Weldon Woodard, and William Schieffelin Claytor) all served as long-term faculty members in our department. Dr. David H. Blackwell, the brilliant African-American mathematician and statistician extraordinaire, led Howard's Department of Mathematics in his role as chair of the department from 1947 to 1954. In 1975, under the aegis of Dr. James A. Donaldson, then chair of the department, a Ph.D. program in mathematics was established here at Howard.

We welcome you
to the Howard
family

