

# ***Master of Science Program in Mathematics***

**at John Carroll University**

***....our personal approach  
is the difference***



The Master of Science program at John Carroll University combines the classical tradition of pure mathematics with the option of coursework in applied mathematics. Our faculty are committed to providing close personal attention to students in a high quality academic environment; at John Carroll, student-faculty contact is the *norm* rather than the exception.

In addition to the regularly scheduled courses, faculty members also offer reading courses on a one-to-one basis in their areas of specialty. Students frequently use the M.S. program as a stepping-stone for further graduate study. Graduates of our program have a competitive edge when applying to doctoral programs in mathematics.

Our M.S. program has been especially attractive to students who want to begin their graduate studies in a

small program where their progress is carefully monitored and their success is nurtured.

Graduates of our program have established careers in business, industry, government, and education. Their graduate degree has played a major part in their success.

Of course, the primary reason students continue their education in mathematics is because of the intellectual excitement it provides. Mathematics is one of the great achievements of the human mind.

## **Features**

- Small class size and close working relationship with faculty.
- Opportunities to collaborate with faculty on research projects.

- Graduate assistantships available to full-time students: full tuition waiver plus \$11,000 stipend per academic year.
- Attractive suburban campus.

## **Admission**

Entrance requirements include a minimum of seven post-calculus mathematics courses, preferably including abstract algebra, linear algebra and advanced calculus (or real analysis). If you have not taken all of these courses, one or more of them may be taken as part of the program. Normally, applicants should have a minimum 2.8 GPA in mathematics. If you do not meet these criteria, provisional admission may be granted under certain circumstances.

## Assistantships

Graduate Assistants assist faculty by grading papers, working in the department tutoring center, and teaching under supervision. Assistants who have an interest in teaching are sometimes given this opportunity in their second year. Assistantships are awarded on a competitive basis, and normally require at least a 3.0 GPA in mathematics. Assistantship applications completed by March 1 will receive full consideration. Late applications may also be considered, depending on assistantship availability.

## Courses

Courses open only to M.S. graduate students include:

Algebra I, II  
Real Analysis I, II  
Topology  
Complex Analysis  
Differential Geometry  
Functional Analysis

Your program will include at least six of these courses, complemented by additional courses selected from a wide range of offerings in pure and applied mathematics. Degree requirements include ten courses, a comprehensive exam, and a research essay, written under the guidance of a faculty member.

## Faculty

The following is a list of our faculty and their interests:

**Patrick B. Chen, Ph.D.,**  
*topological groups, lie groups, algebraic groups.*

**Barbara K. D'Ambrosia, Ph.D.,**  
*algebra, ring theory.*

**Brendan J. Foreman, Ph.D.,**  
*mathematics education, geometry.*

**Marc Kirschenbaum, Ph.D.,**  
*logic programming, artificial intelligence, singularity theory.*

**Robert J. Kolesar, Ph.D.,**  
*algebraic topology, history of mathematics.*

**Douglas A. Norris, Ph.D.,**  
*differential geometry, mathematics education.*

**Daniel W. Palmer, Ph.D.,**  
*swarm intelligence, decentralized control algorithms, software engineering.*

**Paige E. Rinker, Ph.D.,**  
*applied abstract algebra, cluster analysis of ranked data, graph theory.*

**Linda M. Seiter, Ph.D.,**  
*software engineering*

**Paul L. Shick, Ph.D., Chair,**  
*algebraic topology, homological algebra.*

**Tom Short, Ph.D.,**  
*statistics, statistics education, statistical consulting.*

**Carl R. Spitznagel, Ph.D.,**  
*structure of semigroups, fractal geometry, technology in teaching mathematics.*

**David L. Stenson, Ph.D.,**  
*topological algebra, database systems.*

## Further Information

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