**Mathematics**

**Master of Arts (M.A.) Degree**

**DEGREE INFORMATION**

**Priority Admission Application Deadlines:**

**Fall:** February 1

**Spring:** October 1

International applicant deadlines:

<http://www.grad.usf.edu/majors>

**Minimum Total Hours:** 30

**Level:** Masters

**CIP Code:** 27.0101

**Dept. Code:** MTH

**Major/College Codes:** MTH AS

**Approved:** 1965

**Concentration:**

Pure and Applied (PAA)

**CONTACT INFORMATION**

**College:** Arts and Sciences

**Department:** Mathematics and Statistics

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu)

**MAJOR INFORMATION**

The MA in Mathematics offered by the Department of Mathematics and Statistics provides the experience and knowledge to understand and appreciate prior accomplishments in the discipline and develops the skills necessary for a meaningful contribution to the intellectual advancement and applications of the discipline. It prepares its graduates to pursue long-term careers in their field by providing solid and cutting edge knowledge, as well as a technical education enabling them to take on leading positions in a modern economy.

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions), as well as requirements for admission to the major, listed below.

* A Bachelor’s degree or equivalent in mathematical sciences or related area.
* At least a 55 percentile Quantitative score on the GRE; Verbal and Analytic Writing scores on the GRE are also considered.
* At least a 3.00 GPA in undergraduate math courses, and specifically in the following courses or their equivalents:

Elementary Abstract Algebra, Bridge to Abstract Mathematics, and Intermediate Analysis.

* Three letters of recommendation (two of which should be from college level mathematics/statistics professors).
* A completed math department application form, including a statement of goals.
* A completed departmental graduate teaching assistantship application form (if such a position is desired).

## The Graduate Admissions Committee may provisionally admit applicants from other majors to the Master's Program if they meet the GPA requirement.

**CURRICULUM REQUIREMENTS**

**Total Minimum Hours: 30 hours**

Core courses – 9 hours

Sequence Courses – 12 hours minimum

Electives – 3-9 hours minimum

Thesis (for students electing this option) – 6 hours minimum

**Core Courses – 9 hours minimum**

All students in the Mathematics MA program must take the following core courses:

MAA 5306 3 Introduction to Real Analysis

MAS 5145 3 Advanced Linear Algebra

MAE 5177 3 Teaching College Mathematics (Proposed course)

**Sequences of Courses – 12 hours minimum**

The program offers coherent pairs/triples of courses, referred to as sequences, to ensure a certain balance of breadth and depth of disciplinary knowledge. The student must complete one Fundamental sequence and a total of two sequences from among the Fundamental and Elective Sequences with at least a 3.0 average in each sequence. Fundamental Sequences prepare students for Fundamental Qualifying Examinations. A student who passes a Fundamental Qualifying Examination at Ph.D. level will be considered to have completed the corresponding Fundamental Sequence. Each course may count towards only one Sequence.

**Fundamental Sequences:**

Algebra: MAS 5311 Algebra I

MAS 6312 Algebra II

Analysis: MAA 5306 Introduction to Real Analysis (taken as a core requirement)

MAA 5307 Real Analysis I

MAA 6616 Real Analysis II

Topology: MTG 5316 Topology I

MTG 6317 Topology II

**Elective Sequences**

Applied Mathematics: one of MAP 5407 Methods of Applied Mathematics

MAP 5345 Applied Partial Differential Equations

one of MAA 5405 Applied Complex Analysis

MAT 5932 Selected Topics (Numerical Analysis)

one of MAP 6205 Control Theory and Optimization

MAT 6932 Selected Topics (Dynamical Systems II)

Combinatorics: MAD 6206 Combinatorics I

MAD 6207 Combinatorics II

Complex Analysis: MAA 6406 Complex Analysis I

MAA 6407 Complex Analysis II

Differential Geometry MTG 6256 Differential Geometry I

MTG 6257 Differential Geometry II (Proposed course)

Dynamical Systems: MAT 5932 Selected Topics (Dynamical Systems I)

MAT 6932 Selected Topics (Dynamical Systems II)

Functional Analysis: MAA 6506 Functional Analysis I

MAA 6507 Functional Analysis II

Nonlinear Analysis: MAP 5316 Ordinary Differential Equations I

MAP 5317 Ordinary Differential Equations II

Partial Differential Equations: MAP 5345 Applied Partial Differential Equations

MAP 6356 Partial Differential Equations

Theory of Computing: MAD 6616 Theory of Computing

MAD 6510 Analysis of Algorithms

All sequences for the Statistics Ph.D. Concentration are also Elective Sequences for the Pure and Applied Concentration.

**Electives – 3 hours minimum**

Students select graduate course electives in consultation with their advisor.

**Independent Study, Graduate Seminar, and Directed Research**

Prior to passing two Fundamental Qualifying Examinations at Ph.D. level, students may not earn credit toward the MA or Ph.D. degrees for MAT 6908 Independent Study, MAT 6939 Graduate Seminar, and MAT 6911 / 7912 Directed Research, although they make take these course with the approval of the Concentration Graduate Director. Students must obtain the approval of the Seminar Organizer to take credit hours of MAT 6939 Graduate Seminar.

**External Coursework**

Graduate coursework taken from other departments may be accepted toward the minimum number of credits with prior approval from the Concentration Graduate Director.

**Qualifying Exam**

A qualifying examination based on a Core Sequence is called a Core Qualifying Examination. The syllabus for each examination is available from the Department. Core Qualifying Examinations are offered in January, May and September.

**Comprehensive Exam**

Each candidate for the M.A. degree must either be examined on a thesis (the Thesis Option) or pass one of the written Core Qualifying Examinations (the Exam option). For the student who elects the Thesis Option, the Comprehensive Examination takes the form of an oral thesis defense, in which the candidate must demonstrate knowledge of the general subject area of the thesis. For the student who elects the Exam Option, the Comprehensive Examination is passed by passing one of the Core Qualifying Examinations at M.A. level or better. A student may repeat each examination once.

**Thesis – 6 hours**

A student who elects the Thesis Option must register for a minimum of six (6) credit hours in MAT 6971, only six (6) hours of which may be applied toward the 30-hour degree requirement.

**COURSES**

See <http://www.ugs.usf.edu/course-inventory/>