

## UNIT REPORT

**Mathematics (MS) - Reviewer's Report - Academic Data**

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## Mathematics (MS)

### M.S. Mathematics Mission

**Mission:**

Graduates of the Master of Science in Mathematics Program have the mathematical knowledge and skills to work in business, industry, to teach in high schools and community colleges or to pursue further study in mathematics, science and technology. This mission aligns with the department mission (<http://www.math.ufl.edu/fac/organization.html>) because the graduates generate, accumulate, organize, apply and disseminate knowledge in mathematics. It also supports the college mission by expanding knowledge of and practice in the mathematical sciences and in preparing graduates for an increasingly technological and changing society. It supports the university mission as one of the offerings of broad-based public education.

**Start:** 07/01/2017**End:** 06/30/2018

### PG 1 Broad preparation for careers and future study

**Goal:**

Students discuss and explain mathematics in a range of areas to prepare for careers in teaching, business and industry and for further study in mathematics and mathematics related fields.

**Evaluation Method:**

Review of courses during spring interview; approval of plan of study for non-thesis applied masters.

Sample: students who entered the graduate program in Fall 2016, were enrolled in Fall 2017 and were not in the MAT or MST program.

**Results:**

The annual interviews of the 16 students in the sample confirmed that students were receiving training in more than one area of mathematics.

**XOn Campus:** true**XProgram CIP:** 27.0101**XOnline:** false**XOther Site:** false**XIf Other Site:**

### SLO 1 Knowledge

**Outcome:**

Depth: Either solves problems in two areas from algebra/analysis/applied/topology or conducts research in mathematics at the master's level.

**SLO Area (select one):** Knowledge (Grad)**Assessment Method:**

To pass the assessment a student must pass parts of the First Year exam in two areas, or, in the case of a student taking the thesis option, defend a thesis.

Sample: students who entered the graduate program in Fall 2016, were enrolled in Fall 2017 and were not in the MAT or MST program.

**SLO Not Assessed This Year:****Results:**

The criterion for success is 70%. 16 out of 16 students passed the assessment for a percentage of 100%. This met the criterion for success.

**Start:** 07/01/2017**End:** 06/30/2018**Threshold of Acceptability:** 70**How many students did you assess for this outcome?:** 16**How many students met the outcome?:** 16**What percentage of students met the outcome?:** 100**Does this meet your threshold of acceptability?:** Yes

### SLO 2 Skills

**Outcome:**

Writes extended mathematical prose to the precision required by the discipline and supports mathematical arguments with logical reasoning.

**SLO Area (select one):** Skills (Grad)

**Assessment Method:**

Pass one part of the First Year Exams or write master's thesis.

Sample: students who entered the graduate program in 2017-2018, registered in Spring 2018, and were not in the MAT or MST programs.

**SLO Not Assessed This Year:****Results:**

The criterion for success is 70%. 14 students out of 14 passed the assessment for a percentage of 100%. This met the criterion for success.

**Start:** 07/01/2017

**End:** 06/30/2018

**Threshold of Acceptability:** 70

**How many students did you assess for this outcome?:** 14

**How many students met the outcome?:** 14

**What percentage of students met the outcome?:** 100

**Does this meet your threshold of acceptability?:** Yes

**SLO 3 Professional Behavior****Outcome:**

Teaches mathematical courses in a professional manner, assessing the appropriate level of presentation for the students, creating an atmosphere conducive to learning, and supporting student-teacher interactions for active learning.

**SLO Area (select one):** Professional Behavior (Grad)

**Assessment Method:**

Observation. Measured by supervisor of graduate teaching assistants with input from relevant coordinator/observer.

Sample: students who received the MS in 2017-2018.

**SLO Not Assessed This Year:****Results:**

The criterion for success is 70%. 13 out of the 13 students passed the assessment for a percentage of 100%. This met the criterion for success.

**Start:** 07/01/2017

**End:** 06/30/2018

**Threshold of Acceptability:** 70

**How many students did you assess for this outcome?:** 13

**How many students met the outcome?:** 13

**What percentage of students met the outcome?:** 100

**Does this meet your threshold of acceptability?:** Yes

**New Programmatic Use of Results Item**

**Program:** Mathematics (MS)

**Programmatic Use of Results:**

The Graduate Coordinator reviewed the results with the Graduate Committee.

The results of the Program Goal were used to determine appropriate curricula for students taking the applied mathematics non-thesis option.

The results of SLO1 were used to identify students unlikely to continue into the PhD program, in order to help them to plan courses of study directed towards their career goals at an early stage.

The results of SLO2 were used in an annual evaluation to let students know whether they meet or are near the academic progress criteria for the First Year Exam.

The results of SLO3 were reviewed by the Graduate Coordinator and the Supervisor of Teaching Assistants and reported to the Graduate Committee. These regular assessments were used to give students continuing in the doctoral program commensurate teaching responsibilities.

**Program Results Not Reported This Year:****M.S. Mathematics Detail****End:** 06/30/2018**Start:** 07/01/2017**Providing Department:** Mathematics (MS)**Assessment Cycle (All AAPs):**

Assessment Cycle for:

Program M.S. in Mathematics    College of Liberal Arts and Sciences

Analysis and Interpretation:                      May of the assessment year

Program Modifications:                              Completed by April of the year  
following the assessment year.Dissemination:                                        Report on analysis and interpretation completed by  
May of the assessment year.  
Report on Modifications completed by May of the  
year following the assessment year.

Year	14-15	15-16	16-17	17-18	18-19	19-20
SLOs						
Knowledge						
<b>SLO 1: Breadth</b>	x	x	x	x	x	x
<b>SLO 2: Depth</b>	x	x	x	x	x	x
Skills						
<b>SLO 3: Communication</b>	x	x	x	x	x	x
Professional Behavior						
<b>SLO 4: Teaching</b>	x	x	x	x	x	x

**SLO Assessment Rubric (All AAPs):****Mathematics Teaching Assistant Classroom Observation**

Observation of	Course:	Discussion section?		
Observer:	Room:	Period:	Date:	
<b>Expectation Scoring Categories:</b> (1) <b>Below</b> , (2) <b>Near</b> , (3) <b>Meets</b> , or (4) <b>Exceeds</b> . Either circle the appropriate number or write in the blank square <b>ns</b> for not seen, <b>na</b> for not applicable.				
<b>Preparation</b>				
1. Is well-prepared and able to work homework problems.		1	2	3 4
2. Knows the material in the text and lectures.		1	2	3 4
3. Problem solving techniques are consistent with lecturer and text.		1	2	3 4
4. Promptly returns graded assignments.		1		3
5. Returns assignments individually, respecting student privacy.*		1		3
<b>Presentation</b>				
1. Is on time for class*		1		3
2. Is friendly but professional in manner and demeanor*		1	2	3 4
3. Indicates topics of the day		1		3
4. Speaks loudly and clearly		1	2	3 4
5. Communicates effectively so students can follow		1	2	3 4
6. Goes step-by-step and writes down steps		1	2	3 4
7. Uses blackboard effectively		1	2	3 4
8. Presents material at appropriate level		1	2	3 4
9. Emphasizes methods of solving problems rather than solutions		1	2	3 4
10. Emphasizes key points and concepts		1	2	3 4
11. Uses class time effectively		1	2	3 4
12. When appropriate, encourages alternate ways to solve problems		1	2	3 4
<b>Teacher-Student Interaction</b>				
1. Actively encourages student questions*		1	2	3 4
2. Listens to and understands student questions*		1	2	3 4
3. Responds appropriately to student questions*		1	2	3 4
4. Makes sure class hears and understands questions		1	2	3 4
5. Gives reasons for rejecting an answer*		1	2	3 4
6. Corrects misconceptions, sees that correct answer is brought out		1	2	3 4
7. Admits if doesn't know the answer or if was wrong		1	2	3 4
8. Asks questions to monitor students' understanding		1	2	3 4
9. Does not embarrass or belittle students*		1		3

Classroom Atmosphere		
1. Establishes positive rapport, mutual respect with the students*		1 2 3 4
2. Classroom atmosphere is conducive to learning		1 2 3 4
3. Maintains eye contact		1 2 3 4
4. Keeps students' attention, including those not interacting		1 2 3 4
5. Provides opportunities for and encourages active participation		1 2 3 4
6. Indicates availability for giving individual help		1 3
Attendance		
1. 0 to 1/3 full _____	1/3 to 2/3 full _____	2/3 to full _____
2. Most students were (a) on time;	(b) came in 0-- 15 min.	[c] some came > 15 min

last revised January 23, 2013

#### Research (Graduate and Professional AAPs only):

Almost all of our Master of Science graduates take a non-thesis degree. Students choosing the thesis option work with their faculty advisor on a suitable mathematical topic, frequently present their on-going work in seminars to faculty and fellow graduate students, and defend their research results in the thesis defense with their supervisory committee.

#### Measurement Tools (Graduate and Professional AAPs Only):

We survey first year students in their first semester to ascertain their mathematical readiness for our program. Progress toward breadth of knowledge is assessed during the annual spring graduate committee interview with a review of breadth and number of 6000+ courses taken. We assess how many of the four broad areas for our doctoral distribution requirements are represented in the course work of our master's students, with an expectation of a minimum of two areas, most students have three areas and some having four. For students in the applied track, we look for a complementary mix of mathematics courses and courses in allied fields when we approve a plan of study for students who seek the applied master's degree and do not choose a standard package. Depth of knowledge is assessed in the written First Year Exams for non-thesis students and in the thesis defense for thesis student. The First Year Exams are prepared and graded by a departmental committee. The supervisory committee assesses depth of knowledge the area of research for during the final defense for those taking the thesis option.

Written communication skills are assessed by departmental committees in the First Year Examinations and thesis defenses.

A student is a satisfactory teacher if the last assessment, by the supervisor of graduate teaching assistants and the relevant course coordinators(s), of teaching prior to graduation was satisfactory.

The rubric used in classroom observations was adapted from an instrument developed by lecturers in the department of mathematics without scoring levels. A version of that instrument has been distributed to graduate students for some years in the TA Training Workshop run every fall term prior to classes to prepare new TAs for their teaching duties. The graduate coordinator worked with the lecturers to convert the instrument to a rubric and in a session of the Teaching Methods worked to calibrate the rubric for uniform use.

#### Assessment Timeline (Graduate and Professional AAPs only):