

# **M.A.T. in Mathematics Academic Assessment Plan**

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*Office of the Provost*

*University of  
Florida*

*Institutional  
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*Continuous Quality  
Enhancement*

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# Academic Assessment Plan for M.A.T. in Mathematics

College of Liberal Arts and Sciences

## A. Mission

The mission of the Master of Arts in Teaching in Mathematics program to produce graduates with the mathematical skills to teach mathematics in secondary schools and community colleges in the State of Florida, pursue for further graduate work in education, work in business and industry, and serve their communities with their mathematical knowledge and problem solving skills.

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.

## B. Student Learning Outcomes and Assessment Measures

SLO Type	Student Learning Outcome	Assessment Method	Degree Delivery
Knowledge	Demonstrates content knowledge relevant to mathematics teaching.	Student academic record, portfolio, and final examination. Measured by supervisory committee.	Campus
Skills	Communicates mathematics effectively through prior organization of material, effective use of the blackboard or other presentation media, compelling choice of illustrative examples, and emphasis on methods of solving problems rather than on presenting solutions.	Final oral exam; rubric scoring of classroom observation by member of supervisory committee; assessment of readiness for stand-alone teaching by supervisor of teaching assistants.	Campus
Professional Behavior	Addresses students respectfully and develops and applies uniform grading processes.	Rubric scoring of classroom observation by member of supervisory committee and assessment of portfolio by supervisory committee.	Campus

## C. Research

The M.A.T. in Mathematics is not a research degree. Students taking MAE 6943 Internship in College Teaching are encouraged to research methods of mathematics teaching.

## D. Assessment Timeline

Program M.A.T. in Mathematics

College of Liberal Arts and Sciences

Assessment	Assessment 1	Assessment 2	Assessment 3
<b>SLOs</b>			
<b>Knowledge</b>			
SLO 1: Math for teaching	Annual evaluation in spring term	Review of portfolio	Final comprehensive exam
<b>Skills</b>			
SLO 2: Presentation skills	Review of teaching observation	Highest level of teaching experience	Final comprehensive exam
<b>Professional Behavior</b>			
SLO 3: Respectful and equitable treatment	Review of teaching observation	Review of portfolio	

## E. Assessment Cycle

Assessment Cycle for:

Program M.A.T. in Mathematics     College of Liberal Arts and Sciences

Analysis and Interpretation:

May of the assessment year  
Completed by April of the year following the assessment year.

Program Modifications:

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.

SLOs	Year	10-11	11-12	12-13	13-14	14-15	15-16
<b>Content Knowledge</b>							
SLO 1: Math for teaching				x	x	x	x
<b>Skills</b>							
SLO 2: Presentation skills				x	x	x	x
<b>Professional Behavior</b>							
SLO 3: Respectful and equitable treatment				x	x	x	x

## F. Measurement Tools

For the assessment of content knowledge for mathematics teaching, the supervisory committee examines the academic record, the teaching portfolio and conducts an oral exam.

For the assessment of presentation skills, the supervisory committee reviews the rubric scoring of a classroom observation by a member of the committee focusing on the section on presentation (see rubric below), observes the student's presentation skills in the oral exam, determines whether or not the last evaluation of classroom teaching was satisfactory, and ascertains whether or not the individual has taught a stand-alone class or is ready to do so in the estimation of the supervisory of graduate teaching assistants. Those who have reached this level are considered proficient in presentation skills and have a reputation for addressing their students respectfully and grading them uniformly.

For the assessment of respectfully and equitable treatment, the supervisory committee reviews the teaching portfolio and the rubric scoring of the classroom observation focusing on the starred items.

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.

## 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	
<b>Classroom Atmosphere</b>					
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	
<b>Attendance</b>					
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

## G. Assessment Oversight

Here, list the names and contact information of those who oversee the assessment process in your program. Add or delete rows as needed.

Name	Department Affiliation	Email Address	Phone Number
Jean A. Larson	Mathematics	<a href="mailto:jal@ufl.edu">jal@ufl.edu</a>	(352) 392-0281
Rick Smith	Mathematics	<a href="mailto:rs@ufl.edu">rs@ufl.edu</a>	(352) 392-0281

## Figure 1. University of Florida Graduate/Professional Program Assessment Plan Review Rubric

Related resources are found at <http://www.ua.assessment.edu>

Program:		Year:			
Component	Criterion	Rating			Comments
		Met	Partially Met	Not Met	
Mission Statement	Mission statement is articulated clearly.				
	The program mission clearly supports the College and University missions, and includes specific statements describing how it supports these missions.				
Student Learning Outcomes (SLOs) and Assessment Measures	SLOs are stated clearly.				
	SLOs focus on demonstration of student learning.				
	SLOs are measurable.				
	Measurements are appropriate for the SLO.				
Research	Research expectations for the program are clear, concise, and appropriate for the discipline.				
Assessment Map	The Assessment Map indicates the times in the program where the SLOs are assessed and measured.				
	The Assessment Map identifies the assessments used for each SLO.				
Assessment Cycle	The assessment cycle is clear.				
	All student learning outcomes are measured.				
	Data is collected at least once in the cycle.				
	The cycle includes a date or time period for data analysis and interpretation.				
	The cycle includes a date for planning improvement actions based on the data analysis.				
	The cycle includes a date for dissemination of results to the appropriate stakeholders.				

University of Florida Graduate/Professional Program Assessment Plan Review Rubric, continued

Component	Criterion	Rating			Comments
		Met	Partially Met	Not Met	
Measurement Tools	Measurement tools are described clearly and concisely.				
	Measurements are appropriate for the SLOs.				
	Methods and procedures reflect an appropriate balance of direct and indirect methods.				
	The report presents examples of at least one measurement tool.				
Assessment Oversight	Appropriate personnel (coordinator, committee, etc.) charged with assessment responsibilities are identified				