

# **Ph.D. in Mathematics Academic Assessment Plan**

College of Liberal Arts and Sciences

*Office of the Provost*

*University of  
Florida*

*Institutional  
Assessment*

*Continuous Quality  
Enhancement*

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## Academic Assessment Plan for Ph.D. in Mathematics

College of Liberal Arts and Sciences

### A. Mission

The mission of the Ph.D. in Mathematics program is to produce academic mathematicians and mathematical research scientists.

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	(1) Breadth: constructs and evaluates mathematical arguments using algorithms and techniques specific to a range of specialties.  (2) Depth: Describes and explains advanced knowledge of at least one chosen specialty and conducts research in it.	Performance in classes in four areas: survey first year students; review in annual evaluations.  Written and oral parts of qualifying exam; thesis defense.	Campus
Skills	(3) Communicates mathematical thinking through clear and compelling arguments to faculty, peers and others.	Written and oral parts of qualifying exam and thesis defense; question on seminar and conference presentations in a survey.	Campus
Professional Behavior	(4) ): Teaches mathematical courses in a professional manner, assessing the appropriate level of presentation for the students, creating an atmosphere conducive	Observation. Measured by supervisor of graduate teaching assistants with input from relevant course	Campus

	to learning, and supporting student-teacher interactions for active learning.	coordinator/observer.	
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### C. Research

Incoming students are assigned a mentor who is chosen in their area of interest if it is known. The department and the mentors encourage students to find an area of potential research. One common approach is to attend seminars where faculty and graduate students share their research. Students take reading courses with potential advisors, and when a mutually agreeable match is reached, form a committee, start work with their advisor on learning the mathematics and the research methodology appropriate to their discipline. They share their research in seminars in the department, and in many cases are encouraged to give talks on their work in professional meetings, where they are able to learn first hand about other research in related areas.

## D. Assessment Timeline

Program Ph.D. in Mathematics

College of Liberal Arts and Sciences

Assessment	Assessment 1	Assessment 2	Assessment 3	Enter more as needed
<b>SLOs</b>				
<b>Knowledge</b>				
SLO 1: Breadth of knowledge	Survey of first year students in first fall semester at UF	Annual evaluation in spring term		
SLO 2: Specialized knowledge	Written part of qualifying exam (exams May & August)	Oral part of qualifying exam	Thesis defense	
<b>Skills</b>				
SLO 3: Oral and written communication	Written part of qualifying exam (exams May & August)	Oral part of qualifying exam	Thesis defense	Form for annual interview in spring term
<b>Professional Behavior</b>				
SLO 4: Satisfactory teaching	First review of classroom teaching	Last review of classroom teaching		

## E. Assessment Cycle

Assessment Cycle for:

Program Ph.D. in Mathematics   College of Liberal Arts and Sciences

Analysis and Interpretation:

May of the Assessment year

Program Modifications:

Completed by April of following Assessment Year

Dissemination:

Report on analysis and Interpretation by May of the Assessment Year; Report on Modifications by May of the year following the Assessment year.

Year	10-11	11-12	12-13	13-14	14-15	15-16
<b>SLOs</b>						
<b>Content Knowledge</b>						
SLO 1: Breadth of Knowledge	x	x	x	x	x	x
SLO 2: Depth of Knowledge	x	x	x	x	x	x
<b>Skills</b>						
SLO 3: Oral and written communication	x	x	x	x	x	x
<b>Professional Behavior</b>						
SLO 4: Teach in a professional manner	x	x	x	x	x	x

## F. Measurement Tools

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. Depth of knowledge is assessed in the written and oral parts of the qualifying examination and the thesis defense, by a departmental committee for the written part of the qualifying examination and by the supervisory committee for the oral qualifying examination with a rubric, and in the final defense.

Oral and written communication skills are assessed by a departmental committee in the written part of the qualifying examination and by the supervisory committee in the oral part of the qualifying examination with a rubric, and in the thesis defense. In addition, a question about improvement of oral communication skills is embedded in the form students fill out for their annual spring interview with the graduate committee.

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 following rubric is used in the oral part of the qualifying exam.

Name of Candidate: _____		
Rubric for Use in Oral Qualifying Examinations for the PhD in Mathematics		
Criteria	Needs Improvement	Satisfactory
1. Problem Definition: Delineates the area of proposed research.		
2. Literature: Demonstrates sound knowledge of the research area and its literature.		
3. Quality of oral communication: Communicates mathematical ideas clearly and professionally in oral form.		
4. Quality of written communication: Communicates mathematical ideas clearly and professionally in written form.		
5. Prepared for research: Demonstrates capability for independent research in the area of study, preparedness in core disciplines relevant to research, and ability to complete research in the		

proposed area.		
6. Context: Places the proposed research area into a larger context, and, where appropriate, discusses potential applications.		

Passed

Did not pass

Passing is by approval of the supervisory committee and requires at least four of the six criteria are met satisfactorily. The committee is encouraged to recommend ways for the candidate to improve those areas needing attention.

Committee Chair: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Rubric approved by the Graduate Committee on 11/8/2012 and by the Steering Committee on 11/27/2012

## 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
Graduate coordinator and Graduate Committee	Mathematics		(352) 392-0281
Supervisor of the Teaching Assistants	Mathematics		(352) 392-0281