

**Department of Mathematical Sciences**  
**PhD Program Assessment 2015-2017**

PhD Programs assessed:        PhD in Mathematics  
     PhD in Statistics

**1. What was done on assessment this year? AY 2015 - 2017**

Each PhD program was reviewed according to our Program Assessment plan. The departmental Graduate Committee (henceforth, GPC) convened to deliberate the assessment results and determine if any program changes were needed.

**2. What assessment data were collected?**

Results from Comprehensive Exams (qualifying, written, oral and defense).

Students taking comprehensive exams in 2015-16 and 2016-17

Last 4 GID	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Results	Program
1844	P				Continuing	Math
2816	*		P		Continuing	Math
9372	*				Left program	Math
6731	*		P		Continuing	Math
3309	P				Continuing	Math
4207	P			O	Continuing	Math
5630	P				Continuing	Math
6103	P				Continuing	Math
6890	Q				Graduated	Statistics
7350	O		D		Graduated	Math Education
1982	D				Graduated	Math
3915	D				Graduated	Math Education
6589		D			Graduated	Math
5656		D			Graduated	Math
5738		D			Graduated	Statistics
6626			*		Continuing	Math
1481			NP Q	Q	Continuing	Statistics
4029			Q		Continuing	Statistics
5678			Q		Continuing	Statistics
5183			Q		Continuing	Statistics
5705					Graduated	Math
3119					Graduated	Math
0611					Graduated	Statistics
5232					Graduated	Statistics
4706			D		Graduated	Math Education
9659				Q	Continuing	Statistics

6764				Q	Continuing	Statistics
6436				Q	Continuing	Statistics
1502				Q*	Continuing	Statistics
9322				P	Continuing	Statistics
4387				P	Continuing	Statistics
4953					Continuing	Math

### Symbol Key

- \* Student completed an attempt in one component of a multicomponent exam. Not counted as pass until all components completed.
- W Passed Written Comprehensive Exam
- O Passed Oral Comprehensive Exam
- Q Passed Qualifying Comprehensive Exam
- D Passed Defense
- NP Student's first attempt was not passed
- F Fail

### Data Summary

Total number of students attempting PhD Math Exams: 18

Total number failing PhD Math Exams: 0

Total number of students attempting PhD Statistics Exams: 14

Total number failing PhD Statistics Exams: 0

### 3. What was learned from the assessment?

For the PhD in Statistics, the GPC verified that the requirements that (i) students take 3 credits of Stat 689: Doctoral Reading and Research prior to written comprehensive exam, and (ii) changes made to the written exam component structure several years ago continue to result in very high success rates within each cohort of Statistics PhD students. The changes in the exam structure were primarily modifying the exam to include questions related to the readings in Stat 689, reading and critiquing two new research papers in the student's research area, and performing a comprehensive data analysis problem that includes a written report. These exam components provide a good assessment and better reflect whether a student is prepared to perform independent doctoral research in Statistics.

In past years, the Mathematics PhD with an emphasis in mathematics education encouraged students to take the Reals-Complex exam for the content component of a trio of comprehensive exams. In the previous assessment period, it was determined that Reals/Complex is not the most appropriate exam for this program because the content is not aligned with the research area of these students. . The three

doctoral graduates during the current assessment period successfully completed alternate Ph.D. mathematics exams, and evidence confirms the wisdom of this change.

#### **4. How did you respond to the assessment results?**

For the PhD in Statistics, our response is to continue to use our current exam and defense procedures given the success we are enjoying in our completion rate for PhDs and providing current PhD students with a path to success.

Moving forward, the Ph.D. Mathematics with an emphasis in Mathematics Education will maintain the standard of content rigor in terms of completing doctoral-level coursework, but will use a written comprehensive examination in mathematics content that better reflects the needs of future mathematics education researchers and educators. The other two components of the examination (Mathematics Education and Educational Research) will continue to consist of narrative examinations with a writing period of one week.