## Marquette University Learning Assessment Plan

### Mathematics, Statistics, and Computer Sciences

**Program:** Mathematical Statistics and Computer Science  
**Degree:** Ph.D.  
**Date Submitted:** June 16, 2006

<table>
<thead>
<tr>
<th>Program Learning Outcomes Students will be able to:</th>
<th>Performance Indicators</th>
<th>Measures</th>
<th>Use of the Information</th>
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</table>
| 1. Apply advanced concepts in mathematics or statistics to solve theoretical or applied problems. | Uses appropriate theory or techniques to solve problems. | Measured by Doctoral Examination Rubric applied to the preliminary examination, and dissertation rubric item D.1 [C]  
*Doctoral Examination:*
  For each candidate, preliminary examination subcommittee chairs will submit subcommittee mean scores for individual Doctoral Examination Rubric items C.1-C.7.  
*[D] Dissertation:*
  The Dissertation Committee will assess the dissertation using the Doctoral Dissertation Rubric.  
*The Graduate Committee Chair will collect individual candidate performance data from preliminary examination subcommittee chairs and dissertation directors. These measures will be aggregated to form a single mean score for reporting purposes, with the frequency of below average scores noted for detecting items of concern. The individual and aggregated will be employed during graduate program review by the Graduate Committee. Determinations will be shared with the Executive Committee. After initial formal assessment experience is gained, assessment results will likely be included in the department’s graduate program annual report.* | |
| 2. Conduct original research that results in a major written scholarly work in mathematics or statistics | *Clearly states a research question and its importance.*  
*Cites relevant research literature.*  
*Places original results within the landscape of the technical literature in their research field.*  
*All or part of the written scholarly work would be acceptable for publication by a major journal in the research field.* | Employing Measure [D]. | Employs similar collection, compilation, review and dissemination guidelines as outcome 1. |
| 3. Integrate information from multiple sources to create original technical summaries. | *Places information from multiple sources within a framework, adopting a common terminology and notation.* | Employing Measure [D]. | Employs similar collection, compilation, review and dissemination guidelines as outcome 1 |
| 4. Demonstrate general abilities appropriate for teaching college-level mathematics or statistics courses | *Displays an understanding and appreciation for the interconnectedness of the technical literature directly related to dissertation research field. | *Creates and executes a lesson plan for a college-level mathematics or statistics course audience.  
*Properly paces the execution of the lesson plan.  
*Integrates appropriate lesson-specific visuals with the presentation. | Assessment will be done in the department's Teaching / Learning Seminar required of all department graduate assistants or by classroom visitation  
[E]: Lesson Plan: A written lesson plan for a college-level mathematics or statistics course audience will be assessed by an observer using the Lesson Plan Rubric.  
[F]: Presentations: Presentations of sample lectures or classroom management exercises for college-level mathematics or statistics courses given in the department’s Teaching / Learning Seminar (or a classroom lecture) will be assessed by an observer using the department Presentation Rating Instrument. |
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