The Master’s Comprehensive/Doctoral Preliminary Examination

This document describes the policies and procedures for the Master’s Comprehensive/Doctoral Preliminary (MCDP) examination in the Measurement, Statistics and Evaluation (EDMS) program in the Human Development and Quantitative Methodology (HDQM) department. The statements in this document are subject to future revision but as of the date of acceptance by the EDMS faculty represent the official rules and regulations regarding the examination for EDMS.

Objectives

The overarching goals of the new MCDP examination are twofold. First, given the nature of proposed changes to the core curriculum of the EDMS program (i.e., from 5 core classes to 4 restructured core classes), it is essential to align the examination with these restructured courses and their modified content. Second, the new examination would provide students graduating with a Master’s degree from EDMS the opportunity to 1) demonstrate their knowledge in terms of basic statistical and assessment procedures and methods—in other words, the content; and to 2) exhibit their data analytic capabilities that have been accrued from taking the core courses. The newly created examination evaluates both of these objectives by testing both declarative and procedural knowledge, respectively.

Passing the MCDP examination, as defined below, is mandatory to fulfill the degree requirements for Master’s students or advance to the Doctoral Comprehensive examination. Failure to pass this assessment leads to termination from the program.

Implementation Timeline

The MCDP examination has two components: 1) an in-class, timed declarative knowledge portion, and 2) a timed take-home procedural knowledge portion. The new MCDP examination will be implemented, and takes the place of the former Master’s Comprehensive examination, starting in the Spring 2016 semester.

As soon as possible upon completion of the four core statistics and measurement courses, EDMS students are required to sit for the exam. The exam is typically administered once per semester usually within the first few weeks. The exam consists of 4 questions, one each from the four core courses: 1) EDMS 646: General Linear Models I, 2) EDMS 651: General Linear Models II, 3) EDMS 623: Applied Measurement: Issues and Practices, and 4) EDMS 647: Research Design and Evaluation Methods.
The questions are written using a published topics list corresponding to each core course. Three faculty members sitting on the exam committee submit questions comprising the pool of potential final questions. Finalizing questions is done iteratively through peer review. Refinement of content by checking with recent instructors of the core courses, revision if necessary, and checking for grammatical errors are standard procedural activities. Solutions to exam questions emphasizing the important ideas are generated for later scoring and published at the end of the semester.

Students will take the declarative knowledge exam in one 2-hour block from 9am-11am in the CoE computer laboratory on the announced examination date. Students are allowed the use of an approved online calculator to assist in answering the questions; however, no other aids – including crib sheets, books, or notes – can be used. Students are expected to word-process answers at assigned computers in a lab-setting and supplement their answers to questions by providing graphs, equations, formulae, etc., on loose-leaf paper provided by the exam proctor. Students will email their solutions directly to a designated administrative staff or faculty member who will de-identify and collate the exams to be evaluated.

Students will have 24 hours to take the procedural knowledge exam. This part of the exam will begin at 3pm on the announced examination date (the same day as the declarative knowledge exam) and student solutions are due no later than 3pm the following day. Exam questions, with directions, will be emailed to each student where upon receiving this email, the student will verify that he or she has indeed received the examination by replying to the email. For this component, students are allowed to use any resource at their disposal (e.g., books, internet) with the exception of discussing the exam with any other individual (including, but not limited to, other students or faculty members). Students will email their solutions in .pdf format directly to a designated administrative staff or faculty member who will de-identify and collate the exams to be evaluated.

The procedural knowledge examination questions will be comprised of integrated research questions based on empirical or simulated data or methods implemented in stand-alone packages such as power analysis. The research questions would elicit students’ reasoning and encourage the integration of results from their own statistical analyses, the rationale behind utilizing the analyses, and the interpretations that they draw from them. The questions would be related to the 4 core courses. The research questions are open-ended in the sense that different statistical methods could be applied to solve them. As applicable, students are asked to provide a response that consists of two components:

1. A data analysis plan that outlines the strategy for analysis and brief rationales for each of the steps in relation to the data structure. The rationales could be anchored by asking the students to address certain specific aspects of the data (e.g., missing data, multiple forms, measurement error). This plan is analogous to the Method section of a manuscript.

2. A report that describes the results from the investigation and addresses both solutions to foreseen problems as described in the strategic outline constructed in a) as well as solutions to unforeseen problems that arose during the analysis. This portion of the response is analogous to the Results section of a manuscript.
There is no minimum page length required for the procedural exam, but the write-up should be sufficiently detailed so that 1) a reader could reproduce the analysis, and 2) all of the integrated research questions are thoroughly addressed.

Both the declarative and procedural exams are blinded and subsequently graded by all three examination committee members. Grades are collated and discussed by the examination committee and a final analysis is shared with the Program Chair, who would disseminate the final decisions to the examinees.

**Evaluation of Examination**

Students are required to demonstrate minimum competence for each of the two components comprising the MCDP exam. This appraisal is implemented using holistic evaluations of the work products (described in more detail below) submitted for each of the exam components.

Assessment of student performance is conducted by the Examination Committee of the EDMS program. All three members of the Examination Committee will evaluate each exam component for each student with a two-thirds majority outcome (pass or fail). The in-class declarative knowledge examination and the take-home procedural examination will be evaluated separately, but both components must receive a passing grade in order for the student to have successfully passed the MCDP examination.

For the declarative component of the examination, the evaluation of each question will follow a holistic scoring rubric on a 0-4 scale. Students would need to score 2 or greater on three of the four questions and have an average score greater than or equal to 2 to pass this component of the exam. For the procedural component of the examination, the evaluation will follow a holistic scoring rubric on a 0-4 scale. Students would need to score 2 or greater to pass this component of the exam. For either component, there would be no partial passing of the exam. If either of the two criteria above is not met for the declarative part or if the single criteria is not met for the procedural part, then the student fails that exam component and must retake that portion of the exam the next time it is offered. To clarify, the ratings of at least two of the three Exam Committee members must meet the aforementioned criteria in order for a student to pass a given portion of the exam. (That is, ratings are not averaged over the three committee members.)

If a student fails one or both of the components, he or she will be allowed a single retake to successfully pass the examination. Should the student fail during the second attempt, the student will be terminated from the Master’s or Doctoral program.

The following actions remain the prerogative of the Examination Committee at all times:

1. The committee may ask for additional evidence documenting the claim for primary responsibility for the work; and
2. The committee may ask for clarification regarding the nature and extent of the work.