

**Research Methods and Statistics
Program
MA and PhD Degrees**

**Student Handbook
2015-2016**



UNIVERSITY *of*
DENVER

MORGRIDGE COLLEGE OF EDUCATION

Background

The University of Denver Morgridge College of Education *Student Handbook* provides prospective and admitted students with policies and procedures to assist them as they progress through the requirements of MCE degrees. In addition to this handbook, the student should also refer to the University of Denver Graduate Policies and Procedures found in the Graduate Bulletin available at: <http://bulletin.du.edu/graduate/gradpolicy/> and the MCE Policies and Procedures found here: <http://morgridge.du.edu/handbooks-forms/mce-policies-procedures/>

In some cases, college and university policies take precedence over the regulations of the *Student Handbook*. It is the student's responsibility to read and understand University, College, and program norms relating to the degree programs, and to complete program and degree requirements in a timely fashion.

The University of Denver reserves the right to make changes in the regulations, courses, rules, fees or other changes in this handbook without advance notice.

Inquiries concerning programs in the MCE should be directed to the Morgridge Office of Admissions, 1999 E Evans Ave., Denver, CO 80208-1700; Phone 303-871-2509 and edinfo@du.edu. Current students refer to faculty/staff contacts listed within this handbook.

The University of Denver (Colorado Seminary) is an Equal Opportunity Institution. It is the policy of the University not to discriminate in the admission of students, in the provision of services, or in employment, on the basis of race, color, religion, sex, national origin, age, marital or veteran status, sexual orientation, or physical or mental disability.

Inquiries concerning allegations of discrimination based on any of the above matters may be referred to the University of Denver Affirmative Action Office, 2020 E. Evans Ave., Room 104, Denver, CO 80208-4840, 303-871-2307, or the U.S. Department of Education, Office of Civil Rights, 1244 Speer Blvd., Denver, CO 80204.

Introduction

Welcome to graduate studies in Research Methods and Statistics (RMS)! The goal of the RMS MA and PhD degrees is to enhance the development and use of research in education and the social and health sciences. Our goals as faculty are to equip you with cutting-edge research skills, creative educational vision, social responsibility, and sufficient experience in application of your skills and knowledge to achieve mastery. We are committed to shaping a safe, sustainable, democratic, and just world and believe that high quality research is one approach to doing this. We are pleased to have you join us in this venture.

RMS Faculty

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In Part I of this handbook, a complete list of faculty associated with the RMS program is provided.

Location

The faculty and staff offices for the RMS Program are located in Ruffatto Hall, home of the Morgridge College of Education, 1999 E. Evans Ave, Denver, CO. Many, but not all of the classes will be held in Ruffatto Hall. There is limited visitor parking in lots near the building. For parking information, consult <https://www.parking.du.edu/>

Contents

PART I: OVERVIEW.....	5
PART II: RMS PROGRAM REQUIREMENTS.....	11
PART III: COLLEGE AND UNIVERSITY OFFICES, PERSONNEL, AND RESOURCES.....	20
PART IV: PROFESSIONAL ASSOCIATIONS.....	22
PART V: COMMUNICATION CHANNELS.....	22
APPENDIX A: RMS Master’s Course Work Plan.....	23
APPENDIX B: RMS Doctoral Course Work Plan.....	25
APPENDIX C: RMS Doctoral Course Work Plan (Institutional Research).....	27
APPENDIX D: RMS Master’s Student Annual Review Form.....	31
APPENDIX E: RMS Doctoral Student Annual Review Form.....	35
APPENDIX F: Practicum Agreement.....	38
APPENDIX G: Practicum Feedback.....	41

Part I: OVERVIEW

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Accreditation

All degrees at the University of Denver are accredited through the Higher Learning Commission of the North Central Association of Colleges and Schools.

Program Overview

The education and social and sciences fields have a growing need for professionals with strong skills in research design, statistics, qualitative and mixed methods, and data analysis. The Research Methods and Statistics Program (RMS) provides the courses and experiences necessary to conduct and supervise effective social science research. The program is individually planned around students' backgrounds and career goals. Most students prepare for positions that require consulting, research, the development of measurement instruments, policy-making, and teaching. Small seminars, independent projects, and a practicum offer opportunities for an individualized and well-rounded program.

Our goal is to equip you with cutting-edge research skills, a creative educational vision, social responsibility, and sufficient experience in application of your skills and knowledge to achieve mastery. Graduates with RMS degrees hold professional positions in testing and program evaluation companies, non-profit organizations, universities, school districts, and state and service agencies, among others. Admission to the master's program requires a BA or BS degree. Admission to the doctoral program requires a Master's degree.

Core Program Content

The RMS Program embraces a holistic and comprehensive view of quantitative and qualitative research methods and the importance of mixed methods designs. Foundations include quantitative and qualitative research, measurement, statistics, mixed methods, and program evaluation. Research methods include classical quantitative methods as well as qualitative approaches. Students can elect to emphasize evaluation or a content area within or outside of education as a minor. All students conduct original research during their studies and are encouraged to present and/or publish their work. Practicum experiences also are encouraged in diverse sites, including school systems, educational research agencies, mental health agencies, and businesses.

Institutional Research Concentration

The RMS concentration in Institutional Research, available to PhD students, is targeted towards professionals with career goals in institutional research in applied settings including higher education, K-12 schools, non-profits, government settings, and business. Foundational coursework will equip Institutional Research students with strong quantitative, qualitative, and mixed research methods skills. Students will specialize in higher education or library information science and take institutional research content knowledge courses in management, business intelligence, and public policy.

Unique Program Features

The RMS program is one of seven programs offered within the Morgridge College of Education. Students may opt to take cognate courses from programs within or outside of the Morgridge

College of Education. RMS students take classes with students in programs from across the College.

Three features of the RMS Program at DU distinguish it as a strong graduate program:

- We have an outstanding faculty. Professors are not only noted in their fields but also demonstrate a deep commitment to students' academic and personal growth. While our professors set high standards for students, they also individualize requirements to meet each student's needs and goals.
- We have outstanding students from a variety of backgrounds. A wide range of experiences, creative ideas, sincere dedication to research, and a sense of humor are some of the characteristics of people in our program. We enjoy each other's genuine cooperation, encouragement, and inspiration.
- The student-teacher ratio in most of our classes is between 10:1 and 20:1. These small class sizes make it possible to develop meaningful connections, engage in ongoing dialogue about topics of interest, form study groups, and give advice. Personal and professional friendships form and continue long past graduation.

These features contribute to an outstanding educational experience. Professors make themselves readily available for consultation, students support and assist one another, and small class sizes result in rich interaction among students and faculty.

Program Learning Outcomes

The broad learning outcomes of RMS are as follows. Students will:

- Acquire a general knowledge of research methods and program evaluation, and advanced knowledge of psychometrics and statistics;
- Think critically about research;
- Engage in research serving professional and local communities; and
- Understand ethics as they apply to research

RMS outcomes relate to the MCE mission in advancing scholarship via practice and encouraging critical thought.

Evaluation of learning outcomes is based on multiple sources: (1) Course grades, (2) Student annual review, (3) Comprehensive exams, (4) Practicum and other research products, (5) Dissertations, (6) MCE surveys of continuing and graduating students, (7) RMS alumni survey, (8) course evaluations, and/or (9) faculty/student discussions. Learning outcomes along with assessment criteria and a synopsis of the process for reviewing data are listed below.

MA Assessment of Student Learning Outcomes

Student Learning Outcome	Where will assessment take place (courses, exit interviews)?	What student work is being assessed (exams, papers, dissertations)?	How is acceptable performance determined (rubric, other criteria for performance, exam score)?
1. Students will design research projects with faculty members and community partners using knowledge of the strengths and limitations of diverse modes of inquiry.	Course Project	RMS 4930 Final Project (Study Design)	MA Program Assessment Rubric (Coursework)
	Practicum	Practicum Report	Practicum Supervisor Feedback Report
2. Students will create and evaluate quantitative and/or qualitative instruments/protocols.	Thesis	Masters Thesis	Oral Defense Rubric
	Course Project	RMS 4921 Final project (Construction of Pilot Measure)	MA Program Assessment Rubric (Coursework)
	Course Project	RMS 4941 Final Project (Research Approach)	MA Program Assessment Rubric (Coursework)
3. Students will communicate research design and methods in writing according to APA format and orally.	Course Project	RMS 4941 Final Project (Research Approach)	MA Program Assessment Rubric (Coursework)
	Course Project	RMS 4930 Final Project (Study Design Assignment)	MA Program Assessment Rubric (Coursework)
	Comprehensive Examination	Comprehensive Examination Paper	Comprehensive Examination Rubric
	Thesis	Masters Thesis	Oral defense rubric

4. Students will apply research ethics and adhere to an ethical code of conduct when engaging with professional and local communities.	Course Examination	RMS 4952 CITI Examination	MA Program Assessment Rubric (Coursework)
	Course Project	Ethical Dilemmas Project	MA Program Assessment Rubric (Coursework)
	Practicum	Practicum Report	Practicum Supervisor Feedback Report

Doctoral Assessment of Student Learning Outcomes

Student Learning Outcome	Where will assessment take place (courses, exit interviews)?	What student work is being assessed (exams, papers, dissertations)?	How is acceptable performance determined (rubric, other criteria for performance, exam score)?
1. Students will be able to apply statistical techniques to model, think critically, and design their own studies.	Course Project	RMS 4914 Structural Equation Modeling Final Paper	PhD Program Assessment Rubric (Coursework)
	Course Project	RMS 4915 Hierarchical Linear Modeling Final Paper	PhD Program Assessment Rubric (Coursework)
2. Students will create and evaluate quantitative and qualitative instruments/protocols using psychometric models and conceptual approaches.	Course Project	RMS 4942 Qualitative Research Project	PhD Program Assessment Rubric (Coursework)
	Practicum/Internship	Practicum Supervisor Feedback Report	Practicum Supervisor Feedback Report
	Course Project	RMS 4922 Item Response Theory Template	PhD Program Assessment Rubric (Coursework)

3. Students will communicate research design and methods with clarity both orally and in writing according to APA format.	Course Project	RMS 4951 Mixed Methods Study Design	PhD Program Assessment Rubric (Coursework)
	Dissertation	PhD Oral Defense Examination	Oral Defense Examination Rubric
	Course Project	RMS 4946 Dissertation Pilot Study	PhD Program Assessment Rubric (Coursework)
	Course Project	RMS 4930 Study Design Project	PhD Program Assessment Rubric (Coursework)
4. Students will be able to explain both quantitative and qualitative approaches and integrate design, analysis, and interpretation.	Course Project	RMS 4951 Mixed Methods Study	PhD Program Assessment Rubric (Coursework)
	Comprehensive Examination	PhD Oral Defense Evaluation Rubric	Oral Defense Examination Rubric
5. Students will demonstrate professionalism by employing research ethics and adhering to an ethical code of conduct when engaging with professional and local communities.	Course Examination	RMS 4952 CITI Examination	PhD Program Assessment Rubric (Coursework)
	Research Practicum	Practicum Supervisor Feedback Report	Practicum Supervisor Feedback Report
	Course Project	RMS 4952 Ethical Dilemmas Project	PhD Program Assessment Rubric (Coursework)

Part II: RMS PROGRAM REQUIREMENTS

Academic Advisor

When a student is admitted, an academic advisor is assigned with consideration of the areas of interest indicated in the student's application materials. A student may be assigned to a faculty member who is not in the student's area of interest, due to the need to balance the number of student advisees across the faculty. However, all faculty are prepared to advise students in their selection of courses, filing of the Coursework Plan, and other program requirements. Students are responsible for knowing and understanding the contents of this Handbook, as well as the policies outlined in the Graduate Bulletin available at: <http://bulletin.du.edu/graduate/gradpolicy/> and the MCE Policies and Procedures found here: <http://morgridge.du.edu/handbooks-forms/mce-policies-procedures/>

The academic advisor works with the student to complete and approve the coursework plan, select electives, and submit necessary documentation for transfer credits or other coursework-related documentation. The academic advisor also guides the student in development of the student's professional goals. All of the faculty are available for career guidance. However, only the academic advisor should give the student academic program approval.

It is the responsibility of the student to make appointments to meet with his or her advisor at least once per academic year.

First year students should meet with the academic advisor during the first quarter of study.

Students should come prepared to their academic advising appointments, bringing any relevant forms and an unofficial transcript.

Faculty members generally work on nine-month contracts during the regular academic year. During the summer, students may need to work with the Program Coordinator if their advisor is not on campus.

Cognate Requirement

All **MA** students must complete a cognate or minor study in a field outside their major area of study, determined in conjunction with the student's major coursework advisor. The credits required to fill this obligation vary depending upon the student's prior graduate level course work (if any) in the minor field.

All **PhD** students must complete a cognate or minor study in a field outside their major area of study, determined in conjunction with the student's major coursework advisor. The credits required to fill this obligation vary depending upon the student's prior graduate level course work (if any) in the minor field. The cognate should add to the student's breadth or depth of

knowledge in evaluation, research methods, and statistics. Graduate-level classes, chosen in consultation with an advisor, can be taken from (1) the RMS Program, (2) other programs within the Morgridge College of Education, or (3) other departments at University of Denver.

Practicum

Evaluation Practicum (MA)

All MA students complete an evaluation practicum with a community partner after taking sufficient preparatory courses in the program. The goal of the practicum is to provide a field experience in aspects of designing, conducting, and presenting an evaluation. The student will present their findings to RMS faculty and their community partner. On occasions, the student will submit the paper written from the practicum for presentation at a regional or national conference.

In the quarter prior to beginning their practicum the student meets with their advisor to determine a project to pursue and select a setting/partner for their practicum. Then the student registers for RMS 4980, Practicum in Research. The evaluation practicum typically takes up to 100 hours to complete over a six-month period. Once the project has begun, students meet with their advisor at least monthly to discuss their progress. At the end of the project, the community partner completes the Practicum Supervisor Feedback Form.

In recent years students have undertaken their evaluation practicums with the following partners: Denver Museum of Nature and Science, Open World Learning, the Denver Zoo, Hudson Gardens, Colorado School of Public Health, and the Aurora Research Institute.

Research Practicum (PhD)

All PhD students complete a research practicum with a community partner after taking sufficient preparatory courses in the program. The goal of the practicum is to provide field experience in designing, conducting, and presenting research. The student will submit the paper written from the practicum for presentation at a regional or national conference and/or publication in a peer-reviewed journal.

In the quarter prior to their practicum, the student meets with their advisor to determine a project to pursue and a setting/partner for their practicum. Then the student registers for RMS 4980, Practicum in Research. The research practicum typically takes up to 100 hours to complete over a six-month period. Once the project has begun, students meet with their advisor at least monthly to discuss their progress. At the end of the project, the community partner completes the Practicum Supervisor Feedback Form.

In recent years students have undertaken their research practicums with the following partners: University of Denver's Office of Institutional Research, University of Denver's Division

of Natural Sciences & Mathematics, Denver Public Schools, SalusWorld International, and the Aurora Research Institute. Students have presented their work at the following national conferences: the American Educational Research Association, the American Evaluation Association, and the International Objective Measurement Conference. One student published her work in *Intervention: Journal of Mental Health and Psychosocial Support in Conflict Affected Areas*.

Ongoing Research Projects

In addition to the practicum, doctoral students should engage in multiple research projects during their program. Thus, in addition to completing the research practicum, students are strongly encouraged to work with RMS faculty on independent research prior to initiating work on their dissertation.

Comprehensive Examination or Thesis Options

Students must pass a comprehensive examination near or at the end of the coursework. It is offered three times a year, in fall, spring, and summer quarters. There is no fee for taking Comprehensive Exams; however, students must register for the exam. Information on when exams are offered and how to register can be found at <http://morgridge.du.edu/programs/research-methods-and-statistics/> MA students may choose to *either* take the Comprehensive Exam *or* complete a Master's Thesis. MA students are *not* obligated to do both a thesis and comprehensive exam.

Master's Thesis or Doctoral Dissertation

Master's candidates have the option to develop a thesis proposal and present it to a committee. Doctoral students must complete a dissertation. Students should refer to the Graduate Studies dissertation instructions found at: <http://www.du.edu/media/documents/graduates/formatting.pdf>

Institutional Review Board (IRB)

Researchers who involve human participants in their research must follow specific guidelines as a condition for using the data provided by these participants. If the student's proposal involves human participants, the student will need to submit an application to the Institutional Review Board (IRB). In consultation with his or her doctoral director, the student will prepare an IRB application and submit it to the University's Office of Research and Sponsored Programs (ORSP). The IRB judges the application on issues related to protection of participants from physical and emotional distress and not on theoretical or methodological grounds. The study cannot go forward until IRB approval is received. In many cases, minor revisions to the study will be necessary to gain approval. The IRB meets monthly, so the student should plan on a time lag of several weeks between submitting the proposal for approval and the beginning of data collection. Collecting data prior to receiving IRB approval is considered sufficient grounds for halting a research study. In general, students should not submit their IRB application before

the proposal defense, as any major changes in the proposal would necessitate re-applying to the IRB. IRB procedures, requirements, and application materials can be viewed/downloaded at: <http://www.du.edu/orsp/irb.html>.

A short, multiple choice test is required with the IRB application that is taken on line. According to DU's ORSP, "education on the protection of human research participants is required for all investigators conducting research involving human subjects. To access DU's on-line "Education Program for the Protection of Human Subjects in Research" go to: <http://www.du.edu/orsp/instructions.html>. Please call 303-871-4052 with any questions you may have about the testing process for IRB at DU.

Student Annual Review

Annually, the RMS faculty asks each student to take an active role in program planning by providing a self-evaluation of (a) their progress in meeting educational goals, (b) their strengths and weaknesses as a developing research methodologist, and (c) how the RMS program can be of better assistance in helping students to achieve their educational goals.

- Students will receive an invitation to complete a self-evaluation form online. This form is available in the Appendices.
- After the submission and depending on the reported data, most students will be asked to make an appointment with the Program Coordinator, to hold a 20-minute joint planning meeting with the program faculty by the end of May.

The purpose of the meeting is to discuss progress during the past year and develop directions for work in the next year. When coming to the meeting please bring the following documents:

- Most recent curriculum vitae
- Unofficial DU transcript
- Other documents you would like to discuss

Degree Requirements

RMS Master's Degree

The program in RMS at the MA level focuses on research design, statistics, and evaluation. Students can also take thesis credits. A blank course work plan is available as Appendix A, and on the MCE website at <http://morgridge.du.edu/programs/research-methods-and-statistics/>. Master's students will take courses in RMS and complete either a comprehensive examination or a thesis. Students are also required to take courses in related studies or a cognate field. The *minimum* credit requirement for the program is 45-quarter hours, though students with no quantitative background must take a minimum of 47-quarter hours. Students may transfer a maximum of 10-quarter hours above the bachelor's degree with approval during the *first*

quarter of enrollment. Courses marked with an asterisk (*) are required unless previously taken, and all waived courses must be approved by an advisor.

Refer to the RMS MA coursework plan in the appendices for more current and detailed information about course selection.

RMS Doctor of Philosophy Degree

All students are required to complete a Coursework Plan with their advisors. A blank coursework plan is available as Appendix B, or Appendix C (Institutional Research concentration), and on the MCE website at <http://morgridge.du.edu/programs/research-methods-and-statistics/>. Doctoral students will take courses in research methods, statistics, and dissertation research. Students are also required to take courses in related studies or a cognate field. The minimum credit requirement for the program is 90-quarter hours.

Suggested Course Sequencing

The recommended sequence for **Statistics** courses is as follows:

1. RMS 4910 or equivalent (offered Autumn quarter, generally also in Summer)
2. RMS 4911, RMS 4912 (offered Autumn & Winter, respectively)
3. RMS 4913 (offered Spring quarter)
4. RMS 4914 (offered Winter quarter)
5. RMS 4915 (offered alternate years)
6. RMS 4916 (offered alternate years)

The recommended sequence for **Measurement** courses is as follows:

1. RMS 4921 (offered Autumn quarter)
2. RMS 4922 (offered Winter every second year), RMS 4929 (offered occasionally)

The recommended sequence **Research** courses is as follows

1. RMS 4930, RMS 4931, RMS 4941 (offered Autumn, Winter, and Spring quarters)
2. RMS 4942 (offered Autumn and Winter quarters)
3. RMS 4946 (offered Spring quarter)
4. RMS 4951 (offered each year)
5. RMS 4947 (offered alternate years)

Waiver Process for Required Research Courses

If you have taken a similar course at the graduate level or if you can demonstrate content knowledge through coursework or work experience you may be eligible to waive a course. The chart below explains the waiver process for required research courses.

You **may** be able to waive a course **IF**

-You have taken a similar course at graduate level within 5 years with a grade of B or better.

OR

-You can demonstrate content knowledge through coursework or work experience.



Take the syllabus from the comparable course and any other relevant material to the **instructor of the course you want to waive** for that faculty member to review—e.g., contact the RMS program chair to identify who the instructor is (Kathy Green for RMS 4910, 4920, and 4930 and Nick Cutforth for RMS 4941).



If approved, complete a waiver form with signatures of the **instructor of the course you want to waive** and your advisor.

If **not** approved, you may elect to attempt to test out of the course by taking a written test on the course content. If you score above 80%, you will not be required to take the course. You may **retake** the test **once**.



Student files waiver with Academic Services Associate.



If you do not pass the test on the first or second attempt, you must register for and take the course.

If you pass the test, complete the *Graduate Course Substitution or Waiver Approval Form* and file it with the Administrative Services Associate for your program.

Waiver Process for Other Courses

You may wish to waive courses that are required by your program that you have taken in prior coursework or for which you have content knowledge through work experience. The process to waive courses other than required research courses is: First, consult your advisor to discuss courses you think you can waive. Your advisor will direct you to the instructor of the course you wish to waive or waive the course him/herself depending on program protocols. Second, you will consult with the instructor of the course you wish to waive if advised to do so, bringing the syllabi from a course you think is comparable or other relevant materials. If that faculty member agrees that you can waive the course, complete a waiver form signed by the instructor of the course you wish to waive and signed by your advisor. Give the waiver form to your advisor and keep a copy for yourself. You will indicate on your coursework plan that the course was waived. It is the student's responsibility to ensure the waiver form and coursework plan are also both filed the Academic Services Associate (ASA). The ASA will retain the waiver form along with the updated coursework plan. If the instructor of the course you wish to waive does not agree that you can waive the course, you must register for the course. For more information regarding course waivers, please refer to the MCE Policies and Procedures: <http://morgridge.du.edu/handbooks-forms/mce-policies-procedures/>

Test-Out Exams

A student may attempt to test-out of the following courses:

RMS 4900 Educational Research and Measurement 4 credit hrs

RMS 4910 Introductory Statistics 5 credit hrs

RMS 4920 Educational Measurement 3 credit hrs

RMS 4930 Empirical Research Methods 3 credit hrs

RMS 4941 Introduction to Qualitative Research 4 credit hrs

The credit hours associated with the class you successfully test out of MUST be utilized for other, more advanced research courses. You should consult with the instructor of the course you wish to test out of if you have any questions or need advice about whether or not you should take the course or test out.

Test-out exams are scheduled on a case-by-case basis by contacting the faculty member in charge of the course. All exams are closed book and no notes, materials, or other persons may be used or consulted during the exam.

Doctoral Comprehensive Examination

Purpose

The purpose of the PhD comprehensive examination is to allow students to demonstrate ability to integrate the information and knowledge of research, measurement, and statistical theory and practice acquired during the degree program. Registration deadlines are on the MCE website.

Format

The examination will be taken over a two-day time period with a different set of questions for each day. The student is expected to manage the time in order to give equal attention to each question and to include time to proofread the responses. Some questions will be required, and the student will have the opportunity to choose questions from a list of additional options.

Evaluation Criteria

Accuracy in addressing the questions

It is important to address the questions that are asked, without omitting parts of a question and without answering questions that were not asked.

Skill in defining issues

Each of the questions presented will relate to a particular problem area in Research Methods and Statistics. The student must be able to identify the particular issue or issues to be addressed.

Clarity in stating positions

As an expert in Research Methods and Statistics the student will often be required to take what seems to be the best and/or most responsible position in terms of the evidence available at that time. In writing responses in this examination the student should consider whether a reader will be able to easily identify the point of view being presented.

Competence in applying information

As a scholar in the field it is expected that the student be able to demonstrate that opinions are well informed by reference, if needed, to experts in the field.

Clarity in writing

All responses should be expressed in clear and direct prose. Are the responses logical and coherent? Poorly stated and illogically presented responses obscure rather than illuminate. Can a reader follow the structure of the argument? Is grammar used correctly?

Overall adequacy

The student must address the issues, reveal insight into problems, and document their position adequately.

Examples of Comprehensive Exam Questions for Doctoral Students

1. Differentiate among experimental, quasi-experimental, and correlational research designs in terms of control of extraneous variables and the validity of drawing causal inferences. Illustrate each design with an example.
2. Show how the internal consistency reliability coefficient (e.g., Cronbach's alpha) is derived from the assumptions of true-score theory.
3. Compare and contrast multiple regression, canonical correlation, ANCOVA, and factor analysis in relation to the following:
 - a. Type of research question(s) appropriately addressed by each technique
 - b. Numbers and types of variables appropriate for the technique
 - c. Important assumptions (if any)
 - d. Important mathematical similarities and differences
4. Compare and contrast the objectives, strengths and weaknesses of qualitative methods (e.g., ethnography) versus quantitative methods (e.g., survey) in conducting empirical research on educational issues. Be sure to consider issues of reliability, generalizability, validity, ethics, and practicality in your answer. Describe situations where one method or the other may be most appropriate.

Doctoral Dissertation Policies

Completion of a project of original research leading to the dissertation is a major requirement of the doctoral program. The MCE determines the amount of credit allowed for research and work on the dissertation. Specific guidelines and instructions for the dissertation can be found at <http://www.du.edu/currentstudents/graduates/graduationinformation.html> under Graduation and Oral Defense Information, where you will find step-by-step instructions on how to submit the thesis/dissertation.

Students must pass their comprehensive exam prior to defending their dissertation proposal.

In addition, students should refer to the MCE's *Completing the Doctoral Dissertation: Guidelines for Students* available on the MCE website at:

<http://morgridge.du.edu/programs/research-methods-and-statistics/>

Once the student has successfully completed all required courses and the required comprehensive exam, the student must follow the MCE Dissertation Credit Policy and DU Continuous Enrollment Policies.

Master's Comprehensive Examination

Purpose

The purpose of the master's comprehensive examination is to allow students to demonstrate ability to integrate the information and knowledge of research, measurement, and evaluation theory and practice acquired during the degree program. Registration deadlines are on the MCE website.

Format

The examination will be taken over a four-hour time period on one day. The student is expected to manage the time in order to give equal attention to each of a choice of questions and to include time to proofread the responses. Some questions will be required, and the student will have the opportunity to choose questions from a list of additional options. The evaluation criteria may be found above under Doctoral Comprehensive Examination evaluation criteria.

Examples of Comprehensive Exam Questions for Master's Students

1. Compare and contrast two evaluation theorists in terms of their views regarding sources of evidence, stakeholder involvement, and setting of goals.
2. Differentiate Type I error, Type II error, power, statistical significance, and effect size.

PART III: COLLEGE AND UNIVERSITY OFFICES, PERSONNEL, AND RESOURCES

Student Associations

Research Methods and Statistics Student Association (RMSSA)

The RMSSA's mission is to serve students enrolled in the RMS program at MCE. RMSSA shall:

- A. Represent RMS students in all policy-making activities affecting program and student interests.
- B. Provide students studying in the RMS program at the Morgridge College of Education (MCE) an opportunity to engage in collegial and social relationships with faculty, peers, and experts in the field.
- C. Encourage and promote professional, intellectual, and social interaction between students and faculty within the RMS program
- D. Provide career assistance and mentorship to current RMS students and alumni.
- E. Enhance student educational experience through supporting research and conference activities
- F. Represent the Research Methods and Statistics program and student on the College of Education Student Association and the Graduate Student Association Council (GSAC).

There shall be two types of membership: Membership shall be through election, where students enrolled in the RMS program at the Morgridge College of Education are voting members and may hold office; RMS Alumni and faculty are non-voting members and may not hold office.

Morgridge College of Education Office of Admissions (MOA) and Academic Services Associate

To meet the requirements of your degree or certificate program, and to receive information about financial assistance, students are encouraged to work closely with MCE staff, especially the Academic Services Associate and the Morgridge Office of Admissions (MOA). MCE staff can provide information and assistance from initial inquiry through graduation. For questions related to financial assistance and scholarships, students are encouraged to contact the Office of Budget and Finance, located in room 317 of Katherine A. Ruffatto Hall, 303-871-6291. For questions related to academic requirements, including the comprehensive exam and graduation application, contact the RMS Academic Services Associate Karen LeVelle, 242 Ruffatto Hall, 303-871-3791.

The Academic Services Associate can provide essential assistance in submitting forms related to coursework and in understanding college and university academic policies. However, the faculty member assigned as your Academic Advisor should be the primary resource for decisions related to choice of courses.

Part IV: PROFESSIONAL ASSOCIATIONS

All RMS students are encouraged to join at least one professional association. Membership in these organizations provides the student with an opportunity to become familiar with, begin networking, and become part of a professional community. The following organizations are suggestions; there are many others for students to consider.

- American Educational Research Association (AERA): also join divisions and SIGs (Special Interest Groups) www.aera.net
- American Evaluation Association (AEA) www.eval.org
- American Psychological Association (APA) www.apa.org
- National Council on Measurement in Education (NCME) www.ncme.org
- The American Association for Teaching and Curriculum (AATC) (<http://aatchome.org/>). A special scholarship has been set up by DU alumni to send one current student to the conference (see <http://morgridge.du.edu/financial-aid/grants-scholarships/uhrmacher-scholar-alumni-group/>).

Part V: COMMUNICATION CHANNELS

RMSProgram-L Distributed Email List

All accepted and enrolled students in the RMS Program should immediately subscribe to the *rmsprogram-l* distributed email list, using their preferred email address. *You must include your name in order to be subscribed to this list.* *rmsprogram-l* is used to deliver official RMS Program notices, job and internship opportunities, and discussion of matters among students and faculty. Students may go to <https://listserv.du.edu/mailman/listinfo/rmsprogram-l> in order to subscribe.

APPENDIX A: RMS Master’s Course Work Plan (2015-2016)

**MORGRIDGE COLLEGE OF EDUCATION
Research Methods and Statistics - MA
Course Work Plan 2015-2016**

Student: _____ ID #: _____

Phone #: _____ Email: _____

I. Morgridge College of Education Requirements (required)	Course #	Expected Qtr. Of Completion	Credit Hours
Psychometric Theory	RMS 4921		3
II. Program Requirements			
A. Research Design			
Empirical Research Methods	RMS 4930		3
Survey and Design Analysis	RMS 4931		3
Meta-Analysis in Social Sciences Research	RMS 4932		3
Introduction to Qualitative Research	RMS 4941		4
Research Ethics	RMS 4952		1
B. Statistics			
Introductory Statistics	RMS 4910		5
Correlation and Regression	RMS 4911		4
C. Evaluation (6 credits required, *required)			
*Program Evaluation Theory	RMS 4960		3
(Choose one of the following)			
Program Development and Evaluation	CFSP 4363		3
International Project Analysis	INTS 4333		3
Cost Benefit Analysis	PPOL 4500		4
School Admin: Program Dev and Evaluation or	ADMN 4820		3
Program Development and Evaluation	CNP 4730		3
Program Development and Assessment	RMS 4962		3
D. Practicum			
Practicum in Research	RMS 4980		3
E. Cognate (Minimum 5 hours)			
III. Thesis Option (Minimum 10 hours)	RMS 4995		

Summary of Degree Requirements			
	Credits Required (does not include courses waived)	Credits Transferred in	Credits Completed
I. Morgridge College of Education Requirements	3		
II. Program Requirements			
A. <i>Research Design</i>	14		
B. <i>Statistics</i>	9		
C. <i>Evaluation</i>	6		
D. <i>Practicum</i>	3		
E. <i>Cognate</i>	<i>Minimum 5</i>		
III. Thesis Option	10-15		
Total	Minimum 45 hours		

Student's Signature _____

Date: _____

Advisor's Signature _____

Date: _____

APPENDIX B: RMS Doctoral Course Work Plan (2015-2016)

**Morgridge College of Education
Research Methods and Statistics – Ph.D.
Course Work Plan 2015-2016**

Student: _____

Student #: _____

Phone #: _____

E-mail: _____

I. Morgridge College of Education Requirements	Course #	Expected Qtr. of Completion	Credit Hours
A. Research (*All Required)			
*Empirical Research Methods	RMS 4930		3
*Introduction to Qualitative Research	RMS 4941		4
*Dissertation Research (Minimum 10 credits, must register for at least 1 hr per Fall, Winter & Spring after most coursework is completed until Graduation)	RMS 5995		
II. Program Requirements	Course #	Expected Qtr. of Completion	Credit Hours
A. Measurement (*All required)			
*Psychometric Theory	RMS 4921		3
*Item Response Theory	RMS 4922		3
*Meta Analysis in Social Sciences Research	RMS 4932		3
B. Research Methods (* required)			
*Qualitative Data Collection and Analysis	RMS 4942		4
*Mixed Method Research Design	RMS 4951		4
*Research Ethics	RMS 4952		1
*Program Evaluation Theory	RMS 4960		3
Structural Foundations of Research in Social Sciences	RMS 4940		3
Choose at least one of the following:			
Survey and Design Analysis	RMS 4931		3
Community Based Research	RMS 4945		4
Advanced Qualitative Research	RMS 4946		4
Arts-Based Research	RMS 4947		3
Topics in Research Design	RMS 4959		
C. Statistics (* required)	Course #	Expected Qtr. of Completion	Credit Hours
*Correlation & Regression	RMS 4911		4

*Analysis of Variance	RMS 4912 (or PSYC 4330)		5
*Multivariate Analysis	RMS 4913		5
*Structural Equation Modeling	RMS 4914 (or PSYC 4350)		5
*Hierarchical Linear Modeling	RMS 4915		4
*Latent Growth Curve Modeling	RMS 4916		4
Topics in Statistics	RMS 4919		
III. Practicum (* required)			
*Practicum in Research	RMS 4980		3
IV. Cognate (Minimum 20 credit hours)	Course #	Expected Date of Completion	Credit Hours

Summary of Degree Requirements			
	Credits Required (does not include courses waived)	Credits Transferred in	Credits Completed
I. Morgridge College of Education Requirements			
<i>A. Research</i>	17		
II. Program Requirements			
<i>A. Measurement</i>	9		
<i>B. Research Methods</i>	15		
<i>C. Statistics</i>	27		
III. Practicum	3		
IV. Cognate	20		
Total	Minimum 90 hours		

Student's Signature _____

Date: _____

Advisor's Signature _____

Date: _____

APPENDIX C: RMS Doctoral Course Work Plan, Institutional Research (2015-2016)

**Morgridge College of Education
Research Methods and Statistics – Ph.D.
Institutional Research Concentration
Course Work Plan 2015-2016**

Student: _____

Student #: _____

Phone #: _____

E-mail: _____

I. Morgridge College of Education Requirements	Course #	Expected Qtr. of Completion	Credit Hours
A. Research (*all required)			
*Introductory Statistics	RMS 4910		5
*Empirical Research Methods	RMS 4930		3
*Introduction to Qualitative Research	RMS 4941		4
*Dissertation Research (must register for at least 1 hr per Fall, Winter & Spring after most coursework is completed until Graduation)	RMS 5995		10
II. Program Requirements	Course #	Expected Qtr. of Completion	Credit Hours
A. Management (select at least one course)			
Business Design	MGMT 4280		4
Performance and Reward Systems	MGMT 4345		4
Organizational Dynamics	MGMT 4620		4
Strategic Management	MGMT 4690		4
Strategic Human Resources	MGMT 4630		4
Managing Strategic Alliances	MGMT 4790		4
B. Measurement (* required)			
* Psychometric Theory	RMS 4921		3
*Meta Analysis in Social Sciences Research	RMS 4932		3
Item Response Theory	RMS 4922		3
C. Research Methods (* required)			
*Survey and Design Analysis	RMS 4931		3
*Mixed Method Research Design	RMS 4951		4
*Research Ethics	RMS 4952		1
*Program Evaluation Theory	RMS 4960		3
Structural Foundations of Research in the Social Sciences	RMS 4940		3

Qualitative Data Collection and Analysis	RMS 4942		4
Community Based Research	RMS 4945		4
Advanced Qualitative Research	RMS 4946		4
Arts Based Research	RMS 4947		3
Topics in Research Design	RMS 4959		
D. Statistics (* required)			
*Correlation & Regression	RMS 4911		4
*Analysis of Variance	RMS 4912 (or PSYC 4330)		5
*Multivariate Analysis	RMS 4913		5
Topics in Statistics	RMS 4919		
Choose at least one of the following:			
Structural Equation Modeling	RMS 4914 (or PSYC 4350)		5
Hierarchical Linear Modeling	RMS 4915		4
Latent Growth Curve Modeling	RMS 4916		4
III. Practicum (* required)			
*Practicum in Research	RMS 4980		3
IV. Cognate Requirements— Specialization area			
Business Information & Analytics/GIS Courses (choose at least one)			
Business Intelligence, Data Warehousing, Corporate Decision Making and Leadership	INFO 4100		4
Data Warehousing	INFO 4240		4
Project Management	INFO 4280		4
Predictive Analytics	INFO 4300		4
Geographic Information Systems Modeling	GEOG 3110		4
Advanced Geographic Information Systems	GEOG 3130		4
Public Policy Courses (choose at least one)			
American Systems of Public Policy Process	PPOL 4100		4
Microeconomic Principles for Public Policy	PPOL 4200		4
Quantitative Analysis for Public Policy (offered in Spring Quarter)	PPOL 4300		4
Analytical and Critical Skills	PPOL 4400		4
Great Issue Forums	PPOL 4501 (or) PPOL 4502		2
Special Topics in Public Policy	PPOL 4701		4

Specialization Area Courses <i>(Choose option below; Higher Education <or> Library and Information Science)</i>			

SPECIALIZATION AREA COURSES

Specialization in Higher Education (21 credits minimum; *Required Courses)

Course Name	Course Number	Course Credits
*Organization & Governance of Higher Education	HED 4220	3
*Public Policy in Higher Education	HED 4212	3
*Financing Higher Education	HED 4221	3
*History of American Higher Education	HED 4214	3
*Current Issues in Higher Education	HED 4211	3
Inclusive Excellence in Organizations	HED 4284	3
Issues of Access & Opportunity	HED 4246	3
Retention, Persistence, and Student Success in Postsecondary Settings	HED 4247	3

Specialization in Library and Information Science (19 credits minimum; *Required Courses)

Course Name	Course Number	Course Credits
*Organization of Information	LIS 4010	4
*User-Centered Design	LIS 4102	3
*Digitization	LIS 4820	3
*Metadata Architectures	LIS 4404	3
*Web Content Management	LIS 4206	3
*Digital Objects and Collections	LIS 4804	3
Government Publications	LIS 4362	3
Archival Appraisal	LIS 4801	3
Academic Libraries	LIS 4700	3

Summary of Degree Requirements			
	Credits Required	Credits Transferred in	Credits Completed
I. Morgridge College of Education Requirements			
A. Research	22		
II. Division/Program Requirements			
A. Management	4		
B. Measurement	6		
C. Research Methods	11		
D. Statistics	18		
III. Practicum	3		
IV. Cognate Requirement: Specialization in Higher Education or Library and Information Science	25-27		
Total	Minimum 90 hours		

Student's Signature _____

Date: _____

Advisor's Signature _____

Date: _____

APPENDIX D: RMS Master's Student Annual Review Form

Date _____

Student Name _____

Name of Coursework Advisor _____

Occupation (if applicable) _____

Employment Status _____

1. a) Were you admitted on a probationary basis? Yes ___ No ___

b) If "yes", have the probation conditions been met? Yes ___ No ___

c) If "no", when do you plan to do so? _____

2. a) Have you filed your Coursework Plan? Yes ___ No ___

b) Have there any changes to your Coursework Plan in the past year?

Yes ___ No ___ (If "yes" please attach its most recent version).

3. The program requires that students conduct a research practicum prior to graduation. Have you met your research practicum requirement?

Yes ___ No ___ Partial _____

a) If "yes" or "partial," indicate research activity in which you participated.

b) If "yes" and the research activity was presented or published, indicate where you presented or published the research, date of presentation, title of presentation using APA style.

c) If "no," indicate a plan for completing this requirement.

4. Have you taken your comprehensive examination? Yes ___ No ___

If "yes," year and quarter _____

If "no," when do you plan to take it? _____

5. Do you plan to do a Master's thesis? Yes _____ No _____

a. If "yes," has your thesis proposal been approved? Yes _____ No _____

i. If "yes," list the Chairperson and the proposed title

_____ (chair)

_____ (title)

b. If "no," do you have a proposal chairperson? Yes _____ No _____

i. If "yes," list name of chairperson and topic

_____ (chair)

_____ (topic)

6. If you have completed your coursework and plan to do a Master's thesis, are you registered for Continuous Enrollment and Thesis credits?

Yes _____ No _____ N/A _____

If no, please go to the MCE Office of Admissions and Enrollment Services to register.

7. If you have completed your course work and plan to do a Master's thesis, have you submitted a timeline for completing your thesis? Yes _____ No _____

8. List professional organizations of which you are a member.

9. List all presentations you have made at meetings or conventions of professional associations since entering the program - or that have been accepted for presentation or publication using APA style.

10. List all community engagement activities in which you participated during the year (e.g., program evaluation, volunteer, paid/unpaid consulting).
11. Describe your strengths as a developing research methodologist.
12. Describe areas that you find challenging and/or need to work on.
13. If appropriate list any personal and professional issues that may impact your progress in our program (i.e., job change, family changes, health, etc.)

Professional Work Competency Scale

Instructions: Please rate yourself as candidly as possible on each item using the scale provided and also provide an example or two to support your rating.

1. Initiative – initiates activities when appropriate; doesn’t wait to be asked or told when to begin tasks.

Strongly disagree 1 2 3 4 5 6 Strongly agree

2. Dependability – follows through on tasks; completes assignments in accordance with stated parameters and/or constraints.

Strongly disagree 1 2 3 4 5 6 Strongly agree

3. Time management / work organization – organizes work and manages time effectively; completes assignments in a timely manner

Strongly disagree 1 2 3 4 5 6 Strongly agree

4. Respect for human diversity – exhibits awareness of and sensitivity to racial, cultural, socioeconomic, religious, gender-based, sexual orientation and other human differences; seeks out further understanding and skills needed to work with diverse populations.

Strongly disagree 1 2 3 4 5 6 Strongly agree

5. Oral communication – express self orally in a clear and organized manner

Strongly disagree 1 2 3 4 5 6 Strongly agree

6. Written communication – expresses self in writing in a clear and organized manner

Strongly disagree 1 2 3 4 5 6 Strongly agree

7. Attending/listening skills – listens attentively; attends to important communications

Strongly disagree 1 2 3 4 5 6 Strongly agree

8. Interpersonal relations – relates effectively with peer students, faculty, and colleagues

Strongly disagree 1 2 3 4 5 6 Strongly agree

9. Adaptability / flexibility – adapts effectively to demands of situation; exhibits flexibility in face of change.

Strongly disagree 1 2 3 4 5 6 Strongly agree

10. Ethical responsibility

Strongly disagree 1 2 3 4 5 6 Strongly agree

APPENDIX E: RMS Doctoral Student Annual Review Form

Date _____

Student Name _____

Your Course Work Advisor's Name _____

Occupation (if applicable) _____

Employment Status _____

1. a) Were you admitted on a probational basis? Yes ___ No ___

b) If "yes", have the probation conditions been met? Yes _____ No _____

c) If "no", when do you plan to do so? _____

2. a) Have you filed your Course Work Plan? Yes _____ No _____

b) Was there any change to your filed Course Work Plan in the past year?

Yes ___ No ___ (If "yes" please attach its most recent version).

3. The program requires that students conduct a pre-dissertation research project (the research practicum). Have you met your pre-dissertation research practicum requirement?

Yes _____ No _____ Partial _____

a) If "yes" or "partial," indicate research activity in which you participated.

b) If "yes" and the research activity was presented or published, indicate where you presented or published the research, date of presentation, title of presentation using the APA style.

c) If "no," indicate a plan for completing this requirement.

4. Have you taken your comprehensive examination? Yes _____ No _____

If "yes," year and quarter _____

If "no," when do you plan to take it? _____

5. If you have completed your coursework, are you registered for Continuous Enrollment and Dissertation credits?

Yes _____ No _____ N/A _____

If no, please go to the MCE Office of Admissions and Enrollment Services to register.

6. Has your dissertation proposal been approved? Yes _____ No _____

If "yes," list the Chairperson and the proposed title

_____ (chair)

_____ (title)

If "no," do you have a proposal chairperson? Yes _____ No _____

If "yes," list name of chairperson and topic

_____ (chair)

_____ (topic)

7. If you have completed your course work, have you submitted a timeline for completing your dissertation? Yes _____ No _____

8. List professional organizations of which you are a member.

9. List all presentations you have made at meetings or conventions of professional associations since entering the program - or that have been accepted for presentation or publication using APA style.

10. List all community engagement activities in which you participated during the year (e.g., program evaluation, volunteer, paid/unpaid consulting).

11. Describe your strengths as a developing research methodologist.
12. Describe areas that you find challenging and/or need to work on.
13. If appropriate list any personal and professional issues that may impact your progress in our program (i.e., job change, family changes, health, etc).

APPENDIX F: Practicum Agreement

PRACTICUM AGREEMENT for the Research Methods and Statistics (RMS) program at the Morgridge College of Education, University of Denver

Student Name:	
Program: Research Methods and Statistics (RMS)	
DU Practicum Instructor:	
Quarter/Year:	
Name of the Organization where you will do your Practicum:	
Supervisor at Practicum Organization:	
Supervisor Contact Information:	
Address:	
Telephone:	
Email Address:	
1. Please provide a brief description of the activities or operations of the Practicum Organization:	
2. Please describe your understanding of your responsibilities for this Practicum:	
3. What are your expectations of your participation in the Practicum?	
a. In what kind of activities do you expect to participate at the Practicum Organization?	

b. What do you expect to learn about the work in which the Practicum Organization is engaged?	
c. What concrete skills do you expect to acquire during the Practicum?	
d. What do you expect to contribute to the operations of the Practicum Organization?	
e. Overall, what do you expect to gain from the Practicum experience?	
4. What commitments do you make as you enter into this Practicum?	
a. Hours: how many hours per week will you devote to the Practicum (Note: The total number of hours should be between 24 (minimum) and 120 (maximum) to be covered in one academic quarter)?	
b. Work-Product: what kind of documentation of your learning, skills acquisition, and contribution to the Practicum Organization (e.g., periodic oral and written reports, final written report, etc.) do you commit to providing to:	
i. Your supervisor at the Practicum Organization:	
ii. Your DU Practicum instructor:	
Signature of student	Date

Signature of DU Instructor	Date
Signature of Practicum Organization Supervisor	Date

APPENDIX G: Practicum Feedback

Practicum Feedback

The Research Methods and Statistics program at the Morgridge College of Education thanks you for acting as supervisor for our student. Below, we would like to ask some questions that may help our student assess his/her skills as a graduate from our program.

Based on your interaction during the practicum, how would you rate our graduate skills in the following areas (if not appropriate or unable to rate, please leave blank):

	1	2	3	4
Interpersonal skills (if appropriate)	Poor			Great
Communication skills	Poor			Great
Work ethic	Poor			Great
Initiative	Poor			Great
Analytical skills	Poor			Great
Flexibility/adaptability	Poor			Great
Problem-solving skills	Poor			Great
Technical skills	Poor			Great
Ability to plan and manage a project	Poor			Great
Ability to create new knowledge	Poor			Great
General understanding of your program evaluation need	Poor			Great

Please feel free to add any comments that you think may be useful for our graduate

Please add any comments that may help our program improve the practicum experience for both the student and for your organization

Thank you