

# RESEARCH & MEASUREMENT (EDRM)

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## **EDRM 520 - Introduction to Testing and Evaluation (3 Credits)**

The construction and use of teacher-made tests; descriptive statistics, measurement error, norms, and interpretation of scores; types of standardized instruments for use in elementary and secondary schools.

## **EDRM 690 - Independent Study (1-3 Credits)**

## **EDRM 700 - Introduction to Research in Education (3 Credits)**

Concepts and methods of conducting research in education. Admission to graduate standing.

## **EDRM 710 - Educational Statistics I (3 Credits)**

Introductory course in statistics for graduate students in education and the other social sciences. Central tendency and variability, normal distribution, simple correlation and regression, z and t tests for one and two samples, and the chi-square test. Use of statistical software.

## **EDRM 711 - Educational Statistics II (3 Credits)**

Continuation of Educational Statistics I. Inference for one and two samples, factorial designs, repeated measures designs, and multiple regression. Use of statistical software.

**Prerequisites:** EDRM 710.

## **EDRM 712 - Nonparametric Statistics (3 Credits)**

Applied nonparametric statistics in education and the social sciences. Distribution-free inference for repeated measures and factorial designs; logistic regression and log-linear analysis. Use of statistical software.

**Prerequisites:** EDRM 711.

## **EDRM 715 - Mixed Methods Research (3 Credits)**

The study and practice of mixed methods research. The integration of qualitative and quantitative approaches and methods in research practices. Emphasis on educational research and settings with consideration of other social science fields as needed.

**Prerequisites:** An initial course in or experience with quantitative research (example - EDRM 705 or EDRM 710) and qualitative research (example - EDFI 731).

## **EDRM 718 - Research and the Statistical Packages (1-3 Credits)**

Advanced use of available statistical packages in educational research. Content varies; topics and credit announced in advance. May be repeated for up to six hours of credit. May be repeated for up to 6 hours of credit.

**Prerequisites:** EDRM 710 and EDRM 711.

## **EDRM 720 - Educational Measurement (3 Credits)**

The history of educational and psychological measurement. Consideration of concepts such as validity and reliability of educational and psychological measures and the rationale of the development and use of instruments for educational purposes.

## **EDRM 721 - Constructing Cognitive Instruments (3 Credits)**

The rationale, construction, use, and appraisal of achievement tests as tools of educational evaluation and research.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

## **EDRM 722 - Constructing Non-Cognitive Instruments (3 Credits)**

Consideration and the construction of educational and psychological tests and measurement instruments.

**Prerequisites:** EDRM 721.

## **EDRM 723 - Classroom Assessment Methods (3 Credits)**

Emphasis in the linkages between curriculum, instruction, and assessment, and the development of assessments for learning outcomes. Methods include observations, interviewing, performance assessments, portfolios, and classroom tests.

## **EDRM 724 - Design and Analysis of Educational Surveys (3 Credits)**

Topics in educational surveys: design of questionnaires, sampling, data collection, treatment of non-responses, survey interviewing, randomized response techniques, data tabulation, and graphical presentation. Use of statistical software.

## **EDRM 728 - Technical Aspects of Tests and Measurements (3 Credits)**

Statistical techniques and theoretical concepts involved in educational and psychological measurement. Analysis and interpretation of test data, equating of equivalent forms, latent trait theories and models, multiple matrix sampling, and issues related to criterion-referenced testing.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

## **EDRM 736 - Program Evaluation (3 Credits)**

Methods of designing and implementing evaluations of social and educational programs.

**Prerequisites:** EDRM 700 and EDRM 710.

## **EDRM 737 - Internship in Research (3 Credits)**

Supervised research experience in a school, state agency, department or bureau of the University, or cooperating institution.

## **EDRM 789 - Principles and Applications of Structural Equation Modeling (3 Credits)**

Theories and applications of covariance structure modeling, including reliability analysis, confirmatory factor analysis, and path analysis with observed and latent variables.

**Prerequisites:** EDRM 711 or equivalent and EDRM 721 or equivalent.

## **EDRM 799 - Thesis Preparation (1-9 Credits)**

## **EDRM 800 - Grants Administration (3 Credits)**

Analysis of grant and contract functions in government agencies; proposal writing; legal and fiscal requirements of grants administration.

**Cross-listed course:** POLI 755

## **EDRM 801 - Principles and Applications of Educational Research (3 Credits)**

Concepts and application of designing research in education.

**Prerequisites:** EDRM 700 or equivalent.

## **EDRM 810 - Design and Analysis of Experiments (3 Credits)**

Emphasis on the development of an understanding of the role of inferential statistics in educational experimentation, a working knowledge of the common tests in statistical analysis, and the student's ability to design and execute experiments involving application of the statistical tests.

**Prerequisites:** EDRM 711 or the equivalent.

## **EDRM 812 - Hierarchical Linear Modeling (3 Credits)**

Advanced quantitative methods course in multilevel data analysis. Covers theoretical grounding, applications in the social sciences, and model building.

**Prerequisites:** EDRM 711.

**EDRM 816 - Correlational and Multivariate Methods (3 Credits)**

Advanced statistical applications including partial and multiple correlational methods, multiple regression, multivariate analysis of variance, discriminant analysis, and canonical correlation. Use of statistical software.

**Prerequisites:** EDRM 711.

**EDRM 828 - Item Response Theory (3 Credits)**

Statistical models for item response theory, Rasch and other models for binary and polytomous data, and applications. Use of statistical software.

**Prerequisites:** EDRM 711 or PSYC 710 or STAT 701 or STAT 704.

**Cross-listed course:** STAT 778

**EDRM 840 - Advanced Qualitative Inquiry in Education (3 Credits)**

Theory, methodology and practice of qualitative research in educational settings. Students will conduct research in applied settings using qualitative data collection methods including observation, interviews, focus groups, and document analysis.

**Prerequisites:** EDFI 731.

**EDRM 842 - Educational Biography (3 Credits)**

Examination of biography as a form of educational research and scholarship.

**EDRM 878 - Seminar in Research Techniques (1-3 Credits)**

Theoretical and empirical issues in qualitative and/or quantitative methods in educational research. Content varies; topics and credit announced in advance. May be repeated for up to 12 hours of credit.

**EDRM 889 - Advanced Principles and Application of Latent Variable Modeling (3 Credits)**

Study of advanced concepts, principles, techniques, and issues in structural equation modeling (SEM) and the latent variable framework.

**Prerequisites:** EDRM 789 or similar course.

**EDRM 890 - Independent Study (3 Credits)**

**EDRM 897 - Dissertation Seminar in Education (3 Credits)**

Topics involved with major issues in the planning and conducting of significant research in education. Several faculty members participate; a forum is provided in which candidates may present for analysis original research designs primarily related to their dissertations.

**EDRM 899 - Dissertation Preparation (1-12 Credits)**