

The Educational Research, Measurement, and Evaluation (ERME) program is designed to prepare students for research and academic careers in education, social sciences and human services.

Degree Programs

Master of Education (M.Ed.)

The master's degree curriculum includes coursework in research design, statistics, classroom assessment, large scale data collection, program evaluation, and education policy.

Doctoral Program (Ph.D.)

The doctoral curriculum emphasizes research methodology and data analysis and includes advanced coursework in research design, statistical methods, and testing and assessment as well as seminars in statistical and measurement topics.

Additional Academic Opportunities

Undergraduate Courses

ERME offers three undergraduate courses, ideal for students who are interested in educational research and perhaps a graduate degree in our program. The following courses are available at the undergraduate level: ED060 Classroom Assessment, PY216 Research Methods, and ED307 Teaching and Education Reform.

LSOE students may find these courses particularly useful when taking Undergraduate Inquiry Seminars that introduce classroom-based inquiry skills and using classrooms as research sites by posing critical questions about pupil learning.

BC 5th Year Program

The 5th Year Program in the Lynch School of Education offers qualified Boston College students a unique opportunity to begin graduate study during their undergraduate years. Students have an opportunity to plan undergraduate studies in a way that allows them to begin graduate work in the senior year. This may make it possible for students to graduate with a Bachelor's degree and a Master's degree in five years, with some summer study.

BC Juniors interested in the 5th Year program should meet with Jeannette Romeo, Director of LSOE Graduate Student Services (Campion 135) and schedule a meeting with Dr. Larry Ludlow, ERME Department Chair (ludlow@bc.edu).

Course Descriptions

ED 460 Interpretation and Evaluation of Research

This course will improve a students' understanding of the quantitative research literature in education and psychology. It concentrates on developing the conceptual foundations of quantitative research and the practical analytic skills needed by a competent reader and user of research reports. Topics address purpose statements, hypotheses, sampling techniques, sample sizes and power, instrument development, internal and external validity, and typical quantitative research designs. Exercises emphasize the critical evaluation of published research. Each student will develop a research proposal.

ED 462 Assessment and Test Construction

This course addresses the major issues of educational assessment, with emphasis on the characteristics, administration, scoring, and interpretation of both formal and informal assessments, including but not limited to tests of achievement. All forms of assessment are examined including observation, portfolios, performance tasks, and paper-and-pencil tests, including standardized tests. Basic techniques of test construction, item writing, and analysis are included. Standardized norm-referenced tests and statewide testing programs are also examined.

ED 466 Models of Curriculum and Program Evaluation

This is an intensive study of the leading models of program and curriculum evaluation. The strengths, weaknesses, and applications for various types of curriculum and program evaluation will be stressed. Each evaluation model will be examined in terms of the purpose, key emphasis, the role of the evaluator, relationship to objectives, relationship to decision making, criteria, and design.

ED 467 Practical Aspects of Curriculum and Program Evaluation

Prerequisite: ED 466 or consent of instructor

This course will cover the basic steps in planning and carrying out a program evaluation. Topics covered will include identification and selection of measurable objectives, choice of criteria, instruments, use of various scores, common problems, out-of-level testing, analysis of data, interpretation and reporting of data, and budgeting. Standards for program evaluation will also be covered.

ED 468 Introductory Statistics

An introduction to descriptive and inferential statistics. In particular, students will learn descriptive statistics, graphical and numerical representation of information; measures of location, dispersion, position, and dependence, and exploratory data analysis. Also, students will be introduced to inferential statistics, point and interval estimation, tests of statistical hypotheses, inferences involving one or more populations, as well as ordinary least squares regression and chi-square analyses. Provides computer instruction on PC and Mac platforms and in the SPSS statistical package.

ED 469 Intermediate Statistics

Prerequisite: ED/PY 468 or its equivalent, and computing skills

Topics and computer exercises address tests of means, partial and part correlations, multiple regression, analysis of variance with planned and post hoc comparisons, analysis of covariance, repeated measures analysis, elements of experimental design, and power analysis.

ED 560 Seminar on Issues in Testing and Assessment

Offered Biennially; Recommended: ED/PY 462 and ED/PY 469

Topics vary each time the course is offered.

ED 561 Evaluation and Public Policy

Prerequisite: ED 466 or consent of instructor; Offered Biennially

Topics vary each time the course is offered.

ED 565 Large-Scale Assessment: Procedures and Practice

Examines measurement concepts and data collection procedures in the context of large-scale (e.g., district, state, national, and international) assessment. Considers technical, operation, and political issues from the perspective of measurement concepts. Using examples from TIMSS, PIRLS, and NCLB, covers framework development, test development, questionnaire development, sampling, data collection, analysis, and reporting.

ED 664 Design of Experiments

Prerequisite: ED/PY 667; Offered Biennially

Covers topics in the underlying logic of experimental and quasi-experimental designs, including cluster randomized and multi-site trials, full factorial and fractional factorial designs, interactions and simple effects, analysis of covariance, repeated measures designs, and power analysis for single level and nested trials.

ED 667 General Linear Models

Prerequisite: ED/PY 469

Addresses the construction, interpretation, and application of linear statistical models. Specifically, lectures and computer exercises will cover ordinary least squares regression models; matrix algebra operations; parameter estimation techniques; missing data options; power transformations; exploratory versus confirmatory model building; sources of multicollinearity; diagnostic residual analysis techniques; partial and semipartial correlations; variance partitioning procedures; dummy, effect, and orthogonal coding procedures; analysis of covariance; and logistic regression.

ED 668 Multivariate Statistical Analysis

Prerequisite: ED/PY 667; Offered Biennially

Provides lectures, examples, and student analyses that address multiple group discriminant analysis, classification procedures, principal components and common factor analysis, and multivariate analysis of variance.

ED 669 Psychometric Theory

Prerequisite: ED/PY 462 and ED/PY 667; Offered Biennially

Presents a study of theoretical concepts, statistical models, and practical applications in educational and psychological measurement. General topics include the history of measurement, Thurstone and Guttman scales, classical true-score theory, and item response theory. Specific topics include principles of Rasch measurement, parameter estimation procedures, fit statistics, item banking, and computer adaptive testing.

ED 724 Practicum in Educational Technology: Technology-Enhanced Assessment

Prerequisite: ED/PY 462 and ED/PY 667; Offered Biennially

Computers are widely available in schools and are increasingly used for large-scale testing programs. This course examines cutting-edge applications of computer-based technologies to the technology of testing and assessment. Among the topics explored are validity issues specific to computer-based testing; accessibility, universal design, and computer-based testing; computer adaptive testing; simulation-based and multimedia tests; and computer scoring of writing. The course encourages students to explore ways in which computer-based technologies can be used to enhance assessment and solve challenges to current approaches to student assessment.

ED 851 Qualitative Research Methods

Introduces the foundations and techniques of carrying out qualitative research. Topics include philosophical underpinnings, planning for a qualitative research project, negotiating entry, ethics of conducting research, data collection and analysis, and writing/presenting qualitative research. Requires a research project involving participant observation and/or interviewing.

ED 862 Survey Methods in Educational and Social Research

Offered Biennially

Covers the design of surveys and assessments, including sampling theory, instrument development, and administering surveys, including training survey administrators, quality control, data coding, data reduction, statistical analysis and inference, report writing, and presentation of results. Also covers practical issues, such as using available sampling frames and minimizing non-response.

ED 941 Dissertation Seminar in Educational Research, Measurement and Evaluation

Prerequisite: Advanced Statistics and Research Design. Permission of instructor.

This two-semester seminar is designed to assist doctoral candidates in the preparation of a formal doctoral dissertation proposal. All aspects of dissertation development will be discussed (e.g., problem development, human subjects review, final defense). Students will develop and present a series of draft proposals for faculty and student reaction. Depending on the circumstances of the student, an acceptable pre-proposal (Intent) or full dissertation proposal is required for completion of the course.