

EDUCATIONAL PSYCHOLOGY (EDPSY)

EDPSY 502: Data Analysis Workshop

3 Credits

This course is designed to increase conceptual understanding of basic statistics and proficiency with analytic techniques. EDPSY 502 Data Analysis Workshop (3) This course is designed for students with a desire to increase their conceptual understanding of basic statistics and their proficiency with analytic techniques using educational data sets. Through this course students will increase their knowledge of research methods and analytic strategies. An emphasis is placed on the connections among research design, research questions, analysis strategy, and interpretation of findings to supplement their statistics coursework. The course will be held in a computer lab so students can access a statistical analysis package. This course draws on students' knowledge and skills from research methods and statistics courses. In this elective workshop-style class, students are provided a conceptual review of quantitative statistical analysis. In each session hands-on activities and practice with provided educational data sets allow students to learn techniques and interpretation of conducted analysis. Through this course students become more comfortable with analyzing quantitative data sets. The data sets used in the course include segments of large scale educational data sets as well as smaller data sets that include relevant variables for education or educational psychology. These data sets are either portions of actual sets, or fictitious sets with variables labeled with relevant constructs. There are no general data sets included in the course. Each session starts with a teacher-directed review, followed by a model analysis, and guided practice. Students then practice analyzing and interpreting with provided example data sets. Students exit the course with a set of models to reference in their future work.

Prerequisite: EDPSY406 and EDPSY475

EDPSY 505: Statistical Applications in Educational Research

3 Credits

Statistical techniques for education research including multiple regression, one-way, two-way, and repeated measures ANOVA. Use computer software for statistical analyses.

Prerequisite: EDPSY406

EDPSY 506: Advanced Techniques for Analyzing Educational Experiments

3 Credits

Analytical and experimental control considerations for designs involving nested and/or crossed subjects. Analysis of variance and multiple comparisons via computers. EDPSY 506 Advanced Techniques for Analyzing Educational Experiments (3) The main purpose of this course is to introduce a variety of experimental designs that are used in education and the social and behavioral sciences. Experimental designs involve plans for choosing experimental units, assigning treatments, and collecting measurements. The goal is to design informative studies and carry out powerful analyses to answer research questions within practical constraints. For each design, appropriate statistical analyses including the mathematical model, underlying assumptions, computational routines, and the statistical tests of hypotheses will be covered.

Relative advantages and disadvantages of the different designs will be discussed. The course will provide hands-on opportunities to practice data analysis and result interpretation. In light of likely differences in students' academic backgrounds, the course emphasizes conceptual understanding rather than mathematics of the statistical methods.

Prerequisite: EDPSY505 or PSYCH400

EDPSY 507: Multivariate Procedures in Educational Research

3 Credits

Introduction to matrix algebra, computer programming, multiple regression analysis, multiple and canonical correlation, multiple discriminant analysis, classification procedures, factor analysis. EDPSY 507 Multivariate Procedures in Educational Research (3) This course covers analytical techniques in the analysis of variable relationships. It focuses on regression-based statistical techniques in explaining or predicting outcome variables from other relevant measured variables. Simple and multiple regression analysis of continuous outcome variables and logistic regression analysis of categorical outcome variables will be discussed along with model diagnostics. Other topics considered include applications of discriminant analysis for classification problems, exploratory factor analysis for data reduction and discovering the number of latent dimensions, and if time permits, cluster analysis for identifying patterns of individual responses. The course will provide hands-on opportunities to practice data analysis and result interpretation. The course emphasizes conceptual understanding rather than mathematics of the statistical methods.

Prerequisite: EDPSY505 or PSYCH400

EDPSY 512: Group Processes in the Classroom

3 Credits

Basic concepts and perspectives in the study of group processes; instructional group interaction; analysis of classroom behavior.

EDPSY 513: Individual and Group Differences

3 Credits

Description, causes, and interpretation of individual variation over the life-span, with application to school and institutional practices.

Prerequisite: EDPSY400 or EDPSY450

EDPSY 515: Foundations of Educational Research

3 Credits/Maximum of 999

Students read the philosophical foundations of education research, study how philosophies influence methodologies, and analyze current educational problems. This course is designed for students entering doctoral programs in the College of Education. Our students are studying to become education researchers within a highly politicized environment. For example, particular definitions of education research and government policies that favor some types of research practices over others provide opportunities for and set limits upon the work of education researchers. Public controversies likewise contribute to challenges faced by education researchers who find their work affirmed or discounted by particular definitions and policies. In order to explore these controversies and to allow students to begin identifying their own "positionality" with regard to research, this course begins with a reading of the history and philosophies of education research (primarily focusing on the United

States). The course goals are: - to identify underlying assumptions of competing forms of social inquiry, each determined to uncover new knowledge; - to bring those assumptions to bear on education research in chosen fields of study; and - to begin to develop one's own positions in order to direct further study and research. Specifically, through instructor facilitation and group discussions, students will come to understand major philosophical perspectives that permeate and drive research methodologies in education: positivism, postpositivism, interpretivism, critical theory, poststructuralism, and pragmatism. These understandings allow students to recognize the methodological assumptions that inform published research studies and to discover how methodologies might inform the research they wish to conduct as students and practitioners. Although the course is not required by any particular doctoral program in the College of Education, it is suggested for students who consider research important to their future careers and who see benefits in exploring the methodological options available.

Cross-listed with: ADTED 515, CI 515, HIED 515

EDPSY 520: Current Issues in Special Education

3 Credits

Explore current issues and research in the field of special education.

Prerequisite: SPLED525

Cross-listed with: SPLED 520

EDPSY 521: Learning and Cognition: Educational Applications

3 Credits

This course focuses on understanding human learning and thinking through examining learning theories and research related to educational psychology.

Prerequisite: EDPSY421

EDPSY 523: Concept Learning and Problem Solving

3-4 Credits/Maximum of 4

Theoretical-empirical trends in concept learning, problem solving, and creativity related to instructional psychology. EDPSY 523 Concept Learning and Problem Solving (3 to 4 per semester/maximum of 4) This course explores how people acquire knowledge of concepts and the nature of that knowledge. Students will also learn about major models of problem solving and issues related to how people solve problems. The two main topics of the course, concept learning and problem solving, are tied together by exploring how the knowledge that one has influences problem solving and how the experiences of problem solving influence the knowledge that is gained. Students are encouraged to apply the topics of this course to their own areas of study through activities such as selecting relevant research articles, development of a research proposal, and applying research findings to new areas.

Prerequisite: EDPSY421 or EDPSY521

EDPSY 524: Theories of Learning and Instruction

3 Credits

Study of major classical theories of learning and recent developments in learning and instructional theory. EDPSY 524 Theories of Learning and Instruction (3) Exploration of major classical and current theories of learning from behaviorism to situated cognition through the reading of

original works, extensive overview chapters, and contemporary empirical research. Course content and readings assume that students have prior knowledge or experience with learning theory.

Prerequisite: EDPSY421 or EDPSY521

EDPSY 525: Cognitive Processes in Learning from Multiple Representations

3 Credits

Multiple external representations (MERs) refer to instructional materials that contain more than one representation for describing or depicting content. Examples are materials that include two or more representations such as verbal text, formulae, diagrams, graphs, animations, and so on. This course will also cover materials that include multiple text documents. Regardless of the specific representational combinations used, acquiring knowledge from these representations requires the learner to both comprehend the individual representations and integrate across them, a demand that students often face, but infrequently achieve. This course will cover the major theoretical frameworks used to understand the cognitive processes required for learning from MERs as well as current research addressing these processes.

EDPSY 526: The Psychology of Reading

3 Credits

Psychological principles underlying the process of reading and comprehending, with application to instruction. EDPSY 526 The Psychology of Reading (3) This course explores the psychological processes of reading including topics such as phonological processing, vocabulary development, and comprehension. Students in this course will complete readings that help them to understand the research foundations for these psychological processes of reading and how these processes can be understood in relation to one another. Throughout the course, students will be encouraged to consider how each topic relates to broader considerations in the field of reading. For example, the class may explore how knowledge of psychological processes can be applied to address questions of beginning reading instruction, second language learning, and text design. A variety of class formats, such as small group discussions and topic presentations, may be used to support these explorations.

Prerequisite: EDPSY421 or EDPSY521

EDPSY 528: Instructional Psychology

3 Credits

Application to instructional design of current developments in research on human development, information processing, learning strategies, memory structures, instructional processes. EDPSY 528 Instructional Psychology (3) The objective of this course deals with psychological research on mental structures and on the relation of these to learning of basic skills and school subjects exhibiting increasing capability for investigating and implementing emerging principles that meet the complex demands of education and instructional practice. The content and requirements of this course will be shifting continually to keep up with these developments. This course relates various phases of instruction to correlated processes engaged by the learner. The readings will be from the journal literature and/or recent textbooks.

Prerequisite: EDPSY421 or EDPSY521

EDPSY 530: Achievement Motivation

3 Credits

Within a seminar format, this course addresses both theoretical and empirical approaches to motivation and other related affective constructs.

Prerequisite: EDPSY421

EDPSY 550: Design and Construction of Psychological Measures

3 Credits

Lecture-practicum involving planning, construction, administration, and analysis of a psychological test; lectures stress construct validity, item analysis, and predictive validity.

Prerequisite: EDPSY450

EDPSY 554: Theories of Psychological Measurement

3 Credits

Basic true-score and error models; their extensions to test reliability and test validity; problems of item analysis and weighting.

Prerequisite: EDPSY450

EDPSY 555: Validity of Assessment Results

3 Credits

Concepts, issues, and methods of validation of educational and psychological assessment including models and approaches to validation, bias, and utility. EDPSY (CI ED) 555 Validity of Assessment Results (3) The goal of this course is to enable the student to acquire a broad perspective on issues and considerations in the process of validating interpretation and uses of tests, scales, assessment procedures, or protocols. Issues of validity are examined from many perspectives including a review of current dominant and alternative validity theories, of known threats to validity, of some advanced specialized statistical techniques; and of test bias, legal issues, psychological/behavioral issues, social/consequential considerations, and philosophical considerations. Additionally, applications are provided through in-depth cross-cultural and historical studies, technical reviews of published commercial tests, and in-depth examinations of controversies.

Prerequisite: EDPSY406 , EDPSY450

Cross-listed with: CIED 555

EDPSY 556: Foundations and Applications of Item Response Theory

3 Credits

Unidimensional models for dichotomously scored and polytomously scored items and their applications in instrument/test development.

Prerequisite: EDPSY450 and EDPSY507

EDPSY 557: Hierarchical Linear Modeling in Educational Research

3 Credits

Statistical techniques for the analysis of multilevel data such as in nested designs or hierarchical data. EDPSY 557 Hierarchical Linear Modeling in Education Research (3) Hierarchical Linear Modeling (HLM) models

are particularly important when analyzing data for school settings. This course is designed as an applied statistics course specifically geared to analyzing data from educational settings and using data sets from educational research. Data collected in these ecological contexts with nested designs, such as students enrolled in classrooms, classrooms in schools, and schools within school districts, must be analyzed carefully as relations between and among variables could change given a particular level (e.g., student-level, classroom-level) for analysis. The topics of this course highlight the importance of studying random versus fixed effects for data collected in multilevel educational research settings. Two-level HLM models, growth-curve models, three-level HLM models, and Hierarchical Generalized Linear Models with binary and ordinal outcomes are the four primary types of models that will be the focus of the class. Students will also learn how to use HLM software to analyze their data given the four types of models. Other topics covered in this class will include: a) centering of independent variables; b) restricted maximum likelihood estimation; c) effect sizes and power analysis; and d) the relevance of educational theory and psychometric analysis in variable selection, and model specification.

Prerequisite: EDPSY506 and EDPSY507

EDPSY 558: Foundations and Applications of Structural Equation Modeling

3 Credits

Model specification, identification, estimation, evaluation, and modification for measurement models, path models, and full structural models. EDPSY 558 Foundations and Applications of Structural Equation Modeling (3) Structural Equation Modeling (SEM) is considered an advanced multivariate statistical tool. It subsumes general linear models such as ANOVA and regression and can model binary, ordinal, or count data like logistic and Poisson regression. SEM is multi-disciplinary and is most widely used in Social and Behavioral sciences. This course covers foundational issues in Structural Equation Modeling. Path analysis, confirmatory factor analysis, and full structural models will be discussed in terms of model specification, identification, estimation, evaluation, and modification. Students will learn how to specify models of theoretical interest, recognize identification problems, perform model estimation and modification using an SEM software of choice, and defend the final model selected. Examples of model fitting will be illustrated in class with the LISREL program. However, students are encouraged to explore other SEM programs that best suit their skills and research interests. A class project involving the application of the newly acquired techniques is required.

Prerequisite: EDPSY406 , EDPSY507 , and STAT 505

EDPSY 559: Foundations of Meta-analysis

3 Credits

Foundations of Meta-analysis covers the application of concepts and principles of meta-analysis to the systematic review of the literature on a topic. It covers how to model effect sizes (e.g., Hedge's g , odds ratio, Fisher's z) in between-subjects, within subjects, meta-regression, and correlation-based meta-analyses. Topics include the design, statistical modeling and analysis, and reporting of meta-analytic studies. Upon completion of the course, students should be able to design and conduct meta-analyses, as well as be informed consumers of meta-analytic reports.

Prerequisite: EDPSY 406; EDPSY 505; HDFS 519; PLSC 502; PPOL 503; PSY 507; STAT 415; STAT 500; STAT 501 Recommended Preparation: It is

advisable to have some experience reviewing the literature, either through formal coursework or research experience.

EDPSY 560: Contemporary Issues in the Evaluation of Educational Programs

3 Credits

Practical and theoretical issues in the planning, execution, and interpretation of program evaluations.

Prerequisite: EDPSY450, EDPSY475

EDPSY 575: Seminar in Educational Psychology

1-6 Credits/Maximum of 6

A seminar dealing with specific topics in educational psychology. Open to advanced students in the behavioral sciences.

EDPSY 576: Research Methods in Teacher Education

3 Credits

A basis in theory, findings from research, research design, and methodologies related to teacher education.

Cross-listed with: C-S 576

EDPSY 578: Contemporary Issues in Interdisciplinary Educational Intervention Sciences

2-3 Credits

Proseminar exploring contemporary issues in the design and evaluation of educational interventions from an interdisciplinary perspective.

Cross-listed with: HDFS 578, PSY 578

EDPSY 589: Mixed Methods in Educational and Social Scientific Research

3 Credits

Within the social sciences, interest in and the use of mixed methods has grown dramatically in the last 10-15 years. Whereas it used to be regarded, at best, as something of an impractical oddity and at worst a paradigmatic contradiction in terms, a mixed methods approach to research has increasingly begun to enter the mainstream of methodological acceptability. This course explores various philosophical, epistemological, disciplinary, and design-related debates in relation to the rapidly expanding use of mixed methodologies in educational and social scientific research. It is intended to give students an overview of different mixed methods research approaches, to help students consider the epistemological and paradigmatic implications of mixed method designs, and to encourage students to think about, design, conduct, and/or critique mixed methods research within educational and other social scientific research. In this graduate seminar, students will read and discuss multiple examples of mixed methods studies while simultaneously examining broader critiques of and commentaries on mixed methodological approaches.

Cross-listed with: EDLDR 589

EDPSY 596: Individual Studies

1-9 Credits/Maximum of 9

Creative projects, including nonthesis research, which are supervised on an individual basis and which fall outside the scope of formal courses.

EDPSY 597: Special Topics

1-9 Credits/Maximum of 9

Formal courses given on a topical or special interest subject which may be offered infrequently.

EDPSY 600: Thesis Research

1-15 Credits/Maximum of 999

No description.

EDPSY 601: Ph.D. Dissertation Full-Time

0 Credits/Maximum of 999

No description.

EDPSY 602: Supervised Experience in College Teaching

1-3 Credits/Maximum of 6

Teaching of Educational Psychology classes under senior faculty supervision.

EDPSY 610: Thesis Research Off Campus

1-15 Credits/Maximum of 999

No description.

EDPSY 611: Ph.D. Dissertation Part-Time

0 Credits/Maximum of 999

No description.