

Quantitative Research Method Courses Offered by Departments Other than GSE

Statistics

Stat 500. Applied Regression and Analysis of Variance. (Fall) Rosenbaum, P.

Prerequisite(s): STAT 102 or 112 or equivalent.

An applied graduate level course in multiple regression and analysis of variance for students who have completed an undergraduate course in basic statistical methods.

Stat 501. Introduction To Nonparametric & LOG-Linear Models (Rosenbaum, P.)

(Offered in every Spring) (Twice per week, TR 12-1:30PM)

Stat 510. Probability (Small, D.) (Offered in the Fall) (Twice a week, MW 10:30-12) (more appropriate for applied social science students than Stat 530, which is more theoretically based.)

Soci 535. Quantitative Methods in Sociology I. (Fall) Allison, P.; Smith, H. Prerequisite: Basic algebra.

Topics covered include the description of social science data, in graphical and non-graphical form; correlation and other forms of association, including cross-tabulation; bivariate regression; an introduction to probability theory; the logic of sampling; the logic of statistical inference and significance tests.

Stat 542. Bayesian Methods and Computation (Jensen, S.; Spring). Prerequisite: STAT 430 or 510 or equivalent or permission of instructor. Sophisticated tools for probability modeling and data analysis from the Bayesian perspective. Hierarchical models, optimization algorithms and Monte Carlo simulation techniques.

Stat 550. Mathematical Statistics (Small, D.)(Offered in Fall 2006) (Twice per week, TR 10:30-12Noon) (Decision theory and statistical optimality criteria, sufficiency, invariance, estimation and hypothesis testing theory, large sample theory, information theory.)

Soci 536. Quantitative Methods in Sociology II. (Spring) Allison, Kohler, Smith.

Prerequisite: SOCI 535 or permission of instructor.

Emphasis on the theory and practice of multiple regression and analysis of variance, with extensions to path analysis and other simultaneous equation methods.

Soci 612. Categorical Data Analysis (Offered every other academic year, not offered in 2006, will be offered in Spring 2007) (Smith, H., Twice per week, TR 9-10:30 AM)

Soci 613. Event History Analysis (Offered every other academic year, offered in Spring 2004 & Fall 2005, not in 2006) (Allison, P., Twice per week, TR 9-10:30AM)

BSTA 652. Categorical Data Analysis (Fall) (Twice per week, MW 9-10:30AM)

BSTA 653. Survival Analysis (Fall) Joffe, M. (Twice per week, TR 12-1:30PM)

Econ 705. Econometrics I: Fundamentals (Fall) (Twice per week, TR 10:30-12NOON)
(Violations of classical linear regression assumptions, nonlinear regression models (including logit, probit, etc.), diagnostic testing, distributed lag models, panel data models, identification, linear simultaneous-equations model.)

Econ 706. Econometrics II: Methods & Models. (Spring) Schorfheide, F. (Twice per week, MW 9-10:30AM) Prerequisite(s): Meeting the department's minimal mathematical requirements; ECON 705 or equivalents. (Analysis in time and frequency domains, state space representations, Kalman filtering, conditional heteroskedasticity, nonlinear and nonparametric methods for time series, integration, co-integration, numerical and simulation techniques.)

Measurement

MKTG 966. Measurement and Data Analysis in Marketing. (Offered in the Spring, Lecture/once per week: W 12-3PM, Bradlow, E.) (covers models for binary, count, and continuous data including contingency table models, logistic and probit regression, ANOVA, ANCOVA, conjoint analysis, and OLS. In addition we cover multidimensional techniques such as MDS, cluster analysis, principal components analysis, factor analysis, and discriminant analysis. Will utilize the statistics package SPlus 2000, and also BUGS for implementing many of the techniques described in a Bayesian manner.)

Survey Research

Stat 920. (BSTA775, STAT475) Sample Survey Methods. (Fall). Small, D. or Zanutto, E. Prerequisite: STAT 511 or equivalent with permission of instructor.

This course will cover the design and analysis of sample surveys. The focus of attention will be on the latter, specifically, classical analyses of random sampling, stratified sampling, cluster sampling, large sample results, and other topics as time permits and students' interests dictate.

Research Design

Stat 921. Experimental Design and Observational Studies (Fall) Small, D. Prerequisite: STAT 541 or 550 or permission of instructor. The course covers statistical methods for the design and analysis of experiments and observational studies.

Data Processing

Stat 540. Statistical Method & Computation (Jensen, S.) (Offered in Fall 2006) Twice per week, MW 10:30-12 Noon. Introduction to the computational aspects of statistical methodology, with emphasis on applications development. Assignments include algorithm analysis and program development.

Geographic Information Systems

ESE 502. Introduction to Spatial Analysis. (Spring) Prerequisite: ESE 302 or equivalent. (Twice per week, TR 4:30-6PM, SMITH, T.) The course is designed to introduce students to modern statistical methods for analyzing spatial data. These methods include nearest-neighbor analyses of spatial point patterns, variogram and kriging analyses of continuous spatial data, and autoregression analyses of area data. The underlying statistical theory of each method is developed and illustrated in terms of selected GIS applications. Students are also given some experience with ARCMAP, JMPIN, and MATLAB software.

ENVS 541. Modeling Geographical Objects. Tomlin, D.

This course offers a broad and practical introduction to the acquisition, storage, retrieval, maintenance, use, and presentation of digital cartographic data with both image and drawing based geographic information systems (GIS) for a variety of environmental science, planning, and management applications. Its major objectives are to provide the training necessary to make productive use of at least two well known software packages, and to establish the conceptual foundation on which to build further skills and knowledge in late practice.

CPLN (City and Regional Planning) 666 Modeling Geographical Objects (Fall).

Dr. Dana Tomlin.

This course introduces the fundamental conventions and capabilities of GIS from a broad and practical perspective. It does so by offering hands-on training in the use of one particular GIS and then relating these skills to the more general context of theoretical concepts and current professional practice. In contrast to the introductory course on GIS that is offered in the fall semester (LARP 741), this one is oriented toward the use of vector (i.e. drawing-based) as opposed to raster (i.e. image-based) GIS.