

The Johns Hopkins University  
Departments of Sociology and Applied Mathematics and Statistics

Joint Program  
Doctorate in Sociology and Master's in Applied Mathematics and  
Statistics

October 1, 2001 (original)  
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The Department of Sociology, Krieger School of Arts and Sciences, and the Department of Applied Mathematics and Statistics, Whiting School of Engineering, announce a joint program leading to a Ph.D. in Sociology and an M.A. or M.S.E. in Applied Mathematics and Statistics. The purpose of the joint program is to offer Sociology doctoral students an opportunity to acquire advanced statistical knowledge and applied research skills.

The joint program requirements include all the Ph.D. requirements in Sociology and the specially designed requirements for an M.A. or M.S.E. in Applied Mathematics and Statistics. For Sociology Ph.D. requirements, see the *Sociology Ph.D. Students Handbook*. Applied mathematics and statistics courses may substitute for 230.600 and 230.604. Two options for fulfilling the requirements are available for an M.A. or M.S.E. in Applied Mathematics and Statistics. For both options, students are required to meet the Applied Mathematics and Statistics Department's computing requirement (fulfilled through 550.413 Applied Statistics and Data Analysis), the purpose of which is to ensure that students are able to effectively use computers to solve mathematical problems. Listed below are the requirements for the two options.

Option I—Eight courses and a research project leading to a Master's Degree Essay.

1. One required sociology course and two 600-level elective courses in Sociology or Economics.
  - a. Required Sociology course: 230.601 Research Design
  - b. Two of the following elective Sociology and Economics courses: 230.605 Categorical Data Analysis, 230.615 Panel Data Analysis, 230.623 Hazard Models and Causal Analysis, 180.633-634 Econometrics, 180.635 Advanced Econometrics
2. Five 400-level graduate courses in Applied Mathematics and Statistics, with a three-semester prerequisite of Calculus and one-semester prerequisite of Linear Algebra, taken at any college (including summer courses)
  - a. Four core courses: 550.420 Introduction to Probability, 550.430 Introduction to Statistics, 550.413 Applied Statistics and Data Analysis, and 550.426 Introduction to Stochastic Processes

- b. One elective course from, but not limited to: 550.400 Mathematical Modeling and Consulting, 550.433 Monte Carlo Simulation and Reliability, 550.436 Data Mining, 550.439 Time Series Analysis, 550.453 Mathematical Game Theory, 550.463 Network Models in Operations Research, 550.472 Graph Theory, 550.6xx, or two courses at 650 or above in biostatistics at the school of public health (two quarterly courses at SPH is equivalent to a one-semester course at Homewood)
3. Research project

Participate and conduct analyses in a research project under the supervision of a Sociology faculty member. Write a Master's Degree Essay on this project in the form of a journal article under the joint supervision of the Sociology faculty member and an Applied Mathematics and Statistics faculty member.

#### Option II—ten courses

1. Four courses in Sociology or Economics (see Option I.1)
2. Six courses in Applied Mathematics and Statistics (see Option I.2)

#### Application procedure:

Interested Ph.D. students in Sociology can apply to this joint program after being admitted to the Sociology Ph.D. program but no later than the start of their third academic year. Students are permitted to take courses before applying to the program, but must officially apply after completing no more than three of the required AMS core courses. The deadline for submitting applications for the joint program is February 1 for Fall applicants and September 15 for Spring applicants. They should first discuss their intention with the faculty adviser and the Sociology Statistical Coordinator. Applying students should submit to the AMS Department the abbreviated application, two new letters of recommendation that focus on the evaluation of the student's quantitative abilities, and a completed proposed master's program. The Sociology Department will forward materials required from the student's current file (copies of three original recommendation letters, copy of application to Ph.D program, GRE and TOEFL scores, personal statement, and current transcript) to the AMS Department. The completed application must be approved by the Chair of the Sociology Department and the Admissions Committee of the Applied Mathematics and Statistics Department.

Note: All Joint Program students are required to complete a Responsible Conduct of Research (RCR) training, which is addition to the HIPPA training required for the sociology PhD.