School of Economic, Political and Policy Sciences

Master of Science in Social Data Analytics and Research

36 semester credit hours minimum

Faculty

Professors: Kurt J. Beron, Patrick T. Brandt, Harold D. Clarke, Euel W. Elliott, Daniel A. Griffith, Donald A. Hicks, Dohyeong Kim, Dong Li, Robert C. Lowry, Fang Qiu, Meghna Sabharwal, Donggyu Sul

Associate Professors: Bobby C. Alexander, Rodney Andrews, Vito D'Orazio, Simon M. Fass, Seth Giertz, Evgenia Gorina, Tomislav Kovandzic, Michael Tiefelsdorf

Associate Professor of Instruction: Karl K. Ho

Associate Professor of Practice: Timothy M. Bray

Mission

The mission of the Master of Science (MS) in Social Data Analytics and Research is to equip individuals with rigorous multi-disciplinary proficiency in methods of social data production, collection and investigation for which there is a strong and increasing demand in the public, nonprofit, and private sectors, as well as in doctoral programs and other advanced research organizations.

The MS in Social Data Analytics and Research endows students with a clear understanding of the processes involved in the creation, assembly, analysis, and interpretation of social science data. It encourages reflection on core methods, theories and philosophical dimensions of social science practice. It fosters an appreciation of the role of applied social science in helping to shaping public policy and action through participation in the evaluation of policies and programs in place as well as through the formulation of new ones based on the outcomes of data analysis.

The MS in Social Data Analytics and Research orient itself to students wanting to apply social science concepts, principles, and methods to a broad range of questions in research-related and other professional engagements in government, nonprofit, and private sector settings that rely on social data for answers.

Objectives

Graduates of the program will:

• Apply methods of social science research design and evaluation, including quantitative (e.g., experimental, quasi-experimental, and naturalistic) and qualitative approaches in varied public,
non-profit, and private sector settings;

• Employ quantitative and qualitative analysis methods for social science data used in research by different types of public, non-profit, and private sector organizations;

• Harness acquired skills and capabilities in practice to sustain public, nonprofit, and private sector organizations as they address pressing societal issues on both local and global scales;

• Interpret core theories and philosophical dimensions of social science practice, and promote ethical use of social science methodology;

• Justify the importance of applied social science in helping to shape public policy and action;

• Successfully build career paths in fields applying social data analytics and research.

Facilities

Students have full access to four state-of-the-art computer laboratories housed in the School of Economic, Political and Policy Sciences. Open for extended hours including evenings and weekends, each laboratory is equipped with full multimedia systems and contains 24 to 30 computers. All computers are network linked and hold full suites of leading survey, qualitative, spatial and statistical analysis software, including Qualtrics, NVivo, ArcGis, ENVI, EViews, R, STATA, and SAS. The University's computer labs also provide desktop computers and UNIX workstations for student use throughout the campus. These include computing facilities in the Erik Jonsson School of Engineering and Computer Science and in the NASA Center for Excellence in Remote Sensing in the Department of Geosciences.

Key data sources and reference materials are readily available online through the University library and the School's memberships in various professional organizations.

Admissions Requirement

The University's general admission requirements are discussed on the [Graduate Admission page](https://catalog.utdallas.edu/2021-graduate/programs/epps/social-data-analytics-and-research).

The MS in Social Data Analytics and Research invites applications from students with a baccalaureate degree from an accredited higher education institution. Every application receives an all-inclusive review. In general, entering students should have earned a minimum 3.0 undergraduate Grade Point Average (GPA) on a 4.0-point scale, a verbal score of 150 and a quantitative score of 150 on the Graduate Record Examination (GRE). In addition to standardized test scores, which are only one of several factors taken into account in determining admission, students should submit all transcripts, three letters of recommendation, and a one-page essay outlining the applicant's background, education, and professional objectives.

Prerequisites

There are no specific prerequisites for admission to the MS in Social Data Analytics and Research. Several required courses, however, demand satisfactory prior completion of undergraduate college algebra and/or calculus.

Grading Policy

In order to qualify for graduation, students must maintain a minimum 3.0 grade point average in their degree program's core courses plus an aggregate grade point average of 3.0 for all graduate courses taken in the student's degree program at UT Dallas.
Degree Requirements

The University's general degree requirements are discussed on the [Graduate Policies and Procedures](https://catalog.utdallas.edu/2021-graduate/programs/epps/social-data-analytics-and-research) page.

Students seeking the MS in Social Data Analytics and Research must complete at least 36 semester credit hours of graduate coursework in the program and maintain at least a 3.0 (B) grade point average in order to graduate.

The program has three components: Required Core Courses (15 semester credit hours), Prescribed Analytical Electives (12 semester credit hours) and Prescribed Disciplinary Electives (9 semester credit hours), as follows:

I. Required Core Courses: 15 semester credit hours

   - **EPPS 6302** Methods of Data Collection and Production
   - **PPPE 6310** Research Design I
   - **EPPS 6313** Introduction to Quantitative Methods
     - or **EPPS 7313** Descriptive and Inferential Statistics
   - **EPPS 6316** Applied Regression
     - or **EPPS 7316** Regression and Multivariate Analysis
   - **EPPS 6356** Data Visualization
     - or **GISC 6363** Internet Mapping and Information Processing

   In special circumstances, students may substitute alternative equivalent courses in the core with prior approval of the Program Director or the Associate Dean for Graduate Programs.

II. Prescribed Analytical Electives: 12 semester credit hours

   Students complete twelve semester credit hours

   - **EPPS 6317** (GISC 6317) Social and Geospatial Science Programming Fundamentals
   - **EPPS 6323** Knowledge Mining
   - **EPPS 6324** Data Management for Social Science Research
   - **EPPS 6326** (GISC 6323) Machine Learning for Socio-Economic and Geo-Referenced Data
   - **EPPS 6346** Qualitative Research Orientation
   - **EPPS 6352** Evaluation Research Methods in the Economic, Political and Policy Sciences
   - **EPPS 6354** Information Management
   - **EPPS 6355** Content Analysis
   - **EPPS 6356** Data Visualization
EPPS 7304 Cost-Benefit Analysis  
EPPS 7318 Structural Equation and Multilevel (Hierarchical) Modeling  
EPPS 7344 Categorical and Limited Dependent Variables  
EPPS 7370 Time Series Analysis I  
EPPS 7371 Time Series Analysis II  
EPPS 7386 Survey Research  
EPPS 7390 Bayesian Analysis for Social and Behavioral Sciences  
GISC 5322 GPS (Global Positioning System) Satellite Surveying Techniques  
GISC 5324 3D Data Capture and Ground LiDAR  
GISC 6301 GIS Data Analysis Fundamentals  
GISC 6321 Spatial Data Science  
GISC 6323 Machine Learning for Socio-Economic and Geo-Referenced Data  
GISC 6325 Remote Sensing Fundamentals  
GISC 6381 Geographic Information Systems Fundamentals  
GISC 6384 Advanced Geographic Information Systems  
GISC 7310 Advanced GIS Data Analysis  
GISC 7360 GIS Pattern Analysis  
GISC 7361 Spatial Statistics  
GISC 7365 Advanced Remote Sensing

III. Disciplinary Electives: 9 semester credit hours

Students complete nine semester credit hours in ONE of the following disciplinary domains (Criminology, Geospatial Information Sciences, Economics, Political Science, Public/Nonprofit Management, Public Policy/Political Economy, or Sociology) with courses prescribed by the respective EPPS Programs. The Program Director or the Associate Dean for Graduate Programs must approve course selection.

1. Prerequisite is College Algebra.  
2. Prerequisite is Calculus.