

SURVEY AND DATA SCIENCE, MASTER OF PROFESSIONAL STUDIES (M.P.S.)

Non-thesis only: 30 credits required

The online *International Master of Professional Studies in Survey and Data Science* will provide post-baccalaureate training for individuals interested in broadening their knowledge and understanding of the emerging field of data science, the conduct of sample surveys, practical applications of data analysis and survey methodology, and data management, along with the skills needed to communicate results.

Survey methodology, which is already an interdisciplinary field drawing upon statistics, sociology, economics, political science, informatics, public health (e.g., physical measures taken on respondents), and the geographic sciences (e.g., geographic information systems), is now intersecting with the big data world. As public and private organizations are increasingly combining various data sources, including survey data, for the purpose of decision making, the need for professional development in data generation, quality and analysis is on the rise. The online environment is convenient for working professionals who cannot easily travel to a traditional campus. In addition, courses will be shared with our international partners, providing a rich perspective to class discussions.

Course	Title	Credits
Required course		
SURV400	Fundamentals of Survey and Data Science	3
Data Generating Processes (choose 4 credits). Acceptable courses include the following:		
SURV440	Sampling Theory	
SURV626	Sampling	
SURV627	Experimental Design and Causal Inference	
SURV631	Questionnaire Design	
SURV635	Usability Testing for Survey Research or SURV699J	
SURV636	Sampling II	
SURV656	Web Survey Methodology or SURV699I	
SURV667	Introduction to Record Linkage with Big Data Applications	
SURV673	Introduction to Python and SQL	
SURV736	Introduction to Web Scraping with R	
Data Curation and Storage (choose one course). Acceptable courses include the following:		
SURV665	Introduction to Real World Data Management	
SURV667	Introduction to Record Linkage with Big Data Applications	
SURV675	Modern Workflows in Data Science or SURV699Y	
SURV725	Item Nonresponse and Imputation	
SURV726	Multiple Imputation	
SURV750	Step by Step Survey Weighting	
INST640	Principles of Digital Curation	

INST733	Database Design	
INST767	Big Data Infrastructure	
Data Analysis (choose 6 credits). Acceptable courses include the following:		6
SURV611	Review of Statistical Concepts or SURV699M	
SURV627	Experimental Design and Causal Inference	
SURV662	An Introduction to Small Area Estimation Methods (An Introduction to Small Area Estimation Methods)	
SURV673	Introduction to Python and SQL	
SURV702	Analysis of Complex Survey Data	
SURV706	General Linear Models	
SURV725	Item Nonresponse and Imputation	
SURV726	Multiple Imputation	
SURV742	Inference from Complex Surveys	
SURV750	Step by Step Survey Weighting	
SURV751	Introduction to Big Data and Machine Learning	
SURV753	Machine Learning II or SURV699I	
Data Output/Access (choose 3 credits). Acceptable courses include the following:		3
SURV612	Ethical Considerations for Data Science Research or SURV699J	
SURV624	Privacy Law or SURV699C	
SURV675	Modern Workflows in Data Science or SURV699Y	
SURV735	Data Privacy and Data Confidentiality	
SURV752	Introduction to Data Visualization	
INST610	Information Ethics	
INST760	Data Visualization	
Electives. Acceptable courses include any 600-level or 700-level SURV courses.		11
Total Credits		30