## 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 Cr	edits		
Required course				
SURV400	Fundamentals of Survey and Data Science	3		
Data Generating F	Processes (choose 4 credits). Acceptable courses	4		
include the following:				
SURV440	Sampling Theory			
SURV626	Sampling			
SURV627	Experimental Design and Causal Inference			
SURV631	Questionnaire Design			
SURV635	Usability Testing for Survey Research			
or SURV699	y			
SURV636	Sampling II			
SURV656	Web Survey Methodology			
or SURV699	(			
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 3 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 SURV699	Y			
SURV725	Item Nonresponse and Imputation			
SURV726	Multiple Imputation			
SURV750	Step by Step Survey Weighting			
INST640	Principles of Digital Curation			

Т	otal Credits		30
SURV courses.			
_	INST760	Data visualization	11
	INST610	Information Ethics	
	SURV752	Introduction to Data Visualization	
	SURV735	Data Privacy and Data Confidentiality	
	or SURV699	,,	
	SURV675	Modern Workflows in Data Science	
	or SURV699		
	SURV624	Privacy Law	
	or SURV699		
	SURV612	Ethical Considerations for Data Science Research	
tl	ne following:		
D	ess (choose 3 credits). Acceptable courses include	3	
	or SURV699	- -	
	SURV753	Machine Learning II	
	SURV751	Introduction to Big Data and Machine Learning	
	SURV750	Step by Step Survey Weighting	
	SURV742	Inference from Complex Surveys	
	SURV726	Multiple Imputation	
	SURV725	Item Nonresponse and Imputation	
	SURV706	General Linear Models	
	SURV702	Analysis of Complex Survey Data	
	SURV673	Introduction to Python and SQL	
	SURV662	An Introduction to Small Area Estimation Methods (An Introduction to Small Area Estimation Methods)	
	SURV627	Experimental Design and Causal Inference	
	or SURV699	M	
	SURV611	Review of Statistical Concepts	
f	ollowing:		0
	INSTIOT	Big Data Infrastructure	6
	INST733	Database Design	
	INICT700	Datahaga Dagian	

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