Data Science in Society Concentration

Common Core Courses

Introduction to Data Science	CAP 5768
Quantitative Methods in Political Science	POS 6746

Take one additional core course

Biostatistics	STA 5195
Data Mining and Machine Learning	CAP 6673
Introduction to Business Analytics and Big Data	ISM 6404

Take four concentration courses

Advanced Anthropological Research 2	ANG 6092
Quantitative Reasoning in Anthropological Research	ANG 6486
Social Networks and Big Data Analytics	CAP 6315
Quantitative Communication Research	COM 6316
Social Media and Web Analytics	ISM 6555
Seminar in Political Behavior	POS 6208
Research Design in Political Science	POS 6736
Seminar in Advanced Research Methods	SYA 6305

Take three elective courses from the Electives Table. Thesis option requires only one elective course and 6 thesis credits.

Electives Table

Business Analytics

Data Mining and Predictive Analytics	ISM 6136
Database Management Systems	ISM 6217
Introduction to Business Analytics and Big Data	ISM 6404
Advanced Business Analytics	ISM 6405
Social Media and Web Analytics	ISM 6555
Data Management and Analysis with Excel	QMB 6303
Data Analysis for Managers	QMB 6603

Database and Cloud Computing

Multiprocessor Architecture	CDA 6132
Cloud Computing	CEN 5086
New Directions in Database Systems	COP 6726
Theory and Implementation of Database Systems	COP 6731
Database Management Systems	ISM 6217

Data Mining and Machine Learning

Introduction to Neural Networks	CAP 5615
Social Networks and Big Data Analytics	CAP 6315
Data Mining for Bioinformatics	CAP 6546
Machine Learning for Computer Vision	CAP 6618
Deep Learning	CAP 6619
Reinforcement Learning	CAP 6629
Artificial Intelligence	CAP 6635
Data Mining and Machine Learning	CAP 6673
Applied Machine Learning	CAP 6610
Information Retrieval	CAP 6776
Web Mining	CAP 6777

Advanced Data Mining and Machine Learning	CAP 6778
Big Data Analytics with Hadoop	CAP 6780
Computational Advertising and Real-Time Analytics	CAP 6807
Computer Performance Modeling	CEN 6405
Data Mining and Predictive Analytics	ISM 6136

Data Security and Privacy

Computer Data Security	CIS 6370
Data Analysis and Modeling for Cybersecurity	CAI 6803
Management of Information Assurance and Security	ISM 6328
Introduction to Cryptology and Information Security	MAD 5474
Cryptanalysis	MAD 6478
Quantum Mechanics 2	PHY 6646

Scientific Applications and Modeling

Photogrammetry and Aerial Photography Interpretation	GIS 6028C
LiDAR Remote Sensing and Applications	GIS 6032C
Web GIS	GIS 6061C
Geospatial Databases	GIS 6112C
Hyperspectral Remote Sensing	GIS 6127
Spatial Data Analysis	GIS 6306
Special Topics (Quantum Information Processing)	PHY 6938
Computational Physics	PHZ 5156
Numerical Relativity	PHZ 7609

Social Data Science

Advanced Anthropological Research 1	ANG 6090
Advanced Anthropological Research 2	ANG 6092
Quantitative Reasoning in Anthropological Research	ANG 6486
Social Networks and Big Data Analytics	CAP 6315
Quantitative Communication Research	COM 6316
Quantitative Methods in Political Science	POS 6746
Research Design in Political Science	POS 6736
Seminar in Advanced Research Methods	SYA 6305

Statistics and Data Applications

Biomedical Data and Informatics	BSC 6459
Biostatistics	STA 5195
Statistical Computing	STA 6106
Survival Analysis	STA 6177
Biostatistics - Longitudinal Data Analysis	STA 6197
Applied Statistical Methods	STA 6207
Regression Analysis	STA 6236
Mathematical Statistics	STA 6326
Applied Time Series Analysis	STA 6857
Applied Computational Topology	MTG 6329