Urban Analytics Concentration

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The Urban Analytics concentration introduces students to describing, analyzing and prescribing solutions to urban planning problems using spatial data and analysis methods. An increasing share of urban planning work today addresses spatial interactions between numerous geographically bound actors and processes that are too complex to visualize and analyze without computational tools. Geographic Information Systems, spatial statistics and algorithmic approaches to spatial data analysis are used in public and private planning practices at the local, regional and international scales to describe urban challenges, to evaluate the impacts of alternative solutions and to visualize complex information.

A range of urban and spatial analytics courses are available at the GSD and other Harvard schools, especially the Engineering School, FAS, the School of Public Health, Kennedy School and the Graduate School of Education. Students can also enlist in courses at MIT. The Harvard Center for Geographic Analysis offers data and software support as well as focused seminars and conferences relevant to the concentration topic.

Please note that course offerings often change, and new courses may be offered while these recommended courses may not be offered each year. This memo is subject to change depending on the availability of courses. Other courses may be approved with the permission of the Concentration Advisor.

Recommended basic courses:

The following courses are recommended to those interested in the concentration. They are introductory level courses that give a good overview of the topics and subject matter covered in more depth by other courses in the concentration:

GSD 6322: Mapping: Geographic Representation and Speculation    Pietrusko
GSD 6354: Applied Urban Analytics    Sevtsuk

Approved courses include:

Fall

At the Graduate School of Design:
GSD 3356: Field Methods and Living Collections    Elkin
GSD 6322: Mapping: Geographic Representation and Speculation    Pietrusko
GSD 6354: Applied Urban Analytics    Sevtsuk

At the Kennedy School of Government:
HKS DPI 662: Digital Government    Eaves

Updated: July 30, 2018
HKS API 222: Machine Learning and Big Data Analytics  Saghafian
HKS DPI 678M: Product Management, Tech, and Society  Pham

At the Faculty of Arts and Science:
FAS APCOMP 209A: Data Science 1: Introduction  Protopapas
FAS GOV 1008: Intro to GIS  Kelly
FAS COMPSCI 50: Intro to Computer Science I  Malan

At the Chan School of Public Health:
SPH SBS 245: Social and Behavioral Research Methods  Gortmaker
SPH SBS 288: Qualitative Research Methods in Public Health  Goldman
SPH BST 260: Introduction to Data Science  Mattie

At Harvard Law School:
HLS 2813: City Use of Technology  Crawford

At MIT (Massachusetts Institute of Technology):
MIT 11.205: Introduction to Spatial Analysis  Williams
MIT 11.520: Workshop on GIS  Williams
MIT 11.544: Transportation Systems Analysis: Performance and Optimization  Osorio

Spring
At the Graduate School of Design:
GSD 2314: Responsive Environments  Sayegh
GSD 3353: Advanced Seminar in City Form  Sevtsuk
GSD 5365: Towns and Settlements in Metropolitan Regions  Rowe
GSD 6322: Mapping: Geographic Representation and Speculation  Pietrusko

At the Kennedy School of Government:
HKS API 206: Fundamentals of Program and Policy Evaluation  Matuszeski
HKS MLD 620M: Urban Innovation  Goldsmith
HKS MLD 621: Innovation Field Lab: Public Problem Solving in Massachusetts Cities  de Jong
HKS DPI 676: Designing Government  Chisnell
HKS DPI 663: Tech and Innovation in Government*  Sinai
*Requires Permission of Instructor

At the Graduate School of Education:
EDU S030: Intermediate Statistics  Kim
EDU S052: Applied Data Analysis  Ho

At the Faculty of Arts and Science:
FAS APCOMP 209B: Data Science 2: Advanced Topics in Data Science  Protopapas
FAS GOV 1009: Advanced Geographical Information Systems  Kelly

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At the Chan School of Public Health:
SPH GHP 534: Introduction to Spatial Methods for Public Health  
Castro  
SPH BST 261: Data Science II  
Mattie

At MIT (Massachusetts Institute of Technology):
MIT 11.205: Introduction to Spatial Analysis  
Ferreira  
MIT 11.521: Spatial Database Management and Advanced GIS  
Ferreira  
MIT 11.320: Digital City Design Workshop  
Riatti  
MIT 11.5941: Big Data, Visualization, and Society  
Huntley

Not Currently Offered
GSD 6354: Advanced Spatial Analysis  
Sevtsuk  
GSD 6349: Mapping II: Geosimulation  
Pietrusko  
FAS SOCIOL 313: Urban Data Lab  
Sampson, Small  
MIT 11.407: Economic Development Tools and Techniques  
Glasmeier

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