

## Urban Analytics Concentration

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## Other Concentration Faculty

Ann Forsyth, Jerold Kayden, Rick Peiser, Bing Wang

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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 6354: Advanced Spatial Analysis	Sevtsuk
GSD 6322: Mapping: Geographic Representation and Speculation	Pietrusko

### Approved courses include:

#### Fall

#### At the Graduate School of Design:

GSD 6349: Mapping II: Geosimulation	Pietrusko
GSD 3356: Field Methods and Living Collections	Elkin

**At the Kennedy School of Government:**

HKS API 206: Fundamentals of Program and Policy Evaluation	Matuszeski
HKS DPI 662: Digital Government	Eaves
HKS MLD 620M: Urban Innovation	Goldsmith

**At the Faculty of Arts and Science:**

FAS APCOMP 209A: Data Science 1: Introduction	Various
FAS GOV 1008: Intro to GIS	Strohschein
FAS SOCIOL 313: Urban Data Lab	Sampson, Small
FAS COMPSCI 50: Intro to Computer Science I	Malan

**At the Graduate School of Education:**

Introduction to Educational Research	Tivnan
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**At the Chan School of Public Health:**

SPH SBS 245: Social and Behavioral Research Methods	Gortmaker, Kenney
SPH SBS 288: Qualitative Research Methods in Public Health	Goldman

**At Harvard Law School:**

HLS 2813: City Use of Technology	Crawford
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**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
MIT 11.407: Economic Development Tools and Techniques	Glasmeier

**Spring**

**At the Graduate School of Design:**

GSD 2314: Responsive Environments: CITY eMOTION	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 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 Glickman  
FAS GOV 1009: Advanced Geographical Information Systems Kelly

**At the Chan School of Public Health:**

SPH GHP 534: Introduction to Spatial Methods for Public Health Castro

**At MIT (Massachusetts Institute of Technology):**

MIT 11.205: Introduction to Spatial Analysis Ferreira  
MIT 11.521: Spatial Database Management and Advanced GIS Ferreira

**Not Currently Offered**

GSD 6354: Advanced Spatial Analysis Sevtsuk  
HKS DPI 616: Public Opinion Norris  
MIT 11.S943: Big Data, Visualization and Society Williams  
MIT 11.320: Digital City Design Workshop Riatti