

# URBAN SPATIAL ANALYTICS, MUSA

The for-profit sector has embraced data and analytics as a means to increase efficiency and grow the bottom line. The government and non-profit sectors are next in line. The Master of Urban Spatial Analytics is a one year graduate program that teaches students how to use spatial analysis and data science to address the most pressing public policy and city planning conundrums of our day. We are teaching the next generation of civic technologists. The one-year MUSA program combines coursework on GIS, spatial analysis, data science, statistics, R and python programming, data visualization and web-based mapping with world-class urban content coursework from across the University of Pennsylvania. The program is administered jointly by the Weitzman School of Design and the Penn Institute for Urban Research.

Students enrolling in the MUSA program are expected to have a basic familiarity with GIS (including ESRI's ArcGIS or ArcView programs) and descriptive/inferential statistics. For those who lack such background, MUSA and the Weitzman School of Design offer introductory GIS courses during the summer, two weeks prior to the start of the the fall term.

**For more information:** <https://www.design.upenn.edu/musa/about>  
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## Curriculum

A total of 9 course units are required for graduation.

Code	Title	Course Units
<b>Required Courses</b>		
MUSA 5000	Statistical and Data Mining Methods for Urban Data Analysis	1
MUSA 5080	Public Policy Analytics	1
MUSA 8010	MUSA/Smart Cities Practicum	1
or MUSA 8020	Advanced Topics in GIS Capstone	
<b>MUSA Electives</b>		
Choose from any MUSA courses or one of the following:		3
CPLN 6320	Modeling Geographic Space	
CPLN 6750	Land Use and Environmental Modeling	
<b>Urban Content Requirement</b>		
Urban Content Requirement 1 <sup>1</sup>		1
Urban Content Requirement 2 <sup>1</sup>		1
<b>General Elective</b>		
Elective		1
<b>Total Course Units</b>		<b>9</b>

<sup>1</sup> Select at least two approved courses or course units in a designated urban content area. A list of approved courses is available in the City Planning Department.

## Course Sequence

Full-Time: 2 terms / 9 months

- Fall Year 1 - 5 course units
- Spring Year 1 - 5 course units

Part-time: 4 terms / 18 months

- Fall Year 1 - 3 course units
- Spring Year 1 - 3 course units
- Fall Year 2 - 2 course units
- Spring Year 2 - 1 course unit / capstone

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2024 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.