

MASTER OF SCIENCE IN URBAN ANALYTICS

CSE/ECE 6730	Modeling and Simulation: Foundations and Implementation	
Total Credit Hours		30

The Master of Science in Urban Analytics degree is designed to give graduates a core of computing, planning, and data analysis and visualization skills to identify, analyze, and solve urban problems; to integrate those skills in an interdisciplinary way that other, single-discipline-oriented urban analytics degrees might not; and to provide depth in urban problems that can be addressed through data analytics.

The program is interdisciplinary between the School of City and Regional Planning (SCaRP, within the College of Design), the Schools of Computational Science and Engineering and Interactive Computing (CSE and IC, both within the College of Computing), and the Stewart School of Industrial and Systems Engineering (ISyE, within the College of Engineering). Each of the four units (SCaRP, IC, CSE, and ISyE) provides expertise in a different facet of urban analytics, with interdisciplinary coordination achieved by having faculty cooperate on the development and revision of course content, especially in the core and required courses.

Code	Title	Credit Hours
Urban Systems Core Courses		
CP 6552	Design of Smart Urban Systems	3
CP 8803	Special Topics in Transportation Planning (Introduction to Urban Analytics)	3
Capstone and application of urban analytics in practice		
CP 6960	Urban Analytics Capstone Project	1
CP 6962	Urban Analytics Capstone Project	5
Courses in spatial analysis		6
CP 6521	Advanced Geographic Information Systems	
CP 6570	Socioeconomic GIS	
CP 6541	Environmental Analysis Using GIS	
CP 6542	Transport & GIS	
Courses in computational statistics		6
CSE 6010	Computational Problem Solving for Scientists and Engineers	
CSE 6040	Computing for Data Analysis: Methods and Tools	
CSE 6240	Web Search and Text Mining	
CSE 6740	Computational Data Analysis: Learning, Mining, and Computation	
ISYE 6416	Computational Statistics	
ISYE 6412	Theoretical Statistics	
ISYE 6414	Statistical Modeling and Regression Analysis	
Courses in modeling and visualization		6
ISYE 6501	Intro Analytics Modeling	
CSE 6220	High Performance Computing	
CSE 6242	Data and Visual Analytics	
CS 6730	Data Visualization: Principles and Applications	
CS 7450	Information Visualization	