

# M.P.S. IN URBAN SUSTAINABILITY AND RESILIENCE

## Overview

The Master of Professional Science degree (MPS) in Urban Sustainability and Resilience is an interdisciplinary STEM-designated 36-credit program offered jointly between the College of Arts & Sciences' Department of Geography and Sustainable Development, and the School of Architecture. The curriculum leverages the knowledge, skills and hands-on practical engagement necessary for students working toward contributing to the urban challenges confronting cities on the front lines of climate change.

## Admission Requirements

- A completed Bachelor's degree in an appropriate field from an accredited institution.
- A minimum overall undergraduate grade point average of 3.0 (on a 4.0 scale).
- A score of at least 80 on the TOEFL or 6.5 on the IELTS for international students.
- Three current letters of recommendations.
- A personal statement of academic and professional goals.

## Curriculum Requirements

Code	Title	Credit Hours
<b>Core Courses</b>		
ARC 621	Housing, Infrastructure and Transportation	3
ARC 679	An Introduction to Resilient Building and Community Design	3
GEG 620	Sustainable Cities	3
GEG 623	Seminar in Urban Management	3
<b>Students Must Complete One of the Following Tracks</b>		<b>12</b>
<b>Sustainability Track</b>		
GEG 661	Urban Geography I	
Students Complete 9 Credit Hours from the Following Electives:		
GEG 657	Economics of Sustainable Development	
ARC 626	Landscape Arch Design II	
GEG 603	Research Design in Geography	
ARC 628	Historic Preservation	
ARC 640	Tropical Architecture	
ARC 641	Seminar on Town Design	
ARC 685	Special Problems	
ARC 690	History of Cities	
GEG 643	Population, Sustainability and the Media	
GEG 693	Geographic Information Systems II	
GEG 692	Remote Sensing of the Environment	
GEG 680	Spatial Data Analysis I	
GEG 681	Spatial Data Analysis II	
GEG 636	Sustainable Food Systems	
GEG 612	Health Applications of Geographic Information Systems	
GEG 648	Climate Change and Public Health	
IGS 644	Energy Security and Environmental Sustainability	
IGS 647	Disasters and Humanitarian Assistance	
<b>Resilience Track</b>		
ARC 694	Geographic Information Systems in Urban Design (Required)	
Students Complete 9 Credit Hours from the Following Electives:		
ARC 623	Urban Design Competition (Urban Design and Development Charrette)	
GEG 603	Research Design in Geography	

EVR 611	The Science of Actionable Knowledge	
ARC 622	Urban Design Theory and History of the Modern City	
ARC 639	Adaptation to Climate Change	
ARC 643	Seminar on Retrofit of Suburbia	
ARC 648	Seminar in Community Development	
ARC 680	Professional Advancement, Internship + Research (PAIR)	
ARC 684	Special Problems (RAD-LAB UM)	
ARC 697	Designing for the Internet of Things	
GEG 636	Sustainable Food Systems	
GEG 643	Population, Sustainability and the Media	
GEG 693	Geographic Information Systems II	
GEG 692	Remote Sensing of the Environment	
GEG 636	Sustainable Food Systems	
GEG 648	Climate Change and Public Health	
GEG 612	Health Applications of Geographic Information Systems	
RED 601	Introduction to Real Estate Development and Urbanism	
RED 650	Complex Urban Real Estate Transactions	
RED 660	Urban Redevelopment	
<b>Electives (with approval of faculty advisor)</b>		<b>6</b>
<b>Practicum, Design Studio or Project Studio Report</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>36</b>

## Sample Plan of Study

Year One		Credit Hours
<b>Fall</b>		
GEG 620	Sustainable Cities	3
ARC 621	Housing, Infrastructure and Transportation	3
Elective		3
<b>Credit Hours</b>		<b>9</b>
<b>Spring</b>		
GEG 623	Seminar in Urban Management	3
ARC 679	An Introduction to Resilient Building and Community Design	3
Elective		3
<b>Credit Hours</b>		<b>9</b>
<b>Year Two</b>		
<b>Fall</b>		
Track Core Course		3
Track Elective		3
Track Elective		3
<b>Credit Hours</b>		<b>9</b>
<b>Spring</b>		
Track Elective		3
Practicum, Design Studio or Project Studio		6
<b>Credit Hours</b>		<b>9</b>
<b>Total Credit Hours</b>		<b>36</b>

## Mission

This interdisciplinary MPS in Urban Sustainability and Resilience program aims to provide the knowledge, skills and hands-on practical engagement necessary for students working toward contributing to the urban challenges of the 21st century.

## Goals

- Focusing on how the stressors and shocks of a changing climate and sea-level rise will impact the urban realm in areas such as health, housing, and crime, students will gain an understanding of the spatial and temporal transitions involved in pathways toward urban sustainability and resilience
- Students will gain skills in methodology, including Geographic Information Systems (GIS), urban design, remote sensing, data visualization, and qualitative or quantitative methods. The knowledge acquired by students can contribute to future policies that lead to more sustainable development pathways.

## Student Learning Outcomes

- Through the advanced understanding of the concepts and theories of both Sustainability Science, Design, Planning and Geography, students will be able to select and use advanced tools and methods to measure and assess synergies and trade-offs among governance, environmental conservation, economic prosperity, and social inclusion.
- Students will be able to translate research on sustainability development, resilience and geography into policies and programs that seek to solve some of the recurrent urban problems.