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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ARC 621</td>
<td>Housing, Infrastructure and Transportation</td>
<td>3</td>
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<tr>
<td>ARC 679</td>
<td>An Introduction to Resilient Building and Community Design</td>
<td>3</td>
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<tr>
<td>GEG 620</td>
<td>Sustainable Cities</td>
<td>3</td>
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<td>GEG 623</td>
<td>Seminar in Urban Management</td>
<td>3</td>
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Students Must Complete One of the Following Tracks

**Sustainability Track**

- 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

**Resilience Track**

- 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  Case Studies in Sustainability and Resilience Practices and Methods
ARC 648  Applied Environmental Strategies: Sustainability, Resilience, and Community Engagement
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

Electives (with approval of faculty advisor)  6
Practicum, Design Studio or Project Studio Report  6
Total Credit Hours  36

Sample Plan of Study

Year One
Fall
GEG 620  Sustainable Cities  3
ARC 621  Housing, Infrastructure and Transportation  3
Elective  3
Credit Hours  9

Spring
GEG 623  Seminar in Urban Management  3
ARC 679  An Introduction to Resilient Building and Community Design  3
Elective  3
Credit Hours  9

Year Two
Fall
Track Core Course  3
Track Elective  3
Track Elective  3
Credit Hours  9

Spring
Track Elective  3
Practicum, Design Studio or Project Studio  6
Credit Hours  9
Total Credit Hours  36

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.