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>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 621</td>
<td>Housing, Infrastructure and Transportation</td>
<td>3</td>
</tr>
<tr>
<td>ARC 679</td>
<td>An Introduction to Resilient Building and Community Design</td>
<td>3</td>
</tr>
<tr>
<td>GEG 620</td>
<td>Sustainable Cities</td>
<td>3</td>
</tr>
<tr>
<td>GEG 623</td>
<td>Seminar in Urban Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Students Must Complete One of the Following Tracks 12

**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 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  

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

### Sample Plan of Study

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

### 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.