

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 Regional Studies, 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 |
|----------------------------------------------------------------|-------------------------------------------------------------------|--------------|
| Core Courses | | |
| 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 |
| Students Must Complete One of the Following Tracks | | 12 |
| Sustainability Track | | |
| GEG 661 | Urban Geography I (Required) | |
| Students Complete 9 Credit Hours from the Following Electives: | | |
| ARC 626 | Landscape Arch Design II | |
| ARC 628 | Historic Preservation | |
| ARC 640 | Tropical Architecture | |
| ARC 641 | Seminar on Town Design | |
| ARC 685 | Special Problems | |
| ARC 690 | History of Cities | |
| GEG 622 | Urbanization in the Developing World | |
| GEG 643 | Population, Sustainability and the Media | |
| GEG 648 | Climate Change and Public Health | |
| GEG 661 | Urban Geography I | |
| 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 621 | Housing, Infrastructure and Transportation | |
| ARC 623 | Urban Design Competition (Urban Design and Development Charrette) | |
| 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 | |

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| GEG 636 | Sustainable Food Systems | |
| GEG 680 | Spatial Data Analysis I | |
| GEG 681 | Spatial Data Analysis II | |
| 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 | | Credit Hours |
|--------------------------------------------|------------------------------------------------------------|---------------------|
| 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

- Students will gain an interdisciplinary understanding of the spatial and temporal transitions involved in pathways toward urban sustainability and resilience (focusing on challenges such as health, housing, the environment, crime, and sea-level rise).
- 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.