

Graduate Certificate in Climate Change, Hazards and Green Infrastructure Planning

Department of Landscape Architecture and Regional Planning
College of Social and Behavioral Sciences
210 Design Building

University of Massachusetts, Amherst

www.umass.edu/larp/certificates/ccgi

Certificate Program Advisor: **Professor Elisabeth Infield**, eminfield@umass.edu

Program overview

The Graduate Certificate in Climate Change, Hazards and Green Infrastructure Planning provides students with a credential showing that they have unique skills in one of the most pressing topic areas in policy today. This is a nationally innovative program which provides the knowledge and skills to implement solutions to the resilience and climate change emergency.

Why this topic?

There is an emerging need for professionals trained in reducing greenhouse gas emissions and increasing resilience to climate change effects. This is a particular issue at the site, local, and regional level, where choices in infrastructure and spatial form can support lower fossil fuel use and better hazard resilience for all, or they can build in inefficiency, inequity and risk to communities. When it comes to the built form, the best approaches utilize green infrastructure such as low-impact stormwater management systems, urban greening to reduce heat island effects, low-fossil-fuel transport systems, and regenerative designs that also attend to equity. These practices need to be embedded in community goals, values and visions. Addressed holistically, this enables fundamental change in community futures. Your Certificate will provide employers with assurance that you are ready to address these challenges.

Why here?

We bring together the knowledge and skills of landscape architects and planners, providing the best approach to this topic available in the nation. Landscape architecture works at the site level and designs appropriate systems to support new building; planning provides the public process and strategic outlook as well as regulatory framework within which new development occurs. Coursework in other departments at UMass supports the Certificate's core classes. Together these create a coherent and advanced practical set of skills and knowledge.

How does the certificate work?

You must take two core classes, one in Planning for Climate Change, one in Green Infrastructure. Then take three other classes in related areas, as shown on the checksheet. There is no limit on dual-counting of certificate courses if these courses also fulfill requirements in your graduate degree program. In other words, use these certificate courses for your degree electives, and you may not have to take any extra courses at all. Please be aware that all classes must be graduate level to count; at UMass, this is a course listed as 500 or above.

Who can get the certificate?

We welcome students from a broad range of disciplines, as well as returning professionals. Instructors in this program appreciate the enrichment of knowledge that interdisciplinarity and a range of life experiences bring. Students must hold a bachelor's degree when they begin the certificate. Graduating college seniors may apply for the semester(s) after they graduate with their bachelor's degree. Non-degree students are welcome in the program. Non-degree students enroll through UMass University Without Walls; for application, tuition and enrollment policies, see <https://www.umass.edu/uww/>.

Can I complete the certificate on-line?

Yes. Core certificate courses as well as recommended electives offer on-line sections appropriate for non-degree students such as returning professionals. A wide range of electives have on-line modality.

How long will the certificate program take?

One year, assuming you take one to two classes per semester. Core courses are offered in spring and fall, electives are available spring, fall, and summer.

How do I apply?

Students will apply to the certificate by emailing the coordinator their cv/resume and a one-page statement of interest. If you don't attend UMass already, you will register through University Without Walls. If you attend UMass, simply register for appropriate classes once you have been approved to join the certificate program.

What are the Certificate's core knowledge and skills?

RegionPl 585 Planning for Climate Change, *Fall*

LandArch 591I Green Infrastructure, *Spring*

- Basic comprehension of climate change science (refresher information included in Planning for Climate Change, more extensive coverage for those who need it is through Geography courses)
- Familiarity with greenhouse gas accounting and practices to reduce GhG emissions in the urban environment.
- Knowing the planning processes and best practices for municipalities and regions can use to adapt to the climate conditions we will experience in the future
- Understand how green infrastructure planning and design can add resilience in communities and absorb greenhouse gasses while achieving current goals such as public health and livability, water quality and quantity management, biodiversity, transportation, and recreational resources.
- Ability to plan and design green infrastructure networks across multiple spatial scales (i.e., site, local, and regional).
- How to use an equity lens when planning adaptation and mitigation practices to ensure that our actions improve the lives of those with less resources.

What can I learn through electives?

- Scenario planning and GIS as the methods for doing climate change planning and design
- Deeper knowledge of municipal greenhouse gas accounting, climate action plan preparation, and best practices to encourage reduction of greenhouse gas emissions at the local level.
- Social programs and decision practices that will improve equity, vulnerability, and communication
- Physical designs that will create a better future, such as urban greening, green infrastructure, spatial form, and watershed management.
- Resilient materials and buildings, such as LEED certification and material experiments
- Interactions of social and cultural structures with community design and resilience to hazards.

GPA requirement

3.0 average in major courses for matriculating students or special permission of advisor. No prerequisites, although students without a background in ecology/climate will be directed to appropriate elective courses to assure a solid intellectual foundation.

Please contact the Certificate Program Advisor, Professor Elisabeth Infield, at eminfield@umass.edu, for more detail.