

Climate Change, Hazards, and Green Infrastructure Planning Certificate

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. 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. Core courses are offered on-line, and many electives are as well.

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 brings. Students must hold a Bachelor's degree. Graduating college seniors may apply, particularly for the semester(s) after they graduate with their Bachelor's degree. Non-degree students are welcome in this program.

Non-degree students enroll through UMass University Without Walls; for application, tuition and enrollment policies, see <https://www.umass.edu/uww/>.

Why study at UMass Amherst?

This program brings 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.

What will I learn?

- Knowledge of best practices in climate adaptation and mitigation planning for municipalities and regions

- Ability to plan, design, and evaluate green infrastructure and urban greening at multiple scales (site, city, region)
- Achieving multiple objectives (co-benefits) including public health improvement, water quality and quantity management, biodiversity, transportation, and recreational resources with climate-focused designs
- How to improve equity while reducing hazard vulnerability
- How to integrate climate projections and carbon reduction into policies and plans.

Specialized Knowledge and Skills available through Electives

- Scenario planning and GIS as the methods for climate change analysis
- Municipal greenhouse gas accounting, climate action plan preparation, and best practices to encourage reduction of greenhouse gas emissions at the local level.
- The potential of urban greening to create more livable and sustainable cities.
- Social programs and decision practices that will improve equity, vulnerability, and communication
- In-depth knowledge of designs that will create a better future, such as low impact development, green infrastructure, resilient spatial form, and watershed management.
- Resilient materials and buildings, such as LEED certification and material experiments
- Interactions of social and cultural practices with equity and community resilience to hazards.

What is the suggested sequence of courses for the certificate?

Take two core classes and three electives.

[Astrix means the course is available online]*

	Required Core Classes	Recommended electives - LARP	Recommended electives - Other departments
SUMMER			Geography 593G: Intro to GIS*
FALL	RP585 – Planning for Climate Change*	SustCom 533: Urban Greening*	From list below
SPRING	LA591i: Green Infrastructure*	RP597S: Scenario Planning* LandArch 592M: Material Experiments* LandArch TBD: Cultural Heritage and Climate Change*	From list below

ELECTIVES, preferred (check on-line availability on Spire):

ECO 691E:	Ecological Responses to Climate Change (Morelli, fall)
ECO 697DL:	Sust Building & LEED Certification (Wolff, fall on-line except 3 meetings at Mt Ida)
GeoSci 591NE:	Climate Change Impacts (Bradley, spring)
NRC 590C:	Clean Energy and Climate Policy (Breger, spring)
NRC 590TP:	Adapting to Climate Change (Milman, spring)
NRC 597EC:	Analytic Methods for Energy and Climate Policy (Breger, fall)

ELECTIVES, by approval to meet student's interests:

Other LARP courses as approved by advisor

ECO 697PS:	Perspectives on Sustainability (Bates, fall)
ECO 690P:	Public Engagement & Communication (Markowitz, Spring)
ENG 891LC:	Literature & Climate Change (Sen, fall)
NRC 541:	Urban Forest Management, (Bloniarz, fall)
NRC 578:	Watershed Science and Management (Randhir, Spring)
GeoSci 557:	Coastal Processes (Woodruff, spring)*
GeoSci 558:	Paleoclimatology (Bradley, fall)
GeoSci 668:	GIS and Spatial Analysis (Yu, spring)
HPP 614:	International health, population, and development (Aboul-Enein, summer)*

Please contact the Certificate Program Advisor, Professor Elisabeth Hamin Infield, at emhamin@umass.edu, for more details.

Is there a GPA requirement?

3.0 average in major courses for matriculating students or 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.

Useful Resources

- [CCGI checksheet](#) (for advising)
- [Graduate Certificate Eligibility Form](#)