

# URBAN RESILIENCE, CERTIFICATE

The Urban Resilience Certificate draws on resilience expertise within the different departments of the School and builds upon a rich legacy at Penn. Rooted in Ian McHarg's layered-analysis methods of thinking holistically across systems and scales, the certificate offers a foundational program for "resilience by design." It includes a flexible set of courses offered at the Weitzman School of Design as well as at Wharton and the School of Engineering and Applied Science. The certificate is intended for professional graduate students enrolled at the Weitzman School of Design who are interested in adding an understanding of urban resilience, and how to design within a risky and uncertain world, to their list of educational qualifications.

The term resilience has different meanings in different domains. Often it is defined simply as the ability to deal with specific shocks or stresses. Resilience, for example, is easily equated with flood risk management. In the engineering world the term is generally used to mean the ability to withstand or bounce back from shocks or stresses. Such simple definitions not only run the risk of overlooking the distinctions between damage mitigation, resilience, and adaptation, but they also misrepresent the transformative potential of the concept. A broader definition of (urban) resilience, as the "capacity of individuals, communities, institutions, business, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience" (*100 Resilient Cities*), challenges us to think of urban systems as complex and adaptive. Designing in such systems forces designers to work across disciplines, at different (time-) scales simultaneously, and in both the social and physical domains. Designers must accept and embrace emergence and uncertainty. While the certificate program offers students an understanding of such challenges as climate change and inequality, and introduces concrete tools for analyzing, communicating, managing, and strategizing about these challenges "by design," it also urges students to re-think the position of the design disciplines in the face of fundamental uncertainty and lack of control. The program shows students how designers can have agency by participating in cities understood as complex adaptive systems.

**For more information:** <https://www.design.upenn.edu/all-degrees-certificates/urban-resilience> (<https://www.design.upenn.edu/all-degrees-certificates/urban-resilience/>)

## Curriculum

A total of 5 course units are required to complete the Certificate program.

Code	Title	Course Units
<b>Core Courses</b>		
LARP 7800	Topics in Theory and Design	1
ARCH or LARP	Urban Resilience Studio <sup>1</sup>	2
<b>Electives</b>		
Select one from each category:		2
<i>Tools</i>		
CPLN 5310	Sustainability and Environmental Planning	
HSPV 6210	Heritage and Social Justice	
LARP 7400	Topics in Digital Media	

OIDD/ BEPP 7610/ ESE 5670	Risk Analysis and Environmental Management
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### Topics

ARCH 7120	Topics in Architecture Theory II
ARCH 7510	Ecology, Technology, and Design
CPLN 6350	Water Policy
ENMG 5030	Topics in Energy Policy

**Total Course Units** 5

<sup>1</sup> Or alternate studio approved by certificate director.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2024 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.