NYU | DEPARTMENT OF BIOLOGY

BIOL-UA 390/ENVST-UA 390 Urban Ecology

Instructor:
Katie Schneider-Paolantonio

Course Description:
We are currently living in a time where city residents outnumber people who live in rural areas. In addition, the projected expansion of human population growth is largely predicted to occur in urban areas. Urban Ecology is an interdisciplinary and emerging field of research focused on the consequences of urbanization on ecological processes. In addition to a physically transformed natural landscape, cities are unique from other systems in terms of hydrology, temperature, noise, air quality and many other abiotic factors. In this course we will investigate the consequences of urban constructs on ecological systems. We will discuss factors such as nutrient cycling, organismal behavior and phenology, disease, and the drivers and patterns of biodiversity in urban systems. We will also talk about green spaces, urban planning, and the future of these expanding manmade landscapes. A significant component of this course will involve discussion of current literature. This is an upper-level reasoning course designed primarily for students majoring in biology (ecology track) and environmental studies.

Pre-requisite:
Fundamental of Ecology (BIOL-UA 63/ENVST-UA325).

Textbook and Required Materials:
Gaston, Kevin J. Urban Ecology. Cambridge University Press, Cambridge; New York, 2010.
Additional readings will be posted on NYU Classes.

Grading:

Class Participation and response paper	40%
Student led paper discussions	30%
Class project	30%

Topics:
Course Expectations, Introduction to Urban Ecology
What are urban ecosystems?
Modeling and Urbanization
Grant Writing – Identifying Questions
Biogeochemistry and Ecosystem Functioning
Biogeochemistry and Ecosystem Functioning discussion
Plants
Plants discussion
Evolution in Urban Environments
Grant Writing: Parts of the Proposal
Foraging
Discussion of Proposal Ideas
Discussion of Proposal Ideas

Behavior and Communication
Behavior and Communication discussion
Physiology
Invasive Species discussion
Disease in Urban Ecosystems
Disease in Urban Ecosystems discussion
Patterns and Drivers of Urban Biodiversity discussion
Climate change and urban ecology
Climate change and urban ecology discussion
Humans and Nature
Grant Writing: Peer review
Green spaces and urban planning, restoration
Future Directions and Unanswered Questions
Grant Proposal Presentations